Official journal of the
TURKISH SOCIETY OF CARDIOLOGY

ISSN 2149-2263 • EISSN 2149-2271

The Anatolian Journal of Cardiology

Anatol J Cardiol • Volume 15 • Supplement 1 • October 2015

Accredited by

EBAC®

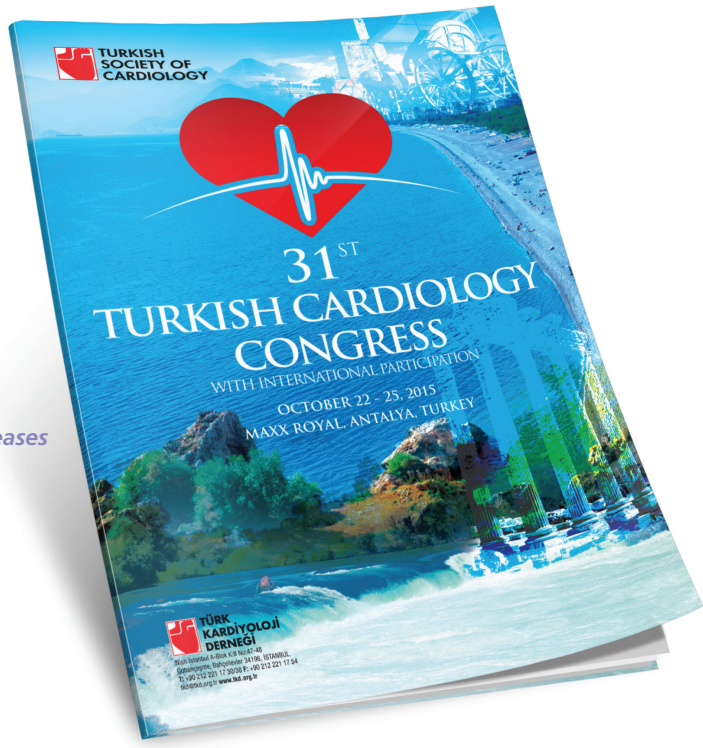
31ST TURKISH CARDIOLOGY CONGRESS

WITH INTERNATIONAL PARTICIPATION

ABSTRACTS

Oral Presentations

Poster Presentations



www.anatoljcardiol.com

The Owner and Publishing Manager on behalf of the Turkish Society of Cardiology

Türk Kardiyoloji Derneği adına İmtiyaz Sahibi ve Sorumlu Yazı İşleri Müdürü
Sadberk Lale Tokgözoğlu

Address : Nish İstanbul A Blok Kat: 8, No: 47-48
Çobançeşme Sanayi Cad. No: 11
Yenibosna, Bahçelievler 34196
İstanbul, Türkiye
Phone : +90 212 221 1730-38
Fax : +90 212 221 1754
E-mail : tkd@tkd.org.tr
Web : www.tkd.org.tr

Editor in Chief Office
Phone : +90 222 229 15 65
Fax : +90 222 229 15 85
E-mail : info@anakarder.com
btimur@ogu.edu.tr

Assistants to the Editor in Chief
Betül TUNTAŞ
Bilge TUNALI
Sadiye BULUT

The Anatolian Journal of Cardiology is partly supported by University of Eskişehir Osmangazi (ESOGU).

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ
MEŞELİK KAMPÜSÜ 26480 ESKİŞEHİR
Phone: +90 222 239 71 48
Fax: +90 222 239 54 00

KARE

Address: Kare Yayıncılık (Kare Publishing)
Söğütlüçeşme Cad., No: 76/103
Sevil Pasajı, Kat 5, 34734 Kadıköy, İSTANBUL
Tel: +90 216 550 61 11
Fax: +90 216 550 61 12
http://www.kareyayincilik.com
e-mail: kareyayincilik@gmail.com

Ali CANGÜL
Edibe ÇOMAKTEKİN
Neslihan ÇAKIR
Ali Önder USTA
Elif CANGÜL
Catherine CAMPION
Christopher McLAREN
Gianna D'EMILIO
Levent DENİZ
Meltem DENİZ

Yayın Türü: Yerel Süreli, Basım Tarihi: Ekim 2015
Basım: Yıldırım Matbaacılık, Yüzyıl Mah. Massit Matbaacılar Sitesi, 1. Cad. No: 101, Bağcılar, İstanbul, Tel: +90212 629 80 37

TURKISH SOCIETY OF CARDIOLOGY
Founded in 1963
To the future with healthy hearts

31ST TURKISH CARDIOLOGY CONGRESS

WITH INTERNATIONAL PARTICIPATION

Accredited by

EUROPEAN BOARD FOR ACCREDITATION IN CARDIOLOGY

31st Turkish Cardiology Congress with International Participation is accredited by the European Board for Accreditation in Cardiology (EBAC) for 18 hours of External CME credits.

Each participant should claim only those hours of credit that have actually been spent in the educational activity. EBAC works according to the quality standards of the European Accreditation Council for Continuing Medical Education (EACCME), which is an institution of the European Union of Medical Specialists (UEMS).

TURKISH MEDICAL ASSOCIATION COMMITTEE FOR ACCREDITATION OF CONTINUING MEDICAL EDUCATION (TTB-STE)

31st Turkish Cardiology Congress with International Participation containing 118 hours of scientific program is accredited by the Turkish Medical Association Committee for Accreditation of Continuing Medical Education (TTB-STE) for 19 hours of External CME credits.

Each participant should claim only those hours of credit that have actually been spent in the educational activity. TTB-STE works according to the quality standards of the European Accreditation Council for Continuing Medical Education (EACCME), which is an institution of the European Union of Medical Specialists (UEMS).

31ST TURKISH CARDIOLOGY CONGRESS

WITH INTERNATIONAL PARTICIPATION

THE EXECUTIVE BOARD OF TURKISH SOCIETY OF CARDIOLOGY

President	S. Lale TOKGÖZOĞLU
President Elect	Mahmut ŞAHİN
Vice President	Engin BOZKURT
Secretary General	Adnan ABACI
Secretary	Enver ATALAR
Treasurer	Mehmet Sıddık ÜLGEN
Members	Sinan AYDOĞDU
	Merih KUTLU
	Necla ÖZER

CONGRESS SCIENTIFIC COMMITTEE

President	Mahmut ŞAHİN
	Engin BOZKURT
	Enver ATALAR
	Sinan AYDOĞDU
	Merih KUTLU
	Necla ÖZER
	Mehmet AKSOY
	Mustafa Kemal EROL
	Muzaffer DEĞERTEKİN
	Murat ERSANLI
	Bülent GÖRENEK
	Mehmet Güngor KAYA
	Mustafa KILIÇKAP
	Aytaç ÖNCÜL
	Mehmet Birhan YILMAZ

ADVISORY COMMITTEE (Presidents of the Working Groups)

Interventions (TSC Interventions)	Ömer GÖKTEKİN
Arrhythmia	Mesut DEMİR
Cardiac Imaging	Leyla Elif SADE
Coronary Heart Disease	Mehmet YAZICI
Heart Failure	Mehmet Birhan YILMAZ
Hypertension	Alparslan BİRDANE
Lipid	Meral KAYIKÇIOĞLU
Valvular Heart Diseases	Mustafa AYDIN
Cardiovascular Nurses and Technicians	Serap ÖZER
CPR Course	Başar CANDER

ABSTRACTS EVALUATION COMMITTEE

Adnan Abacı
Mahmut Açıkel
Ayşen Ağaçdiken Ağır
Nihal Akar Bayram
Mehmet Akbulut
Mustafa Akçakoyun
Ahmet Akçay
Bahri Akdeniz
Ebru Akgül Ercan
Onur Akpınar
Ahmet Altınbaş
Burak Altun
Basri Amasyalı
Dursun Aras
Alev Arat Özkan
Şakir Arslan
Zekeriya Arslan
Necmi Ata
Enver Atalar
Mehmet Ateş
Mustafa Aydın
Ali Aydınlar
Sinan Aydoğdu
Erkan Ayhan
Murat Başkurt
Emrullah Başar
İbrahim Başarıcı
Osman Başpınar
Özgür Bayturan
Serdar Bayata
Duhan Fatih Bayrak
Kemal Baysal
Alparslan Birdane
Murat Biteker
Asiye Ayça Boyacı
Bülent Nuri Boyacı
Hüseyin Bozbaş
Engin Bozkurt
İlknur Can
Münacettin Ceviz
Faruk Cingöz
Mahmut Çakmak
Yüksel Çavuşoğlu
Murat Çaylı
Ataç Çelik
Turgay Çelik
Alpay Çeliker
Yengi Umut Çelikyurt
Atiye Çengel
Yüksel Çiçek
Yücel Çölkesen
Necmi Değer
Mesut Demir
Sabri Demircan
Mustafa Demirtaş
Mustafa Hakan Dinçkal
Abdullah Doğan
Mehmet Doğan
Yüksel Doğan
Murtaza Emre Durakoğlugil
Tahir Durmaz
Dursun Dursunoğlu
Ahmet Barış Durukan
Mehmet Akif Düzenli
Mehmet Ali Elbey
Ömer Naci Emiroğulları
Sibel Enar
Alim Erdem
Okan Erdoğan
Mehmet Eren
Ali Ergin
Necip Ermiş
Serpil Eroğlu
Çetin Erol
Mustafa Kemal Erol
Namık Kemal Eryol
Ali Metin Esen
Özlem Esen
Remise Gelişgen
Kani Gemici
Mustafa Gökçe
Ömer Göktekin
İbrahim Gül
Nazmi Gültekin
Okan Gülel
Öykü Gülmez
Hasan Ali Gümrükçüoğlu
Yılmaz Güneş
Ünal Güntekin
Cemil Gürgün
Adalet Gürlek
Hanefi Yekta Gürlertop
Metin Gürsürer
Aytekin Güven
Gülay Hergenç
Turgay Işık
Kenan İltümür
Hikmet İyem
Fehmi Kaçmaz
Asuman Kaftan
Gökhan Kahveci
Ahmet Karabulut
Selmin Karademir
Şule Karakelleoğlu
Hekim Karapınar
Ejder Kardeşoğlu
Hakan Karpuz
Hasan Kaya
Mehmet Güngör Kaya
Meral Kayıkçıoğlu
Alper Kepez
Ayhan Kılıç
Barış Kılıçaslan
Mustafa Kılıçkap
Suna Fatma Kıraç
Ata Kırılmaz
M. Vedat Koca
Lale Koldaş
Hasan Korkmaz
Şule Fatma Korkmaz
Mustafa Feridun Koşar
Nevrez Koylan
Güliz Kozdağ
Hasan Kudat
Ethem Kumbay
İbrahim Halil Kurt
Nuri Kurtoğlu
Merih Kutlu
Makbule Kutlu Karadağ
Zekeriya Küçükdurmaz
Akif Turhan Kürüm
Mehmet Melek
Fehmi Mercanoğlu
Mehmet Meriç
Haşim Mutlu
İstemi Nalbantgil
Yılmaz Nişancı
Tuğrul Okay
Ayhan Olcay
Ersel Onrat
Ertan Ökmen
Zeki Öngen
Ender Örnek
İsmail Türkay Özcan
Kurtuluş Özdemir
Necla Özer
Filiz Özerkan Çakan
Kanat Özışık
Namık Özmen
Önal Özsaruhan
Cengiz Öztürk
Serkan Öztürk
Selçuk Pala
Leyla Elif Sade
Abdi Sağcan
İbrahim Sarı
Nurten Sayar
Yusuf Selçoki
Ender Semiz
Osman Akın Serdar
Alpay Turan Sezgin
Özlem Soran
Yusuf Alper Sönmez
Mehmet Murat Sucu
Mahmut Şahin
Asife Şahinarslan
Mustafa Şan
Hakkı Şimşek
Günsel Şurdum Avcı
Ersan Tatlı
Sedat Tavşanoğlu
Yelda Tayyareci
Ahmet Temizhan
Bilgin Timuralp
Lale Tokgözoğlu
Ergün Topal
Nizamettin Toprak
Murat Tulmaç
Cansın Tulunay Kaya
Mustafa Tuncer
Murat Turfan
Okan Onur Turgut
Omaç Tüfekçioğlu
Uğur Önsel Türk
Cüneyt Türkoğlu
Melek Zekiye Uluçam
Taner Ulus
Berrin Umman
Dilek Ural
Ertan Ural
Hafize Uzun
Mehmet Uzun
Mehmet Sıddık Ülgen
Mehmet Sinan Üner
Haşim Üstünsoy
Ahmet Vural
Tahir Yağdı
Oğuz Yavuzgil
Mehmet Yazıcı
Osman Yeşildağ
Ercüment Yılmaz
Fatma Yiğit
Mehmet Birhan Yılmaz
Remzi Yılmaz
Selen Yurdakul
Mustafa Yurtdaş
Murat Yüce
Hüsniye Yüksel
Mehdi Zoghi
Cafer Sadık Zorkun

BEST POSTER JURY

Lale Koldaş (President)
Yusuf Bahadır
Özer Badak
Gani Bajraktari
Mehmet Kayrak
Nurgül Keser
Asife Şahinarslan
M. Levent Şahiner
M. Sıddık Ülgen
Murat Yüce

TURKISH SOCIETY OF CARDIOLOGY
Founded in 1963
To the future with healthy hearts

31ST TURKISH CARDIOLOGY CONGRESS
WITH INTERNATIONAL PARTICIPATION

Dear Colleagues,

We would like to welcome you to the 31st Turkish Cardiology Congress with International Participation which will take place between 22 and 25 October 2015 in Antalya.

Last year over 3000 participants participated in the Congress. This year we expect to receive a high level of international participation from member states to the European Society of Cardiology, from Neighbouring Countries, Balkan Countries and Turkic Republics.

The Turkish Society of Cardiology Congress with its high quality scientific content and large number of participants offers an up to date scientific program to its participants. The international dimension of the Congress is strengthened further this year; and both the Turkish Medical Association and EBAC has accredited the Congress.

Opinion leaders -both from Turkey and abroad- will participate in the scientific sessions. You will also have the chance to participate in joint sessions organized in collaboration with the international societies; such as ESC, ACC, EuroPCR, ICRR, and EHRA.

We will discuss and update our knowledge on cardiovascular diseases in different sessions in the format of "Symposium", "Debates" and "How to Sessions". We will also improve our skills through "Interactive Courses" with a certificate provided to course participants. We increased the number the courses thanks to the intensive demand experienced in the last years.

The congress will be held again in the Maxx Royal Congress Center, in the beautiful city of Antalya.

We hope to see you at 31st Turkish Cardiology Congress with International Participation.

Looking forward to a productive meeting...

Prof. Dr. Lale Tokgözoğlu
President

Prof. Dr. Mahmut Şahin
President Elect

TURKISH SOCIETY OF CARDIOLOGY
Founded in 1963
To the future with healthy hearts

31ST TURKISH CARDIOLOGY CONGRESS
WITH INTERNATIONAL PARTICIPATION

CONTENTS

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-001

Usefulness of notched duration to predict response to cardiac resynchronization therapy

Mustafa Mücahit Balcı, Kevser Gülcihan Balcı, Fatih Şen, Orhan Maden, Sefa Ünal, Timur Selçuk, Hatice Selçuk

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: The presence of notches in the biventricular paced QRS complex (BiP-QRS) from the posterolateral cardiac vein displays delays in the activation of the left ventricle and may consequently be linked with longer times of stimulus conduction. Our objective was to determine the relationship between the notch duration ≥0.1 mV in the BiP-QRS and the effectiveness of cardiac resynchronization therapy (CRT).

Materials and Method: A total of 210 patients who underwent de novo CRT implantation previously and had ≥1 follow-up between August 2009 and February 2014, were enrolled in the study. Echocardiographic response to CRT was defined as an increase of ≥5% in ejection fraction and clinical response to CRT was defined as improvement ≥1 in New York Heart Association class without heart failure hospitalization after 6-months of CRT implantation.

Results: At a mean follow-up of 9.2±2.1 months, 142 patients (67%) were classified as responders to cardiac resynchronization therapy. BiP - QRS duration was significantly longer among non-responders compared to responders (p=0.036). More of the non-responders have notched in their BiP- QRS than responders (63% vs. 40%, p=0.002). Median duration of notch was significantly higher among non-responders (80 milliseconds vs. 67.5 milliseconds, p=0.041). Notch duration > 67.5 milliseconds was associated with 2.8 times higher non-response to therapy (OR 2.8; %95 CI : 1.075-7.588, p=0.035).

Discussion and Conclusion: Patients with notch duration greater than 67.5 milliseconds are associated with poor response to cardiac resynchronization therapy. Notch duration >67.5 milliseconds predicts nonresponse to therapy with 50.0% specificity and 72.1% sensitivity.

Table 1. Patients characteristics

Variables	Responders (n=142)	Nonresponders (n=68)	p-value
Age	59.9±11.7	60.8±11.0	0.621*
Sex			0.970‡
Male	111 (78%)	53 (78%)	
Female	31 (22%)	15 (22%)	
QRS duration (ms)	150 (120-200)	150 (120-200)	0.866¶
Etiology			0.363‡
Ischemic	68 (53%)	33 (60%)	
Nonischemic	61 (47%)	22 (40%)	
PQRS duration (ms)	120 (90-160)	130 (90-180)	**0.034¶**
Baseline EF %	25 (12-35)	25 (10-35)	0.745¶
Number of notched myocardial segments			0.275‡
Number of segments <2	28 (65%)	15 (35%)	
Number of segments ≥2	34 (59%)	24 (41%)	
HT	87/129 (67%)	41/55 (74%)	0.338¶
DM	49/129 (38%)	20/55 (36%)	0.835¶
CAD	66/129 (51%)	35/55 (64%)	0.120¶
PCI	57/129 (44%)	32/55 (58%)	0.082¶
Beta-receptor bloker	127/128 (99%)	54/55 (98%)	0.5125
Statin	41/128 (32%)	23/54 (43%)	0.1731
Amiodarone	24/128 (19%)	12/55 (22%)	0.6324
ACEI/ARB	122/128 (95%)	51/55 (93%)	0.4915
Baseline NYHA			0.629‡
2	37 (29%)	18 (33%)	
3	90 (71%)	37 (67%)	
Notch duration	67.5 (40-125)	80 (40-160)	**0.041¶**

Table 2. Multivariate analysis of relevant variables

Variables	Odds Ratio	%95 Confidence Interval		p-value
		Lower	Upper	
Notch duration >67.5	2.8	1.075	7.588	**0.035**
Ischemic etiology	1.3	0.485	3.527	0.597
Paced QRS duration	0.9	0.942	1.011	0.168
Male gender	0.8	0.381	2.056	0.776
Baseline QRS duration	1.0	0.977	1.024	0.996
Baseline ejection fraction	1.0	0.963	1.099	0.403

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-002

Prolongation of the QRS interval is a predictor of ongoing mechanical dyssynchrony early after cardiac resynchronization therapy

Oğuz Karaca, Mehmet Onur Omaygenç, Beytullah Çakal, Hacı Murat Güneş, Ekrem Güler, Filiz Kızılırmak, Sinem Deniz Çakal, Gamze Babur Güler, Gültekin Günhan Demir, İrfan Barutçu, Bilal Boztosun, Fethi Kılıçaslan

İstanbul Medipol University, İstanbul

Introduction: Cardiac resynchronization therapy (CRT) has been proven to improve outcome of patients with systolic dysfunction by correcting intra-ventricular mechanical dyssynchrony. Although QRS duration is the main criterion to select candidates for CRT, less concern is addressed for the CRT-induced QRS change (ΔQRS). We evaluated the relationship between the ΔQRS and post-implantation mechanical dyssynchrony as well as the predictors of having residual dyssynchrony following CRT.

Materials and Method: 80 patients that received CRT in a single tertiary center were prospectively included in the study. Based on the difference between the baseline (QRS1) and the paced (QRS2) intervals, ΔQRS values were calculated. Following device implantation, residual left ventricular mechanical dyssynchrony was assessed with longitudinal dyssynchrony index (Yu index) to divide patients into two groups as: group A (Yu index 33 msec).

Results: Patients in group B had significantly longer QRS2 durations (182.5±16.2 vs. 165.4±22.5 msec, p=0.03) and were less likely to have LV leads located in the posterolateral vein (53% vs 85%, p=0.002). Yu index was found to have a significant correlation with ΔQRS values (r=-0.341, p=0.002) and having a prolonged QRS was associated with mechanical dyssynchrony following CRT (p=0.00008). Along with the posterolateral localization of the LV lead, CRT-induced QRS prolongation emerged as the significant predictors of having residual mechanical dyssynchrony after CRT. A ROC curve analysis revealed that 10 milliseconds of QRS prolongation had a significant predictive value for the presence of having mechanical dyssynchrony after CRT (sensitivity = 80%, specificity = 62%, AOC: 0.665, p=0.011).

Discussion and Conclusion: CRT-induced QRS change is associated with the residual dyssynchrony status early after device implantation. 10 milliseconds of QRS prolongation predicts ongoing mechanical dyssynchrony following CRT.

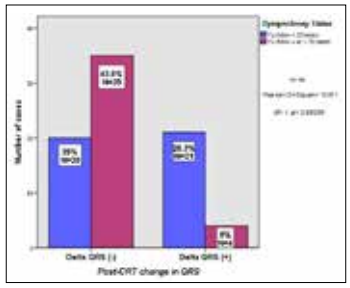


Figure 1. QRS change and mechanical dyssynchrony

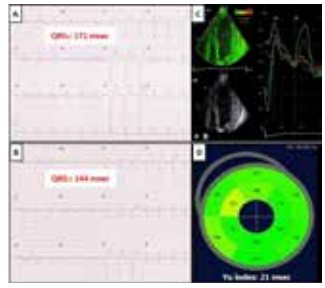


Figure 2. QRS narrowing and mechanical synchronization

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-003

Residual electrical dyssynchrony predicts ventricular arrhythmias following cardiac resynchronization therapy

Oğuz Karaca, Mehmet Onur Omaygenç, Beytullah Çakal, Hacı Murat Güneş, Filiz Kızılırmak, Ekrem Güler, Sinem Deniz Çakal, Gamze Babur Güler, Gültekin Günhan Demir, İrfan Barutçu, Bilal Boztosun, Fethi Kılıçaslan

İstanbul Medipol University, İstanbul

Introduction: Occurrence of malignant ventricular arrhythmias is of critical importance in CRT recipients leading to poor clinical outcome. We evaluated 1) the predictors of ventricular arrhythmic events in follow-up of CRT patients and 2) the association of residual electrical and mechanical dyssynchrony with the occurrence of malignant arrhythmias following CRT.

Materials and Method: 95 patients were evaluated both before and early after implantation of a CRT-D device. Having a prolonged QRS interval than the baseline and having a Yu index ≥33 milliseconds early after device implantation were designated as residual electrical and mechanical dyssynchrony, respectively. Occurrence of a ventricular arrhythmic event was the primary end-point of the study.

Results: 45 patients (47%) reached the study end-point during a follow-up of 9±3 months. Change in QRS interval induced by CRT (ΔQRS) was significantly lower in patients with an arrhythmic event. Both baseline and CRT-induced QRS intervals along with Yu index values were not different in two groups. Patients having an arrhythmic event (VT/VF+) were statistically more likely to have residual electrical dyssynchrony (percentage of having a – ΔQRS, 38% vs. 9%, p=0.021) but no statistical association was found with mechanical and electro-mechanical dyssynchrony. Kaplan-Meier curves showed that having residual electrical dyssynchrony was significantly associated with the occurrence of ventricular arrhythmias (p = 0.016). Multivariable Cox regression model revealed that QRS prolongation is the only independent predictor of malignant ventricular arrhythmias after CRT (p=0.029).

Discussion and Conclusion: Residual electrical dyssynchrony is significantly associated with malignant ventricular arrhythmias during follow-up of CRT recipients. Reaching a narrowed QRS than the baseline may be a reliable target both during implantation and optimization of devices to prevent arrhythmic events following CRT.

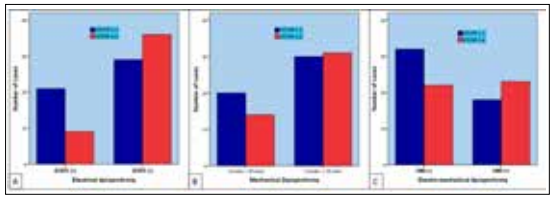


Figure 1. Association of dyssynchrony with VT/VF

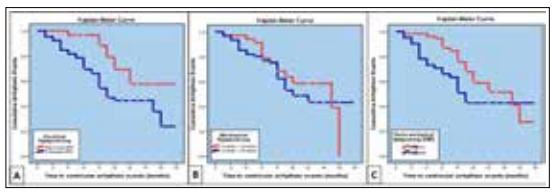


Figure 2. Kaplan-Meier curves for estimation of VT/VF

Other

OP-004

Mutation screening in Turkish patients with hypertrophic cardiomyopathy

Evrim Kömürcü Bayrak[1], Fatih Bayrak[2], Gökhan Kahveci[3], Ulaankhuu Batgerel[2], Filiz Güçlü Geyik[1], Nihan Erginel Unaltuna[1]

[1]İstanbul University, Institute For Experimental Medicine, İstanbul
[2]Acıbadem University, İstanbul
[3]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Hypertrophic cardiomyopathy (HCM) is mainly associated with missense mutations in cardiac beta-myosin heavy chain (MYH7), myosin binding protein C (MYBPC3) and cardiac troponin T (TNNT2) genes (45-50%). There is little knowledge about genetic background of familial hypertrophic cardiomyopathy in Turkey. In this study, our aim was to determine a causing mutation in three sarcomeric genes (MYH7, MYBPC3 and TNNT2) in Turkish families with HCM and high-risk for sudden cardiac death (SCD).
Materials and Method: The study included 85 unrelated patients with HCM (22 familial and 63 sporadic cases). All participants were evaluated with a detailed history, physical examination, 12-lead electrocardiography and two-dimensional echocardiography. DNA was extracted from peripheral blood. MYH7, MYBPC3 and TNNT2 genes were analyzed in 12 selected index cases of early onset (<40 years) clinically diagnosed HCM patients with a positive family history for HCM and SCD using array-based re-sequencing. All novel variants and known mutations were confirmed with Sanger sequencing. And also we sequenced exons 18-20 of MYH7 gene in 73 HCM patients.
Results: Pathogenic missense mutations were found in 8/12 of index cases. These mutations are Val698Ala, Arg719Trp, Met822Leu and Arg663Cys (in three cases) in the MYH7 gene, Tyr525Asn in the MYBPC3 gene and Arg102Trp in the TNNT2 gene. From 73 HCM patients, pathogenic mutations were found in 5 individuals in mutation screening of selected exons in MYH7 gene. These mutations are Arg719Trp, Arg663His, R663C (in two cases) and Ile736Thr. 10/13 of cases with mutations had a positive family history for HCM and SCD. Detection of missense mutations within the family members is ongoing.
Discussion and Conclusion: Our preliminary results demonstrate high-risk mutations in Turkish hypertrophic cardiomyopathy patients under risk for SCD and highlight the importance of mutation screening in sporadic cases and especially families. Acknowledgments: This study was supported by Turkish Society of Cardiology and Scientific Research Projects Coordination Unit of Istanbul University (Project number: 42173).

Other

OP-005

Would anti-hypertensive treatment be a risk factor for national health budget of Turkey in 2023?

Mustafa Aldemir, Mehmet Bilgehan Pektaş, Ayhan Pektaş, Önder Akci, İsmet Doğan

[1]Afyon Kocatepe University Faculty of Medicine, Afyon

Introduction: This study aims to predict the prevalence of hypertension and the cost of anti-hypertensive treatment in future by analyzing the adults diagnosed with hypertension and the drugs prescribed for their treatment in Turkey during a period of five years.
Materials and Method: This study reviews data related to the patients diagnosed with hypertension amongst the individuals registered within the Medula database of the Turkish Social Insurance Institution from 2009 to 2013.
Results: A significant and gradual increase was specified in the prevalence of hypertension during the study period. The number of female patients was significantly higher than the number of male patients over the passing years. The number of anti-hypertensive drug boxes consumed was significantly increased during the study period. Surprisingly, the number of anti-hypertensive boxes annually consumed by the hypertensive patients remained statistically similar between 2009 and 2013. A significant increase was noted in the prescription of angiotensin II receptor blockers, beta blockers, and angiotensin converting enzyme inhibitors during the study period. The cost of anti-hypertensive treatment was found to decrease by 36.7% during the study period.
Discussion and Conclusion: The economical measures currently adopted for drug pricing are successful but health policies developed for the prevention of hypertension are inadequate.

Table 1. The money paid for anti-HT drugs

Years	ATD	ADS ($)	TPS ($)
2009	80.317.353	766.311.342,59	6.133.909.347,89
2010	95.543.024	742.153.908,90	6.170.609.510,13
2011	106.338.198	717.881.937,80	6.259.224.802,64
2012	112.985.043	629.619.272,69	6.320.454.466,37
2013	122.529.653	663.182.696,09	6.789.881.615,58

Epidemiology

OP-006

ReAl-life multicenter survey evaluating stroke prevention strategies in Turkey (RAMSES) study

Özcan Başaran[1], Osman Beton[2], Volkan Doğan[1], Mehmet Tekinalp[3], Ahmet Çağrı Aykan[4], Ezgi Kalaycıoğlu[4], İsmail Bolat[5], Onur Taşar[6], Özgen Şafak[7], Macit Kalçık[8], Mehmet Yaman[9], Aytekin Aksakal[9], Selami Demirelli[10], Aleks Değirmencioğlu[11], Bingül Dilekçi Şahin[10], İbrahim Altun[1], Kadriye Memic Sancar[1], Cevat Kırma[12], Mustafa Özcan Soylu[1], Murat Biteker[4]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Cumhuriyet University, Faculty of Medicine, Sivas
[3]Necip Fazıl Şehir Hospital, Kahramanmaraş
[4]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[5]Fethiye State Hospital, Muğla
[6]Elazığ Training and Research Hospital, Elazığ
[7]Burdur State Hospital, Burdur
[8]İskilip Atıf Hoca State Hospital, Çorum
[9]Samsun Training and Research Hospital, Samsun
[10]Erzurum Regional Training and Research Hospital, Erzurum
[11]Acıbadem Maslak Hospital, İstanbul
[12]Kartal Koşuyolu Training and Research Hospital, İstanbul

Introduction: Atrial fibrillation (AF) is the most common arrhythmia and is associated with serious comorbidities. The prevalence of AF increases with age and increased age is also a risk factor for comorbid situations such as hypertension, coronary heart disease, and congestive heart failure. In this study, we aimed to assess the epidemiology of non-valvular AF (NVAF) and current patterns of treatment in order to identify therapeutic trends and aspects of current practice in Turkey.
Materials and Method: This is a prospective, observational study that was conducted in outpatient cardiology clinics. We enrolled a total number of 6273 NVAF patients in 57 sites, reflecting all the population of the 7 geographical regions of Turkey. Patients were excluded if they had valve replacement or mitral stenosis.
Results: Of the 6273 patients 2769 (44%) were male and the mean age was 70±11. The major part of our study population found to live in urban area 4051 (65%). According to educational status, 1860 (30%) of our patients were illiterate. The most common comorbid situation was hypertension. The mean CHA_2DS_2VASc score was 3.3±1.6 and HAS-BLED score was 1.6±1.1 (Table).
Discussion and Conclusion: Our study is the first comprehensive multicenter epidemiological study concerning non-vitamin K antagonist and warfarin use in NVAF patients. Our findings are similar with previous studies, however, we find that NVAF is more common among women than men in our country.

Table 1. Demographic properties and comorbid diseases

Demographic Properties	N (%)	Comorbidities	N (%)
Male	2769 (44)	Coronary heart disease	1828 (29)
Age (mean)	70 ± 11	Congestive heart failure	1386 (22)
Smoker	1023 (16)	Hypertension	4305 (69)
Alcohol use	147 (2)	Diabetes Mellitus	1389 (22)
Place of residence (Urban)	4051 (65)	Chronic obstructive pulmonary disease	1448 (23)
Educational status			
Illiterate	1860 (30)		
Primary school	2267 (36)		
Secondary school	802 (13)		
High school	890 (14)		
University	350 (6)	Scores	Mean±SD
Atrial fibrillation type		CHA_2DS_2VASc	3.3 ± 1.6
First attack	290 (5)		
Paroxysmal	859 (14)	HAS-BLED	1.6 ± 1.1
Persitant or permanent	5066 (81)		

Interventional cardiology / Structural heart and valve diseases

OP-007

Comparison of echocardiographic outcomes of CoreValve versus Edwards Sapien valves in patients with aortic stenosis: single center experience

Zülkif Tanrıverdi[1], Hüseyin Dursun[2], İnci Tuğçe Çöllüoğlu[2], Deniz Çırgamış[2], Dayimi Kaya[2]

[1]İdil State Hospital, Şırnak
[2]Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Transcatheter Aortic Valve Implantation (TAVI) with the CoreValve Revalving System (MCV) (Medtronic Inc., Minneapolis, MN) and Edwards SAPIEN XT (ESV) (Edwards Lifesciences, Irvine, CA) bioprosthesis has been widely used for the treatment of severe aortic stenosis. However, few data is available comparing hemodynamic performance of these two prostheses by echocardiography. In this study we aimed to present our echocardiographic data regarding the comparison of these two bioprosthetic valves. To the best of our knowledge this is the first study comparing one year echocardiographic outcomes of two types of valves in our country.
Materials and Method: A total of 78 patients (MCV:49 patients, ESV: 29 patients) who underwent TAVI between June 2012 and June 2014 were enrolled in this study. The pre-procedural and post-procedural echocardiographic measurements of all patients were recorded and both bioprosthesis were compared.
Results: The pre-procedural echocardiographic and doppler measurements are listed in Table 1. Both groups were similar in terms of mean pre-procedural measurements. However post-procedural maximum (13.42±5.76 vs. 18.69±8.10, p=0.001) and mean transaortic gradients (6.53±3.19 vs. 9.41±4.33, p<0.001) were significantly lower in the MCV group than in the ESV group. There were no significant differences in other variables including paravalvular leakage (PVL) (Table 2). Similarly at 1st year control, maximum (13.76±7.59 vs. 21.99±6.90, p=0.002) and mean transaortic gradients (6.83±3.97 vs. 9.77±2.33, p=0.003) were significantly lower in the MCV group (Table 3).
Discussion and Conclusion: Our results consisted with the literature demonstrated that MCV bioprosthesis is associated with lower post-procedural residual transaortic gradients with similar rates of PVL compared to ESV. These findings seem to continue until 1st year of follow-up.

Table 1. Baseline echocardiographic and doppler measurements

	MCV (n=49)	ESV (n=29)	P
LVEF (%)	50.06±15.57	52.96±14.67	0.421
LVESD (cm)	3.37±1.05	3.29±0.93	0.774
LVEDD (cm)	4.80±0.81	4.77±0.66	0.691
IVS (cm)	1.48±0.23	1.50±0.24	0.677
PW (cm)	1.30±0.16	1.29±0.12	0.761
Left atrium diameter (mm)	4.67±0.57	4.80±0.58	0.261
Degree of MR	1.71±0.87	1.68±0.82	0.848
Degree of AR	1.10±0.71	1.36±0.68	0.096
Degree of TR	2.27±0.96	2.14±0.80	0.497
Maximum AV gradient (mmHg)	74.73±17.65	75.43±18.84	0.775
Mean AV gradient (mmHg)	46.98±11.49	47.89±12.24	0.645
AVA (cm^2)	0.56±0.13	0.56±0.13	0.766
PAPs (mmHg)	49.02±15.57	47.20±14.17	0.802

LVEF: Left ventricular ejection fraction, LVESD: Left ventricle end systolic diameter, LVEDD: Left ventricle end diastolic diameter, IVS: Interventricular septum, PW: posterior wall, MR: Mitral regurgitation, AR: Aortic regurgitation, TR: Tricuspid regurgitation, AVA: Aortic valve area, PAPs: pulmonary arterial systolic pressure

Table 2. Post-procedural echocardiographic and doppler measurement

	MCV (n=49)	ESV (n=29)	P
LVEF (%)	54.06±14.12	59.14±10.56	0.213
LVESD (cm)	3.24±0.87	3.11±0.67	0.800
LVEDD (cm)	4.74±0.71	4.75±0.52	0.816
IVS (cm)	1.45±0.19	1.49±0.23	0.333
PW (cm)	1.28±0.14	1.28±0.12	0.824
Left atrium diameter (mm)	4.57±0.58	4.55±0.55	0.966
Degree of MR	1.33±0.81	1.36±0.68	0.595
Degree of AR	0.54±0.62	0.46±0.58	0.620
Degree of TR	1.81±0.84	1.71±0.85	0.761
Maximum AV gradient (mmHg)	13.42±5.76	18.69±8.10	**0.001**
Mean AV gradient (mmHg)	6.53±3.19	9.41±4.33	**<0.001**
AVA (cm²)	1.75±0.23	1.89±0.47	0.441
≥2 paravalvular leak (%)	8.2	3.4	0.646
PAPs (mmHg)	40.90±15.43	39.29±16.13	0.646

Table 3. One year echocardiographic and doppler measurement

	MCV (n=49)	ESV (n=29)	P
LVEF (%)	55.50±13.38	58.77±15.45	0.130
LVESD (cm)	3.38±0.85	3.22±0.89	0.516
LVEDD (cm)	4.92±0.63	4.94±0.63	0.926
IVS (cm)	1.36±0.18	1.32±0.22	0.714
PW (cm)	1.20±0.14	1.18±0.11	0.702
Left atrium diameter (mm)	4.60±0.52	4.58±0.59	0.681
Degree of MR	1.43±0.86	1.31±0.85	0.642
Degree of AR	0.50±0.68	0.54±0.52	0.620
Degree of TR	1.67±0.84	1.92±0.76	0.323
Maximum AV gradient (mmHg)	13.76±7.59	21.99±6.90	**0.002**
Mean AV gradient (mmHg)	6.83±3.97	9.77±2.33	**0.003**
AVA (cm²)	1.81±0.28	1.84±0.41	0.805
≥2 paravalvular leak (%)	6.1	3.4	1.000
PAPs (mmHg)	39.37±15.80	46.00±13.35	0.106

Interventional cardiology / Structural heart and valve diseases

OP-008

The effect of transcatheter aortic valve implantation on long-term echocardiographic parameters: single center experience

Zülkif Tanrıverdi[1], Hüseyin Dursun[2], İnci Tuğçe Çöllüoğlu[2], Deniz Çırgamış[2], Dayimi Kaya[2]

[1]İdil State Hospital, Şırnak
[2]Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Transcatheter Aortic Valve Implantation (TAVI) has emerged as a new therapeutic option alternative to surgical aortic valve replacement for inoperable or high risk patients with severe aortic stenosis. In our country there is limited data evaluating long-term hemodynamic outcomes of TAVI. The aim of our study is to investigate the impact of TAVI on long-term echocardiographic parameters.
Materials and Method: We examined baseline and post-procedural 1-year echocardiographic measurements of 78 consecutive patients who had undergone TAVI in our clinic between June 01, 2012 and June 07, 2014.
Results: Echocardiographic measurements of the baseline and 1 year after the procedures are demonstrated in Table 1. When compared to pre-procedural results; left ventricular ejection fraction (LVEF; 50.1±16.2 vs. 56.5±13.9, p=0.003) and aortic valve area (AVA; 0.6±0.1 vs. 1.8±0.3, p<0.001) increased significantly. In addition interventricular septum (IVS; 1.4±0.2 vs. 1.3±0.2, p<0.001), and posterior wall thicknesses (PW; 1.3±0.1 vs. 1.2±0.1, p<0.001); maximum (72.5±18.0 vs. 16.3±8.3, p<0.001) and mean transaortic gradients (45.2±11.1 vs. 7.7±3.8, p<0.001) with pulmonary arterial systolic pressures (PAPs; 49.3±16.0 vs. 41.4±15.3, p=0.016) were reduced significantly one-year after TAVI (Figure 1). The degree of mitral and tricuspid regurgitations were also reduced significantly (p=0.015 and p=0.006, respectively). Significant paravalvular leakage of ≥2 degree was noted in 4 (5.1%) patients at first year control.
Discussion and Conclusion: Our study demonstrated that TAVI has significantly favorable effects on most of the echocardiographic parameters which can be observed one year after the procedure. These results are comparable with previous worldwide registries.

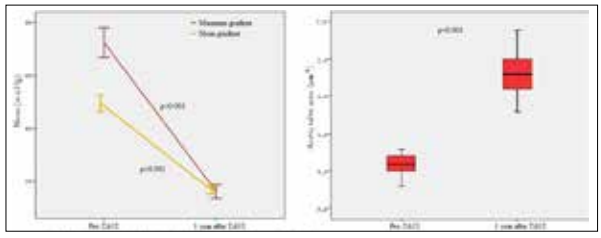


Figure 1. Transaortic gradients and aortic valve area pre-procedurally and one year after TAVI

Table 1. Ecnocardiographic measurements of the baseline and 1 year after the procedures

	Baseline	1 year after TAVI	P
LVEF (%)	50.1±16.2	56.5±13.9	0.003
LVESD (cm)	3.4±1.0	3.3±0.9	0.335
LVEDD (cm)	4.9±0.8	4.9±0.6	0.348
IVS (cm)	1.4±0.2	1.3±0.2	<0.001
PW (cm)	1.3±0.1	1.2±0.1	<0.001
Left atrium diameter (cm)	4.7±0.5	4.6±0.5	0.208
Maximum AV gradient (mmHg)	72.5±18.0	16.3±8.3	<0.001
Mean AV gradient (mmHg)	45.2±11.1	7.7±3.8	<0.001
AVA (cm²)	0.6±0.1	1.8±0.3	<0.001
Degree of MR	1.7±0.9	1.4±0.8	0.015
Degree of TR	2.3±1.0	1.8±0.8	0.006
PAPs (mmHg)	49.3±16.0	41.4±15.3	0.016

LVEF: left ventricular ejection fraction; LVESD: left ventricular endsystolic diameter; LVEDD: left ventricular enddiastolic diameter; IVS: Interventricular septum thickness; PW: posterior wall thickness; AV: aortic valve; AVA: aortic valve area; MR: mitral regurgitation; TR: tricuspid regurgitation; PAPs: pulmonary arterial systolic pressure

Interventional cardiology / Coronary

OP-009

Prognostic impact of chronic total occlusions—a report from the swedish coronary angiography and angioplasty registry (SCAAR)

Elmir Omerovic

Sahlgrenska University Hospital, Gothenburg, Sweden

Introduction: Chronic total occlusions (CTO) are present in many patients with coronary artery disease and are difficult to treat with percutaneous coronary intervention (PCI). Our aim was to determine the prognostic impact of CTO on long-term mortality in a large prospective cohort.
Materials and Method: The study population consisted of all consecutive patients who underwent coronary angiography in Sweden between January 1, 2005, and January 1, 2012 who were registered in the Swedish Coronary Angiography and Angioplasty Registry (SCAAR). We compared the long-term mortality rates of patients with and without CTO by using shared frailty Cox proportional-hazard regression adjusted for confounders. We tested for interactions between CTO and several prespecified characteristics: indication for angiography and PCI [stable angina, ST-elevation myocardial infarction (STEMI), unstable angina/non-STEMI, and other], severity of CAD (one-, two-, and three-vessel and/or left main disease), age, gender, and diabetes.
Results: During the study period, 14,441 CTO and 75,431 non-CTO patients were registered in SCAAR. CTO was associated with higher mortality (hazard ratio 1.29, 95% confidence interval 1.22–1.37, p<0.001). In subgroup analyses, risk was lowest in patients with stable angina and highest in those with STEMI. In addition, CTO was associated with highest risk in patients under 60 years of age and with lowest risk in octogenarians. There was no interaction between CTO and either diabetes or gender, suggesting an equally adverse effect in both groups.
Discussion and Conclusion: In this large prospective observational study of patients with coronary artery disease, CTO was associated with increased mortality. This association was most prominent in younger patients and in patients with acute coronary syndromes.

Heart failure

OP-010

Mortality in takotsubo syndrome is similar to mortality in myocardial infarction—a report from the SWEDEHEART registry

Elmir Omerovic

Sahlgrenska University Hospital, Gothenburg, Sweden

Introduction: Takotsubo syndrome is an acute cardiovascular condition that predominantly affects women. In this study, we compared patients with takotsubo syndrome and those with acute myocardial infarction with respect to patient characteristics, angiographic findings, and short- and long-term mortality.
Materials and Method: From the Swedish Coronary Angiography and Angioplasty Registry (SCAAR) and the Register of Information and Knowledge about Swedish Heart Intensive Care Admissions (RIKS-HIA), we obtained and merged data on patients undergoing coronary angiography in Västra Götaland County in western Sweden between January 2005 and May 2013. Short- and long-term mortality in patients with takotsubo (n=302) and patients with ST-elevation myocardial infarction (STEMI, n=6595) and non-ST-elevation myocardial infarction (NSTEMI, n=8207) were compared by modeling unadjusted and propensity score–adjusted logistic and Cox proportional-hazards regression.
Results: The proportion of the patients diagnosed with takotsubo increased from 0.16% in 2005 to 2.2% in 2012 (p<0.05); 14% of these patients also had significant coronary artery disease. Cardiogenic shock developed more frequently in patients with takotsubo than NSTEMI (adjusted OR 3.08, 95% CI 1.80–5.28, p<0.001). Thirty-day mortality was 4.1% and was comparable to STEMI and NSTEMI. The long-term risk of dying in takotsubo (median follow-up 25 months) was also comparable to NSTEMI (adjusted HR 1.01, 95% CI 0.70–1.46, p=0.955) STEMI (adjusted HR 0.83, 95% CI 0.57–1.20, p=0.328).
Discussion and Conclusion: The proportion of acute coronary syndromes attributed to takotsubo syndrome in Western Sweden has increased over the last decade. The prognosis of takotsubo syndrome is poor, with similar early and late mortality as STEMI and NSTEMI.

Coronary artery disease / Acute coronary syndrome

OP-011

Manual thrombus aspiration and the improved survival of patients with unstable angina pectoris treated with percutaneous coronary intervention

Bekir Serhat Yıldız[1], Murat Bilgin[2], Mustafa Zungur[3], Yusuf İzzettin Alihanoğlu[1], İsmail Doğu Kılıç[1], İpek Buber[1], Ahmet Ergin[1], Havane Asuman Kaftan[1], Harun Evrengül[1]

[1]Pamukkale University Faculty of Medicine, Denizli
[2]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[3]Şifa University Hospital, İzmir

Introduction: This study aimed to assess how thrombus aspiration (TA) during percutaneous coronary intervention (PCI) affects in-hospital and 30-month mortality in patients with unstable angina pectoris (UAP). It also aimed to investigate this effect in relation to regional and global contractile left ventricular (LV) function and examine how TA impacts the flow of post-PCI thrombolysis in myocardial infarction (TIMI) in terms of, TIMI frame count (TFC) and myocardial blush grade (MBG).
Materials and Method: A retrospective analysis of prospectively collected data representing 169 consecutive PCI-treated UAP patients between 2010 and 2014 was conducted.
Results: TA was performed in 64 patients (46%).The number of patients with postoperative TIMI grade 3 blood flow and MBG 3 was significantly higher in the TA group (TIMI3: p=.036; MBG3: p=.031 for UAP). A significant decrease in TFC was found post aspiration in all coronary arteries in the TA group. LV ejection

fractionat 6, 12, and 24 months post-PCI was significantly higher in the TA group. During a mean follow-up period of 28.87±6.28 months, mortality rates were 12.9% in the TA group versus 6.3% in the standalone PCI group. TA was also associated with significantly less long-term mortality in UAP patients [adjusted HR: 4.61, 95% CI: 1.16-18.21, p=.029]. Over a 30-month follow-up, the extent of complications.

Discussion and Conclusion: Manual TA in the context of UAP is associated with a limited elevation in cardiac enzymes during PCI that minimises microembolisation and significantly improves both of epicardial flow and myocardial perfusion, as shown by angiographic TIMI flow grade, TFC, and MBG. The improved tissue perfusion is in turn associated with a significant improvement in regional and global LV function at 24 months. Using thrombectomy given suspicions of thrombus formation in UAP patients affords better results.

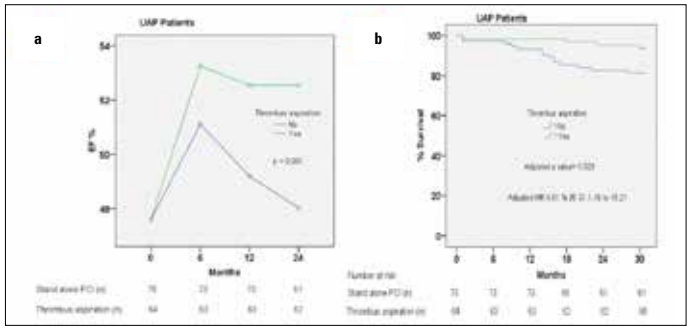


Figure 1. A:2 year LVEF,B: Kaplan-Meier curve for 30 months

Table. Characteristics and comparison of two groups

Coronary artery disease / Acute coronary syndrome

OP-012

Comparison of serum proteomic analysis in patient with acute coronary syndrome and stable coronary artery disease

Hamza Sunman[1], Mehmet Erat[1], Beycan Ayhan[2], Tolga Çimen[1], Ahmet Akyel[1], Mehmet Doğan[1], Sadık Açıkel[1], Duygu Özel Demiralp[3], Ekrem Yeter[1], Tuncay Delibaşı[1]

[1]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[2]Ankara University, Biotechnology Institute, Ankara
[3]Ankara University, Faculty of Engineering, Department of Biomedical Engineering, Ankara

Introduction: Proteomics is a new technology that allows the detection and identification of several proteins at a given time in a sample. The aim of this study was to determine serum protein differences in patients with acute coronary syndrome (ACS) and stable coronary artery disease (CAD).

Materials and Method: Serum samples from 30 patients (15 with ST elevation and 15 non-ST elevation ACS) were investigated. The control group included 15 age and gender-matched patients with stable CAD. After depletion of albumin, protein concentration of the samples were determined by the Bradford method. The protein profiles of these groups were constructed and compared via 2D gel electrophoresis and PDQuest analysis program. Protein spots were identified with Matrix-assisted laser desorption/ionization time of flight (MALDI TOF) mass spectroscopy by using Mascot Server.

Results: 76 protein spots were cut from gels and digested into their peptides using trypsin and PMF (Peptide Mass Fingerprinting) analyses were carried out in MALDI-TOF mass spectrometer. Until now among these protein spots, 12 proteins were identified by using Mascot (Alpha-1-antitrypsin, Ceruloplasmin, Alpha-1B-glycoprotein, Serotransferrin, Complement C3, Ig gamma Chain (1, 2, 3, 4), Haptoglobin, Transthyretin, Ig kappa chain C region, Apolipoprotein A-I). According to statistical analysis, complement C3 protein was significantly increased and apolipoprotein was significantly reduced in serum from unstable group when compared with stable controls (p<0.05). In addition, serotransferrin was reduced only in patients with ST elevation ACS. Protein spots were seen in the figure. 05, 06a-b, and 11 represent serotransferrin, complement C3, and apolipoprotein, sincerely.

Discussion and Conclusion: In the present study, we used a novel method to identify differences of protein expression in patients with ACS and stable CAD as a control. We found at least three proteins that have potentially important role in ACS pathogenesis. Future studies should further elucidate these association.

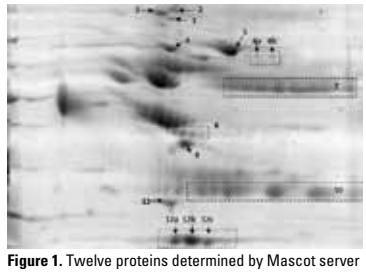


Figure 1. Twelve proteins determined by Mascot server

Coronary artery disease / Acute coronary syndrome

OP-013

Is the atrial fibrillation a risk factor of contrast induced acute kidney injury in STEMI patients?

Mehmet Balli[1], Hakan Taşolar[2], Mustafa Çetin[2]

[1]Mersin State Hospital, Mersin
[2]Adıyaman University Training and Research Hospital, Adıyaman

Introduction: Acute kidney injury (AKI) is an important issue that may occur via various etiologies such as radio-contrast agents. As a preventable and treatable disease AKI is also significant iatrogenic problem in patients with ST segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PPCI). In STEMI patients, concomitant atrial fibrillation (AF) is associated with higher in-hospital and/or follow up mortality and morbidity. Although many factors may facilitated contrast induced AKI have evaluated so far, whether AF is a potentially risk factor or not has not been evaluated clearly.

Materials and Method: In our present study, 650 consecutive STEMI patients treated with PPCI were included. STEMI was defined and treated according to current guidelines. Patients with no P wave and irregular R-R intervals on the surface electrocardiogram were defined as AF. Patients with AF both on the admission and couldn't be achieved sinus rhythm during the hospitalization defined as AF patients.

Results: Our study patients were divided into two groups based on the development of contrast induced AKI (Group 1: Patients with contrast induced AKI development; Group 2: Patients without development contrast induced AKI). Despite Age (p<0.001), diabetes mellitus (DM) (p=0.039), AF (p<0.001), Mehran risk score (p<0.001), left ventricular ejection fraction (LVEF) (p<0.001), Creatinine levels prior to PPCI (p<0.001), glomerular filtration rate (GFR) prior to PPCI (p<0.001), were different between two groups. The other parameters did not differ significantly between the groups (p>0.05 for all). In the multivariable logistic regression analysis, we also found that age (p=0.001), Mehran score (p<0.001), contrast volume (p<0.001), LVEF (p=0.034), GFR (p<0.001), creatinine level prior to PPCI (p=0.024), AF (p=0.027) and DM (p=0.001) were found to be independent predictors of contrast induced AKI in patients with STEMI undergoing PPCI.

Discussion and Conclusion: The pathogenesis and risk factors of contrast induced AKI is multifactorial and remains poorly understood. To reduce the development of contrast induced AKI, determining the individual risk factors is the most important step to protect contrast induced AKI development even baseline renal functions is normal. In addition to traditional risk factors, AF can also contribute to contrast induced AKI development in patients with STEMI who underwent PPCI.

Coronary artery disease / Acute coronary syndrome

OP-014

Red cell distribution width: a novel negative predictor of infarct-related artery patency before mechanical reperfusion for STEMI

Mehmet Kadri Akboğa, Çağrı Yayla, Fatih Şen, Uğur Canpolat, Samet Yılmaz, Kevser Gülcihan Balcı, Fırat Özcan, Dursun Aras, Sinan Aydoğdu

Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: Immediate restoration of coronary flow in an infarct-related artery (IRA) in patients with ST-segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PCI) is associated with better clinical outcomes and lower mortality. Red cell distribution width (RDW) is a recently defined indicator of cardiovasculer events and mortality in STEMI. Therefore, in this study we

aimed to investigate the relationship between RDW, as measured on admission, and IRA patency in STEMI patients undergoing primary PCI.

Materials and Method: A total of 564 patients with STEMI undergoing primary PCI were recruited in this study. According to thrombolysis in myocardial infarction (TIMI) flow grade in the IRA before PCI, the study population was divided into two groups as TIMI 0 or 1 group (occluded IRA, n=398) and TIMI 2 or 3 group (patent IRA, n=166).

Results: RDW was significantly higher in occluded IRA group (15.1±1.7 vs 13.4±1.3, p<0.001) as compared to patent IRA group. White blood cell (WBC) count, platelet count, CK-MB and troponin-I levels were also significantly higher in patients with occluded IRA group (p<0.05). Moreover, RDW was significantly and positively correlated with troponin-I (r=0.397, p<0.001) and WBC (r=0.219, p<0.001) (Figure). In multivariate regression analysis, RDW [OR: 0.483, 95% CI: 0.412-0.567, p<0.001) and WBC count [OR: 0.900, 95% CI: 0.832-0.974, p=0.009] were found as significantly and independently associated with IRA patency.

Discussion and Conclusion: Our findings suggested that on admission RDW and WBC counts are independent predictors of IRA patency in patients with STEMI. As RDW is an easily available, simple and cheap parameter, it can be used in daily practice as a novel negative predictor of IRA patency.

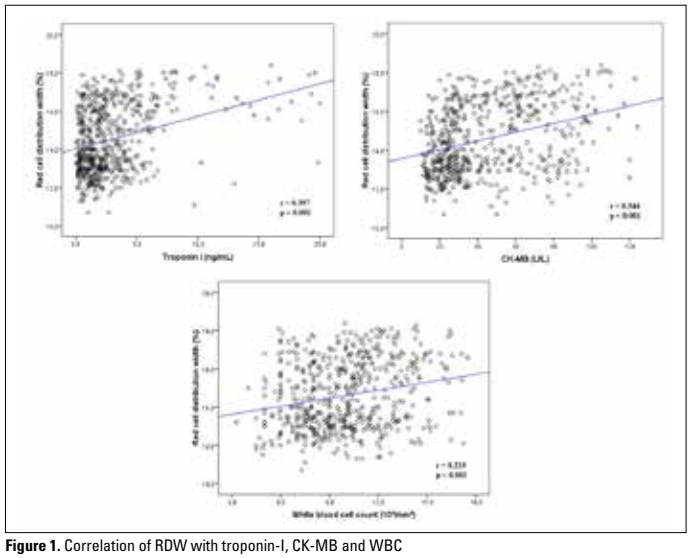


Figure 1. Correlation of RDW with troponin-I, CK-MB and WBC

Coronary artery disease / Acute coronary syndrome

OP-015

High sensitive CRP level is associated with intermediate and high syntax score in patients with acute coronary syndrome

Vedat Şimşek[1], Muhammed Karadeniz[1], Mustafa Duran[2], Ahmet Akyel[3], Mikail Yarlıoğlueş[2], Adil Hakan Öcek[2], İbrahim Etem Çelik[2], Alparslan Kılıç[2], Ahmet Arif Yalçın[4], Gökhan Ergün[2], Sani Murat[2]

[1]Kırıkkale Universiye Faculty of Medicine, Kırıkkale
[2]Ankara Training and Research Hospital, Ankara
[3]Dışkapı Yıldırım Beyazıt Educationa and Research Hospital, Ankara
[4]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul

Introduction: High sensitive C-reactive protein (hs-CRP) levels are associated with short- and long-term mortality in patients with acute coronary syndrome (ACS). We investigated whether baseline hs-CRP levels are associated with burden of coronary atherosclerosis assessed by SYNTAX score (SXScore).In this study, we aimed to investigate whether hs-CRP was associated with the SXScore in patients with ACS.

Materials and Method: We enrolled 321 patients with ACS who underwent coronary angiography. The clinical spectrum of ACS consists of STEMI (n=224, 69.8%) and NSTEMI or USAP (n=97, 30.2%], which are classified from the acute phase electrocardiography (ECG) changes and the development of myocardial necrosis. Serum hs-CRP levels were measured from blood samples taken at admission to the emergency service or catheter laboratory.Coronary angiography was performed by the Judkins technique. The severity and complexity of coronary atherosclerosis was assessed in several ways. The first was a simple classification in number of diseased vessel scoring system. The number of diseased vessels with ≥50% luminal stenosis in major coronary arteries was scored as 1 to 3 diseased vessels. In addition, angiograms were scored according to the SXScore system. All lesions causing ≥50% stenosis in a coronary artery with a diameter ≥1.5 mm were included in the SXScore calculation. For the calculation, the software on the website (http://www.syntaxscore.com) was used. The patients were divided into tertiles according to the SXScore: low SXScore (≤22), and intermediate-high SXScore (≥23). All analyses were performed using SPSS for Windows (version 18.0, SPSS, Chicago, Illinois, USA). Quantitative variables are expressed as the mean value ± SD for parametric variables, and median and minimum-maximum levels for non-parametric variables.

Results: Subjects in the intermediate-high SXScore tertile had higher serum hs-CRP levels compare to low SXScore tertile patients (7.7±3.4 mg/L versus 4.9±2.5 mg/L, p<0.001). The mean age of patients and prevalance of diabetes in the intermediate-high SXScore tertile were significantly higher than in the low SXScore tertile (63±13 versus 58±12 years p=0.001 for age, p=0.007 for diabetes). Multivariate logistic regression analysis showed that the strongest predictors of high SXScore were increased serum hs-CRP levels (OR: 1.14) together with multivessel disease (OR: 0.23), left ventricular ejection fraction (LVEF) (OR: 0.90), and troponin levels (OR: 1.12).

Discussion and Conclusion: Serum hs-CRP levels on admission in patients with ACS could predict the severity and complexity of coronary atherosclerosis together with multivessel disease, LVEF, and troponin levels. Thus, increased serum levels of hs-CRP were one of the strong predictors of high SXScore in ACS patients.

Coronary artery disease / Acute coronary syndrome

OP-016

Relation of plasma Apelin-12 level and Neutrophil/Lymphocyte ratio in patients with ST-elevated MI undergoing primary coronary intervention

Mustafa Topuz, Mustafa Gür, Mehmet Çoşgun, Ömer Şen, İlyas Makca, Sefa Okar, Murat Çaylı

Adana Numune Training and Research Hospital, Adana

Introduction: The goal of this study was to investigate the association of the initial serum apelin-12 level with neutrophil/lymphocyte (N/L) ratio in patients with ST elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention (PPCI).

Materials and Method: The association of Apelin-12 levels on admission with N/L ratio was assessed in 85 consecutive primary STEMI patients with PPCI. All patients Syntax (Sx) score and Thrombolysis In Myocardial Infarction (TIMI) flow grade was also assesed. Patients were divided into two groups according to TIMI flow grade (patients with TIMI 0-2 grade flow served as group 1 and patients with TIMI grade 3 flow served as Group 2). Blood samples for Apelin-12 and cardiac biomarkers were obtained on admission, 6 and 12 hour later.

Results: There was a significant and negative correlation between Apelin-12 levels and N/L ratio (r=0.621, p<0.001) in all study patients. N/L ratio was significantly higher in the no-reflow group (TIMI grade 0/1/2 flow, n=52) compared to that of the normal-flow group (TIMI grade 3 flow, n=33, 4.5±1.7 vs 3.1±1.8, p<0.001). In-hospital MACEs were significantly higher in patients with no reflow (15,3% vs 6%, p<0.001). The median Sx score was 21.4±9.7. In correlation analyses, serum apelin-12 level was negative, NL ratio was significantly positive correlated with patient's Sx score. (respectively, r=-0.641, p<0.001 and r=578, p=<0.001). Apelin had not a release or decrease pattern within the first 12 h after PCI and it was not correlated with the maximum troponin-I or CKMB level. In a multivariate regression model, apelin and N/L ratio remained an independent correlate of in-hospital MACEs (odds ratio [OR] 1.54, 95% confidence interval [CI] 1.34 to 1.76, p<0.001 for NL ratio and OR 1.14, 95% CI 0.98 to 1.32, p 0.043 for apelin-12).

Discussion and Conclusion: According to current study results, apelin-12 level is strongly associated with angiographic properties assessed by Sx score and TIMI flow grade score and can be used a predictor of in hospital MACE of STEMI patients as NL ratio.

Cardiac imaging / Echocardiography

OP-017

Reverse ventricular and atrial remodelling effect of laparoscopic sleeve gastrectomy

Kamil Tülüce[1], Cemal Kara[1], Nurullah Çetin[1], Caner Topaloğlu[1], Yasemin Turan Bozkaya[1], Selcen Yakar Tülüce[2]

[1]Karşıyaka State Hospital, İzmir
[2]Katip Çelebi University, Atatürk Education and Research Hospital, İzmir

Introduction: Obesity is an epidemic public health problem and associated with high cardiovascular mortality and morbidity. Although few treatment strategies are suggested to obese patients to achieve weight lost, laparoscopic sleeve gastrectomy (LSG) is a solution for patients for whom all other weight loss strategies have failed. We aimed to analyze the early effects of LSG in obese patients over left ventricular (LV) and left atrial (LA) functions using strain echocardiography.

Materials and Method: Thirty-two consecutive obese subjects without history of valvular disease, dibetes mellitus, hypertension and coronary artery disease were prospectively enrolled. In addition to standard echocardiographic evaluation, strain imaging was performed in all patients before and 1 month after LSG. LA functions were assessed using tissue Doppler strain imaging. The sample volume was placed in the superior segments of the septal and lateral LA walls. The peak systolic strain of lateral and septal LA walls was measured. Strain rate was measured in systole (S-SR), early diastole (E-SR), as well as in late diastole (A-SR). LV longitudinal global strain (LVLGS) was evaluated using 2D strain imaging.

Results: Body weight was significantly reduced, with a mean body mass index decrease from 43.95±3.75 to 38.92±3.56 kg/m² (p<0.001) 1 month after surgery. Left atrial antero-posterior diameter decreased from 35.03±3 to 32.2±3.01 mm; p<0.001); LA volume index decreased from 23.38±5.4 to 20.1±4.7mL/m² (p<0.001). Strain echocardiographic data showed a significant increase in LA lateral wall and septal wall peak systolic strain (18.5±4.7 to 22.8±5% and 19.4±5.1 to 23.6±13.6%; p<0.001 and p=0.001, respectively). Left atrial strain rate measurements showed a significant increase in lateral LA wall S-SR and septal wall S-SR (1.84±0.67 to 2.29±0.77 s-1 and 1.62±0.39 to 1.99±1.01 s-1; p=0.009 and p=0.04, respectively) a significant increase LA lateral wall and septal wall E-SR (-2.34±1.01 to -2.84±1.14 and -1.91±0.75 to -2.48±0.7 s-1; p=0.007 and <0.001; respectively) a significant increase in LA lateral wall A-SR and septal wall A-SR (-1.63±0.64 to -2.54±1.37 s-1 and -1.76±0.65 to -2.28±0.82; p=0.002 and p=0.001; respectively). Two-dimensional strain echocardiographic data revealed a significant increase in LVLGS (-14.5±3.1 to -15.9±2.7%; p<0.001).

Discussion and Conclusion: Laparoscopic sleeve gastrectomy has a significant effect in reverse LV and LA remodelling.

Cardiac imaging / Echocardiography

OP-018

Alterations of coronary microcirculation and carotid intima media thickness in patients with AA amyloidosis

Nurşen Keleş, Mustafa Çalışkan, Osman Köstek, Feyza Aksu, Mehmet Kanbay, Ali Bakan, Ahmet Selami Tekin, Kenan Demircioğlu, Yusuf Yılmaz

İstanbul Medeniyet University Göztepe Training and Research Hospital, İstanbul

Introduction: Systemic AA amyloidosis can occur as a complication of a number of chronic inflammatory disorders. An increased incidence of coronary artery disease events was noted in patients with Chronic Inflammatory Disease (CID) despite having a lower burden of traditional cardiovascular (CV) risk factors.

Carotid intima–media thickness (CIMT) is relatively easily obtainable and is strongly associated with future cardiovascular events. In the absence of epicardial coronary stenosis, coronary flow reserve (CFR) is considered to be a marker of coronary microvascular dysfunction. The relationship between chronic inflammation and atherosclerosis is well known; however, the possible connection between amyloidosis advanced CID, CFR and CIMT is presently unidentified. we aimed to investigate whether coronary microcirculation and carotid IMT were impaired in amyloidosis advanced CID patients compared to CID without amyloidosis and normal control subjects.

Materials and Method: 32 patients with biopsy-proven renal AA amyloidosis who presented to our nephrology outpatient clinic, 72 patients with non-amiloid CID and a group of healthy volunteers were included in the study. The measurements of CFR was performed by transthorasic Doppler Echocardiography. CIMT was measured with a linear probe according to standard recommendations.

Results: Patients with AA amyloidosis had higher CIMT (p<0.001) and lower CFR (p<0.001) values than patients with non-amiloid CID and healthy volunteers.

Discussion and Conclusion: We conclude that the patients with AA amyloidosis have impaired coronary microvascular circulation and have increased atherosclerotic risk compared with healthy population.

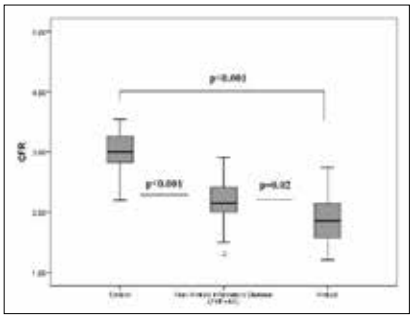


Figure 1. Comparison of the coronary flow reseve values

Cardiac imaging / Echocardiography

OP-019

Evaluation of pulmonary artery stiffness in patients with obstructive sleep apnea syndrome

İbrahim Halil Altıparmak[1], Muslihittin Emre Erkuş[1], Mustafa Polat[2], Zafer Hasan Sak[1], Funda Yalçın[1], Özgür Günebakmaz[1], Yusuf Sezen[1], Zekeriya Kaya[1], Recep Demirbağ[1]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Gaziantep Sehitkamil State Hospital, Gaziantep

Introduction: Obstructive sleep apnea syndrome (OSAS) is a well-known clinical condition characterized by increased upper airway resistance, intermittent apneic and hypoxic events. The purpose of this study was to investigate whether OSAS has any effect on pulmonary artery stiffness (PAS) derived from echocardiographic calculation.

Materials and Method: Fifty-two patients with newly diagnosed OSAS and forty-two subjects without OSAS matched by age, sex were enrolled in the study. OSAS was categorized according to apnea hypopnea index (AHI, event/hour) as follows: normal (AHI15). All participants were evaluated by echocardiography to determine PAS and right ventricle functions. PAS was calculated throughout pulmonary artery flow by the formula; PAS (kHz/s) =maximal frequency shift/acceleration time.

Results: Demographic and clinical parameters were similar in both groups. PAS significantly increased in OSAS compared with the control group (26.9±6.1 vs 18.0±3.5, p<0.001). Additionally, PAS in severe and moderate OSAS was considerably high compared with that in mild OSAS and control group (p<0.001) (figure). Right ventricular myocardial performance index (MPI) and mean pulmonary artery pressures (mPAP, mmHg) were considerably higher in OSAS group than control group (0.33±0.07 vs 0.19±0.05 and 34.3±7.4 vs 19.2±7.3, p<0.001). Tricuspid E / A, right ventricle tissue Doppler E'/A', and right ventricular ejection time (RVET, ms) decreased in OSAS group compared with control group (0.92±0.21 vs 1.32±0.22, 0.73±0.16 vs 0.92±0.21, and 259±32 vs 301±34, p<0.001). There was a significantly positive correlation between PAS and AHI, mPAP, and MPI (r=0.458, r=0.830, and r=0.778, respectively, p<0.001), and a significantly negative correlation between PAS and tricuspid E/A, E'/A', and RVET (r=-0.621, r=-0.341, and r=-0.579, respectively, p<0.001). Linear regression analyses showed that PAS was an independent factor for only mPAP (ß=0.595, p=0.034).

Discussion and Conclusion: PAS in OSAS patients is strongly associated with AHI and right ventricular systolic and diastolic functions, and also an independent predictor for increased mPAP.

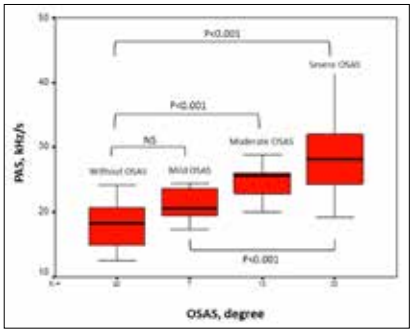


Figure 1. Diagram showing changes of PAS between subgroups

Cardiac imaging / Echocardiography

OP-020

Association of fluid overload with cardiac structure and function in patients have chronic kidney dissease but not yet dialysis

Akar Yılmaz[1], Banu Yılmaz[2], Selçuk Küçükseymen[3], Nihat Pekel[1], Mehmet Emre Özpelit[1]

[1]İzmir University Faculty of Medicine, İzmir
[2]Tepecik Training and Research Hospital, İzmir
[3]Antalya Education and Research Hospital, Antalya

Introduction: Fluid overload and cardiac dysfunction is well established in hemodialysis patients. But in predialysis chronic kidney dişselse, the association of fluid overload and cardiac dysfunction is relatively unknown. In this study we aimed to investigate the relationship between fluid overload and cardiac dysfunction in predialysis chronic kidney disease patients.

Materials and Method: We enroled 107 consecutive patients in our study. Fluid overload was assessed via body composition monitor.Patients were dichotomized according to the fluid overload status. The patients with FO <1.1 L were determined as normovolemic and those with FO ≥1.1 L as hypervolemic according to the previously reported physiologic model. Left atrial volume index (LAVI), left ventricular enddiastolic-endsystolic index(LVEDVI, LVESVI), E/e', LVMI and global longitudinal left ventricular left ventricular strain (GLS-%) were evaluated in each patient as markers of cardiac dysfunction. Arterial stiffness was also assessed by Mobil-O-Graph® 24 hour pulse wave analysis monitor and pWV values were recorded.

Results: 55 patients were normovolemic and 52 patients were hypervolemic. LAVI, LVMI, LDEDVI, LVEDSVI, E/e' were increased in hypervolemic patients. Also in hypervolemic patiens pulse wave velocity was increased and GLS was decreased. Multivariate analysis showed that FO was independetly associated with GLS which is the most specific echo-parameter for left ventricular dysfunction.

Discussion and Conclusion: FO was independently associated with cardiac dysfunction in patients with chronic kidney dissease not ongoing dialysis. Effective treatment of hypervolemia may be important in these patients to avoid further cardiac damage.

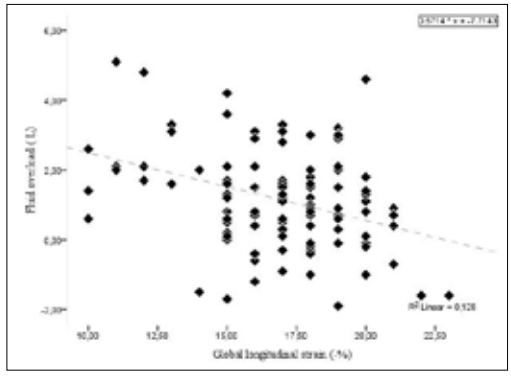


Figure 1. GLS and Fluid overload relation

Cardiac imaging / Echocardiography

OP-021

Real time three dimensional left ventricular contraction in patients with diastolic dysfunction

Gamze Babur Güler[1], Suzan Hatipoğlu Akpınar[2], Ruken Bengi Bakal[3], Gökhan Kahveci[3], Ekrem Güler[1], Özgür Kaya[4], Tuba Unkun[3], Cihangir Kaymaz[3], Nihal Özdemir[3]

[1]İstanbul Medipol University, İstanbul
[2]Private Maltepe Ersoy Hospital, İstanbul
[3]Kartal Kosuyolu Training And Research Hospital, İstanbul
[4]American University of Sharjah, United Arab Emirates

Introduction: Aims: Left ventricular (LV) alterations in LV myocardial function have been reported previously in patients with diastolic dysfunction (DD). Recent advances in real-time 3-dimensional echocardiography (3DE) enable the measurement of a set of hemodynamic parameters previously difficult to obtain with standard 2-dimensional echocardiography (2DE). We aimed to evaluate global 3DE LV contraction in patients with increasing level of DD and preserved ejection fraction (EF).

Materials and Method: 65 patients (average age 56±6 years; 31 female and 34 male) with normal EF (>50%) referred to echocardiographic examination for the evaluation of DD were included. In addition to measuring conventional echocardiographic parameters, they were also evaluated with 3DE. End diastolic volume, end systolic volume, EF, corrected SD of time to minimal systolic volume for 16 segments (Tmsv 16-SD%), and it's dispersion (Tmsv 16-Dif%), average excursion of the segments and standard deviation of segmental motion (excursion-SD) were recorded.

Results: When we tested the differences among groups, our results showed that coronary artery disease, left atrial volume, septum, posterior wall, E, A, E/A, deceleration time, E' septum, E' lateral and excursion-SD were significantly different among three stages of DD (normal, Grade 1 and Grade 2). An ordered logistic regression analysis revealed that, excursion-SD (p<0.001) and septum (p<0.001) measurements were statistically significant for predicting DD grade.

Discussion and Conclusion: In our patient population with increasing DD grade decline in excursion-SD values were observed. In other words segmental difference between the amount of myocardial excursion was reduced. We think that this interesting finding is a consequence of decreased apical twisting with diastolic dysfunction and may be used to detect early stages of altered LV function.

Cardiac imaging / Echocardiography

OP-022

Discrimination of nonobstructive hypertrophic cardiomyopathy from secondary left ventricular hypertrophy by speckle tracking echocardiography

Pelin Karaca Özer[1], Yelda Tayyarecı[2], Adem Atıcı[3], Mehmet Kocaağa[4], İmran Önür[3], Ali Elitok[3], Zehra Buğra[3]

[1]Kastamonu Dr. Münif İslamoğlu State Hospital, Kastamonu
[2]Liv Hospital Ulus, İstanbul
[3]İstanbul University, İstanbul Medical Faculty, İstanbul
[4]Yalova State Hospital, Yalova

Introduction: Distinguishing the left ventricular hypertrophy (LVH) of hypertrophic cardiomyopathy (HCM), from the secondary LVH of hypertensive heart disease (HHD) and physiologic hypertrophy of highly trained competitive athletes can be challenging when septal wall thickness falls within a "gray zone" between 12 and 16 mm. It was hypothesized that 2-dimensional (2D) speckle-tracking strain echocardiography (STE) could differentiate the hearts of patients with HCM from those of athletes and patients with HHD with normal ejection fraction and similar wall thicknesses.
Materials and Method: 20 untrained patients with non-obstructive HCM were compared with 23 athletes free of cardiovascular disease and 25 patients with HHD, matched for left ventricular (LV) wall thickness (12 to 16 mm), age and gender. All subjects underwent standard transthoracic echocardiography at rest and 2D speckle tracking strain echocardiography.
Results: Global longitudinal strain (GLS) was significantly reduced in patients with HCM (-12.8±2.9%) when compared with athlete's heart (-15.5x±2.1%; p<0.008). In general, there was no significant difference between the strain values of the HCM and the HHD group, but in some of the segments, the strain values of the HHD group (-14.7±3.1%; p<0.075) were significantly higher than those in the HCM. Hypertrophy of HCM is often associated with a similar peak E, peak A, E/A ratio but lower peak E' than the athletes and HHD patients (5.2±1.4 vs. 10.7±1.5, p<0.001 and vs. 6.8±2.4, p<0.026). The LV cavity (end-diastolic and end-systolic volumes) were substantially increased in athletes compared with HCM and HHD patients.
Discussion and Conclusion: Two-dimensional strain is a new simple and rapid method to measure GLS. This technique could offer a unique approach to quantify global as well as regional systolic dysfunction, and might be used as a new additional tool for the differentiation LVH of HCM.

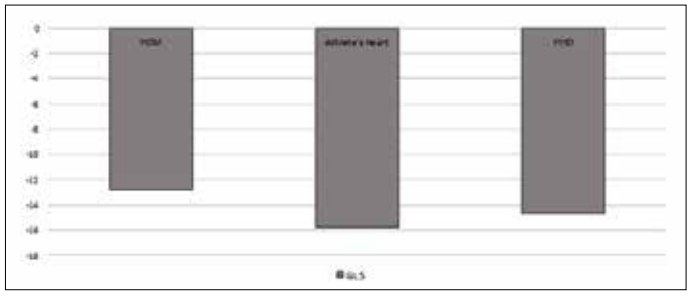


Figure 1. GLS was significantly reduced in patients with HC

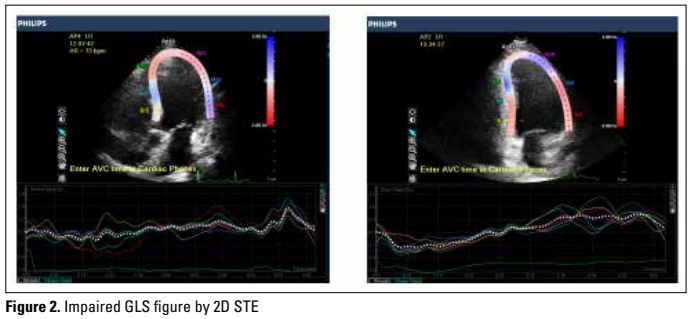


Figure 2. Impaired GLS figure by 2D STE

Cardiac imaging / Echocardiography

OP-023

Assessment of the elasticity properties of the ascending aorta and epicardial adipose tissue in patients with ocular pseudoexfoliation

Mustafa Topuz[1], Tevfik Oğurel[2], Mehmet Çoşgun[1], Osman Kuloğlu[1], Armağan Acele[1], Murat Çaylı[1]

[1]Adana Numune Training and Research Hospital, Adana
[2]Kırıkkale Universiye Faculty of Medicine, Kırıkkale

Introduction: Pseudoexfoliation (PEX) material is an abnormal production and accumulation of a fibrillary extracellular material in ocular and extraoccular tissues with unknown etiology. The aim of this study is to evaluate both the aortic elastic properties and Epicardial Adipose Tissue (EAT) thickness as a markers of subclinical atherosclerosis in patients with occular PEX patients.
Materials and Method: Fourty-seven patients with occular PEX material (mean age: 69±7 years, 26 men) and 41 healthy individuals (mean age: 68±5 years, 22 men) were included. Patients with history of smoking, diabetes mellitus, cerebrovascular and cardiovascular diseases, arterial hypertension were excluded from study and all patients were underwent a complete TTE examination.
Results: The groups were comparable according to the baseline characteristics except mean BNP values (p=0,007) and EAT thickness (p=0.042). Aortic distensibility was significantly lower (p=0.027) and Aortic stiffness index was significantly higher (p=0.008) in PEX group than control. In the correlation analysis, BNP value was positive correlated with aortic stifness index and EAT thickness (respectively, r=0.439, p<0.001 and r=0.235, p=0.027) and it was negative correlated with aortic distensibility (r=-255 p=0.017).
Discussion and Conclusion: Presence of ocular PEX material is associated with both the impaired aortic elastic properties and a higher EAT thickness. Our results could help practitioners to stratify the ocular PEX patients who have no signs and symptoms of ischaemia in cardiovascular risk.

Table 1. The baseline characteristics of study patients

	PEXs Group (n=47)	Control Group (n=41)	P value
Age, years	69±7	68±5	0,331
Gender ,female/male,%	46/54	47/53	0,916
Ejection Ratio	0,64±0,38	1,07±0,47	0,015
EAT thickness (cm)	0,55 ± 0,12	0,39 ± 0,11	0,042
BNP (ng/dL)	184,2±144,18	110,5±98,44	0,007
Hs CRP (mg/dL)	0,3±0,06	0,3±0,07	0,951
Aortic stiffness index	7,1±3,54	5,2±3,18	0,008
Aortic distensibility	2,6 ±2,44	4,8±3,31	0,027

Cardiac imaging / Echocardiography

OP-024

Effect of vitamin D deficiency and supplementation on myocardial deformation parameters and epicardial fat thickness in patients free of cardiovascular risk

Murat Sünbül[1], Mehmet Bozbay[1], Ceyhun Mammadov[1], Altuğ Çinçin[1], Halil Ataş[1], Ekmel Burak Özşenel[2], İbrahim Sarı[1], Yelda Başaran[1]

[1]Marmara University Faculty of Medicine, İstanbul
[2]Şişli Etfal Training and Research Hospital, İstanbul

Introduction: The aim of the study is to evaluate the effect of vitamin D deficiency and supplementation on myocardial deformation parameters and epicardial fat thickness (EFT) in patients free of cardiovascular risk.
Materials and Method: The study population consisted of 50 patients with vitamin D deficiency who were free of cardiovascular risk (mean age: 42.6±8.9 years, 37 female). Patients with vitamin D deficiency were treated with oral administration of 50,000 IU per week of vitamin D3 for eight weeks followed by daily maintenance doses of 2,000 IU for four weeks. Myocardial deformation parameters and EFT were evaluated before and after treatment of those patients.
Results: Vitamin D levels significantly increased after treatment (30.5±10.5 nmol/liter vs. 9.9±5.3 nmol/liter, p<0.001). Conventional echocardiographic parameters were normal range. Baseline EFT was significantly higher than post-treatment measurements (35.2±8.0 mm vs. 27.5±5.6 mm, p<0.001). Post-treatment left ventricular global longitudinal strain (LV-GLS) was also significantly higher than baseline LV-GLS (20.8±2.4 vs. 22.7±2.6, p<0.001). Baseline vitamin D levels correlated with baseline EFT and LV-GLS (r=-0.434, p=0.002 and r=0.515, p<0.001, respectively). Post-treatment vitamin D levels also correlated with post-treatment EFT and LV-GLS (r=-0.406, p=0.003 and r=0.384, p=0.006, respectively). Among vitamin D, EFT, body mass index, and age, which were included in the linear regression model, baseline vitamin D level was shown to significantly and independently affect baseline LV-GLS (r2 of the model = 0.308; p=0.002). Patients were divided into two groups according to baseline LV-GLS levels as impaired and normal LV-GLS. We used the LV-GLS value of 18.6±0.1% as a cut-off point to indicate patients with impaired LV-GLS. While 13 patients had impaired baseline LV-GLS levels, 37 patients had normal LV-GLS levels (17.5±0.8% vs. 21.9±1.6%, p<0.001). Patients with impaired LV-GLS had significantly lower Vitamin D levels than patients with normal LV-GLS (6.6±3.8 nmol/liter vs. 11.0±5.3 nmol/liter, p=0.005). Logistic regression analysis revealed that only baseline vitamin D level was a predictor of an impaired baseline LV-GLS (p=0.010).
Discussion and Conclusion: Vitamin D supplementation has a beneficial effect on myocardial deformation parameters and EFT. Vitamin D level is correlated with LV-GLS and EFT. Baseline vitamin D level also significantly and independently affects the baseline LV-GLS. In addition, baseline vitamin D level is a predictor of impaired baseline LV-GLS in patients with vitamin D deficiency.

Cardiac imaging / Echocardiography

OP-025

Evaluation of aortic flow propagation velocity it's relationship carotid intima-media thickness in patients with familial mediterranean fever

Kayıhan Karaman[1], Arif Arısoy[1], Ayşegül Altunkaş[1], Ahmet Demirtaş[1], Metin Karayakalı[1], Fatih Altunkaş[1], Oğuzhan Ekrem Turan[2], Ertuğrul Erken[1], Ataç Çelik[1]

[1]Gaziosmanpaşa University Faculty of Medicine, Tokat
[2]Aydın State Hospital, Aydın

Introduction: Familial Mediterranean fever (FMF), which is the autosomal recessive disorder, is characterized by localized and systemic inflammation that affects serous cavities such as peritoneum, pleura, and pericardium. Sustained inflammation leading to endothelial dysfunction and subclinical atherosclerosis. Aortic flow propagation velocity (APV) and carotid intima-media thickness (CIMT), which noninvasive technics used for measuring the degree of subclinical atherosclerosis, is a marker of arterial stiffness. Several

researchers have shown the association between APV and cardiovascular events. In this study, we aimed to investigate the association of CIMT with APV in diagnosed FMF individuals.
Materials and Method: Carotid intima-media thickness and APV were measured in 39 patients (27 female; mean age 30.5±4.9 years) with FMF and 24 control group (14 female; mean age 32.4±6.7 years). Individuals with hypertension, diabetes mellitus, and cardiovascular disease were excluded from this study.
Results: Compared to control subjects CIMT (0.53±0.07 vs. 0.44±0.06 mm, p<0.001) values were significantly higher, while APV (67.5±15.7 vs. 112.1±20.0 cm/sec, p<0.001) values were significantly lower in FMF patients (Table 1). There were significant negative correlations between APV and CIMT (r=-0.400, p<0.001) (Fig-1).
Discussion and Conclusion: In the present study, we found that APV values were statistically significant lower in the FMF patients compared with the control group. We think that the FMF patients should be followed up closely owing to increased subclinical atherosclerosis risk.

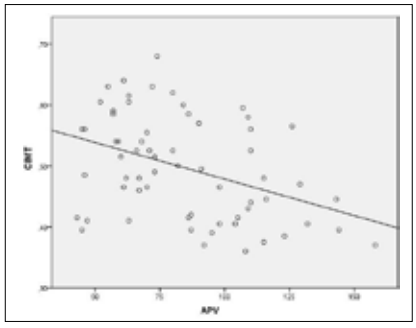


Figure 1. Correlation between APV and CIMT

Table 1. Study parameters between the groups

	FMF(-)	FMF(+)	P value
	n=24	n=39	
Age, years	32.4±6.7	30.5±4.9	0.190
Sex, Female(%)	14(58.3)	27(69.2)	0.378
Systolic BP, mmHg	110±10	111±10	0.883
Diastolic BP, mmHg	72±8	74±8	0.388
LVEF, (%)	56.8±4.5	58.4±6.2	0.279
CIMT (mm)	0.44±0.06	0.53±0.07	<0.001
APV(cm/sec)	112.1±20.0	67.5±15.7	<0.001

BP=blood pressure, LVEDD=left ventricular (LV) end systolic diameter, LVEDD=LV end diastolic diameter, LVEF=LV ejection fraction, APV = aortic flow velocity propagation, CIMT =carotid intima-media thickness

Cardiac imaging / Echocardiography

OP-026

Left atrial remodelling in patients with premature ventricular contractions

Selen Yurdakul[1], Gültekin Ercan[1], İlker Tekkeşin[2], Şükrü Taylan Şahin[1], Betül Cengiz[1], Gamze Çelik[3], Sabri Demircan[1], Saide Aytekin[3]

[1]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul
[2]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[3]Florence Nightingale Hospital, İstanbul

Introduction: Premature ventricular contractions (PVC) may cause subclinical changes in left atrial (LA) structure and function. We aimed to explore LA remodelling, using real time three dimensional (3D) volume analysis and speckle tracking echocardiography (STE) in patients with PVC and preserved left ventricular (LV) systolic function.
Materials and Method: We recruited 25 patients with PVC (44.70±5.35 years and 56% male) and 20, age and sex matched healthy controls. LA volumes during reservoir (RV), conduit (CV) and contractile phases (AV) were measured. LA global systolic strain (S), early diastolic (ESRd) and late diastolic strain rate (LSRd) were calculated.
Results: Conventional echocardiographic parameters (LV dimensions, LV ejection fraction) were similar between the groups. LA diameter was significantly increased in patients (4.22±0.15 cm to 3.62± 0.16 cm, p=0.0001). LA RV (42±3.30 to 30.9±4.67; p=0,005), CV (21±1.12 to 15.50±2.78; p=0,001), AV (11.75±1.61 to 7.80±0.05; p=0,005) were increased in patients with PVC. LA S value (9.54±0.65% to 33± 2.71%, p=0,0001), LA ESRd (1.40±0.39 s^{-1} to 2.22±0.64 s^{-1}; p=0,002) and LA LSRd (2.2±0.24 s^{-1} to 3.1±0.47 s^{-1}; p=0,003) were impaired in the study group.
Discussion and Conclusion: Frequent PVC is associated with LA anatomical and functional remodelling in patients with normal LV EF. Real time 3D volume and STE analysis are adjunctive methods to determine LA dysfunction in patients with frequent PVC.

Cardiac imaging / Echocardiography

OP-027

Echocardiographic detection of the proximal and distal type of right bundle branch block and its relation with coronary artery disease

Hasan Değirmenci[1], Aydın Akyüz[2], Şeref Alpsoy[2], Dursun Çayan Akkoyun[2], Niyazi Güler[2]

[1]Tekirdağ State Hospital, Tekirdağ
[2]Namık Kemal University Faculty of Medicine, Tekirdağ

Introduction: In the case of accompanying cardiovascular diseases, Right bundle branch block (RBBB) is an independent predictor of all known mortality. Detection of the RBBB type as proximal, distal or diffuse via echocardiographic method had been reported in the literature until now. Whereas, there is no study about prediction of coronary artery disease (CAD) finding by distal RBBB presence; found in the literature, interestingly. Therefore in this study, we aimed to search for the presence of CAD in the cases with distal RBBB.
Materials and Method: Our study was consisted of 70 cases with right bundle block and 25 cases without right bundle block, as a control group. After reporting angiographic data of cases, we evaluated coronary artery disease in 35 cases with right bundle block, the rest of cases without CAD was 60 in number; as a result we had the total study group consisting of 95 cases. In comparison with Doppler waves according to superficial ECG: duration from the beginning of QRS to closure of mitral valve (Q-MC); duration from the beginning of QRS to closure of tricuspid valve (Q-TC); duration from the beginning of QRS to opening of pulmonary valve (Q-PO); the difference between the duration from the beginning of QRS to closure of mitral valve and duration from the beginning of QRS to closure of tricuspid valve (MC-TC); the difference between the duration from the beginning of QRS to closure of tricuspid valve and duration from the beginning of QRS to opening of pulmonary valve (TC-PO); the difference between the duration from the beginning of QRS to closure of mitral valve and duration from the beginning of QRS to opening of pulmonary valve (MC-PO) were measured.
Results: While MC-TC time were longer in proximal type blocks than distal type blocks (39±13 msn, 35±13 msn; respectively), (p<0.05); TC-PO time were longer in distal type blocks than proximal type blocks (73±14msn, 47±12msn; respectively), (p<0.05). The ratios of TC-PO/MC-TC were higher in distal type (2.3±0.7) and diffuse type blocks (2.2±0.8), than in proximal type blocks (1.25±0.8) and controls (1.15±0.6), (p<0.05, for all). Age [β±SE: 0.07±0.02, 95% CI: 1.12 (1.02-1.18), p=0.004], gender [β±SE: 1.5±0.68, 95% CI: 4.62 (1.2-17.6), p=0.024], TC-PO [β±SE: 0.28±0.15, 95% CI: 1.03 (1.01-1.06), p=0.027] and TC-PO/MC-PO ratio [β±SE: 2.02±1.5, 95% CI: 1.81 (1.1-2.41), p=0.016] were found as the predictive variables for CAD presence, according to multisided logistic analysis. For the TC-PO/MC-P values of equal and higher than 1.78, the spesifity was found as 78.3 and sensitivity was 65.7, in the prediction of CAD presence.
Discussion and Conclusion: Longer TC-PO/MC-PO ratio (>1.78) and TC-PO (>54 msn) marks distal type RBBB, in this case presence of CAD should be kept in mind.

Cardiac imaging / Echocardiography

OP-028

Correlation of right ventricular dysfunction on acute pulmonary embolism with pulmoner arter computed tomography obstruction index rat

Hasan Yücel[1], Ali Zorlu[1], Kenan Varol[1], Hakkı Kaya[1], Selma Yücel[2], Cesur Gümüş[1], Mehmet Birhan Yilmaz[1]

[1]Cumhuriyet University, Faculty of Medicine, Sivas
[2]Sivas Numune Hospital, Sivas

Introduction: The aim of this study is to determine the Pulmonary Artery Computed Tomography Obstruction Index Ratio (PACTOIR) on patients who have been diagnosed with acute pulmonary embolism (APE) with multi-slice computed tomography (MSCT) and to research the predetermination efficiency of right ventricular dysfunction (RVD) compared with echocardiography (ECHO).
Materials and Method: One hundred patients (50 males, 50 females), who had ECHO findings and were diagnosed with APE, were subsequently examined in this study. Patients with previous heart failure, neo-plastic diseases, and chronic PE were excluded from the study. Patients who had RVD on ECHO, tricuspid regurgitation, and pulmonary hypertension parameters that were completely positive were accepted to have RVD.
Results: RVD was identified in 52 patients (52%) and not identified in 48 patients (48%) on echocardiography. The PACTOIR value for patients with RVD were evaluated to be significantly higher than those without RVD (41±17% vs 20±12%, p<0.001). As a result of the ROC analysis, the PACTOIR cut-off value was 37.5%, the sensitivity value was 67.3%, and specificity value was 93.7% (AUC: 0.839, 95% CI: 0.752-0.905). We determined that the patients with RVD and PACTOIR values over 37.5% can be recognized with a 92.1% positive predictive value.
Discussion and Conclusion: Our conclusions indicated that the PACTOIR rate in RVD diagnosis in patients with APE can recognize the patients with and without RVD.

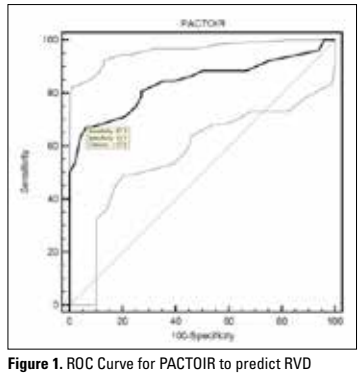


Figure 1. ROC Curve for PACTOIR to predict RVD

Nuclear cardiology

OP-029

Can ischemia modified albumin help in differentiating myocardial perfusion scintigraphy results?

Hüseyin Ede[1], Barış Yaylak[2], Süleyman Akkaya[2], Cegerğun Polat[3], Seyhan Karaçavuş[1], Ayşe Yeşim Göçmen[1], Ali Rıza Erbay[1]

[1]Bozok University, Faculty of Medicine, Yozgat
[2]Diyarbakır Training and Research Hospital, Diyarbakır
[3]Memorial Diyarbakır Hospital, Diyarbakır

Introduction: Myocardial perfusion scintigraphy (MPS) is a frequently used diagnostic tool with quite well sensitivity and specificity of single photon emission computed tomography (SPECT) MPS to detect signifi-

cant coronary lesion. However a false negative result can be yielded in the SPECT MPS due to balanced multiple artery involvement. Equivocal results due to attenuation artifacts, patient positional movement during the test, or uncorrectly applied technical analyses also limit accuracy of MPS. Ischemia modified albümin (IMA), is an albumin which has reduced binding capacity for metal ions in N-terminus region in response to coronary ischemia. This conversion takes place within minutes upon ischemia and IMA turn to normal albumin 6-12 hours. The aim of this study was to examine the role of serum IMA in evaluation of MPS results.

Materials and Method: 62 consecutive subjects performed both SPECT MPS using 99mTc-sestamibi and transthoracic echocardiography were enrolled prospectively. Age, gender, height, weight, presence of cardiovascular risk factors were obtained. Exercise treadmill test (ETT) with modified Bruce protocol was used to induce coronary ischemia during MPS. While performing MPS, blood samples for serum IMA, BNP and troponin levels were drawn three times at pre-exercise, at the peak of ETT, and 6 hours following ETT respectively. The patients were classified into three groups in respect to MPS results (normal, equivocal and ischemia).

Results: Sixty two patients (23 with normal, 20 with equivocal, 19 with ischemia on MPS) were included The groups were statistically similar in respect to age, gender, cardiovascular risk factors, and resting blood pressure measurements (Table 1). LVEF, LA diameter and TDI Em/Am ratio of the groups were similar (p=0.061, 0.70, and 0.364 accordingly). Pre-exercise, peak-exercise and postexercise BNP and troponin I values were similar across the groups (p>0.05 for all comparisons). Serum IMA values for preexercise and peak-exercise were similar among all groups (p=0.706 and 0.904). Post-exercise IMA value of the normal and equivocal groups were similar (p=0.733 z=-0.341) while that of the ischemia group was significantly higher than both normal group (p<0.001 z=-4.728) and equivocal group (p<0.001 z=-4.596). ΔIMA (the difference between post-exercise IMA and pre-exercise IMA) leves of ischemia group was significantly higher from both normal and equivocal groups (p<0.001).

Discussion and Conclusion: Serum IMA was found to be increasing significantly in case of ischemia on MPS. Subjects with normal and equivocal MPS had similar pattern during the test. It may be used in differentitaion of equivocal results from false positive results.

Coronary artery disease / Acute coronary syndrome

OP-030

In hospital and long term results of primary anjioplasty and medical therapy in nonagenarian patients with acute myocardial infarction

Müslüm Şahin[1], Lütfi Öcal[1], Ali Kemal Kalkan[2], Alev Kılıçgedik[1], Rezzan Deniz Acar[1], Mehmet Emin Kalkan[1], Burak Teymen[3], Uğur Arslantaş[1], Cevat Kırma[1]

[1]Kartal Kosuyolu Education and Research Hospital, İstanbul
[2]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[3]Emsey Hospital, İstanbul

Introduction: Nowadays, in acute ST elevation myocardial infarction (STEMI) accepted treatment form is percutaneous coronary intervention. But there are limited data of the optimal treatment strategy for acute STEMI in the nonagenarian (≥90 years old) patients. Our aim is to evaluate short and long results of primary percutaneous intervention or medical therapy(with anti-ischemic, antiplatelet and anticoagulant therapy clinical follow-up) in patients ≥90 years old with STEMI.

Materials and Method: The study included 73 patients ≥90 years old with acute STEMI who presented within 12 hours after symptoms onset between 2005-2014. The patients examined as retrospectively. The patients were divided into two groups: primary percutaneous group (PPCI) (n=42) and non-primary percutaneous (medical) group (non-PPCI) (n=31). In hospital events (death, recurrent myocardial infarction, stent thrombosis, cerebrovascular accident, acute renal failure development, arrhythmia) and long term results analyzed subsequently.

Results: Mean age was 92.4±3.1 (90-106). 19 patients were male and 54 were female. Patients were followed at 26.5±20.1 months. Demographic data were similar between groups (Table 1). 35 (47.9%) patients were admitted with anterior myocardial infarction. 41.9% of patients were killip class 3-4 in the medical group; 42.8% in PCI group (p=1). Left ventricular ejection fraction and presence of severe valve disease was similar in both groups (respectively, p=0.789; p=0.191). Anti-ischemic anti-coagulant and anti-aggregating drugs were used similar rate in both groups. Glycoprotein IIb / IIIa were used in1 patient in the medical group, 4 patients in the PCI group. 8 patients underwent a blood transfusion (3 patients in the medical group, 5 patients in the PCI group). but life-threatening bleeding was not observed in either group. Recurrent myocardial infarction during hospitalization was not observed in both groups. In-hospital mortality, cerebrovascular events and acute renal failure rate were similar between group (respectively p=0.797 and p=1, p=0.288). The arrhythmia was significantly greater in the PCI group (0; 21.4%, p=0.009). Long term myocardial infarction was more in the PCI group but was not statistically significant (respectively 3.2%; 11.9%, p=0.382). long term mortality was significantly lower in the PCI group (respectively 40.9%; 12.9%, p=0.02) (Table 2).

Discussion and Conclusion: In nonagenerian patients, mortality is very high in both groups. Complications such as acute renal failure and major bleeding are not higher in PCI group. Although; in-hospital events were similar, the long-term mortality was lower in PPCI group.

Coronary artery disease / Acute coronary syndrome

OP-031

Long-term follow- up of patients who developed contrast-induced acute kidney injury in patients with acute coronary syndrome

Şükrü Arslan, Okay Abacı, Cüneyt Koças, Betül B. Koças, Gökhan Çetinkal, Yalçın Dalgıç, Osman Şükrü Karaca, Ahmet Yıldız, Said Mesut Doğan

İstanbul University Institute of Cardiology, İstanbul

Introduction: Patients with acute coronary syndrome (ACS) have a 3-fold higher risk of developing contrast-induced acute kidney injury (CI-AKI). The association of contrast-induced acute kidney injury (CI-AKI) on long-term prognosis in ACS patients has not been fully reported. The aim of our study was to evaluate the predictors of CI-AKI and long-term prognosis who developed CI-AKI in patients with ACS.

Materials and Method: 1200 ACS patients underwent coronary angiography and/or percutaneous coronary interventions (PCI) were analyzed. Patients with high risk ACS (requiring urgent coronary angiography and cardiogenic shock) and those who had advanced left ventricle dysfunction, acute renal failure or end-stage renal failure requiring dialysis were excluded. A total of 1083 ACS patients were enrolled. CI-AKI was defined as an increase of at least 0.5 mg/dL and/or an increase of at least 25% of serum creatinine levels within 48-72 hours after the procedure. Primary endpoint was defined as all-cause mortality, MI and cerebrovascular event (CVE) at 1-year follow-up.

Results: Results are displayed in table 1 and table 2.

Discussion and Conclusion: Our study demonstrated that risk of CI-AKI development was more frequently seen in patients with ACS. Also, patients who developed CI-AKI had worse prognosis at long- term follow-up.

Table 1. Characteristics of patients

	CI-AKI (+) n=178	CI-AKI (-) n=905	p value
Age, years	62.2±12.5	58.9±11.8	**0.001**
Men (%)	72.5	79.5	**0.037**
Hypertension (%)	57.9	47.8	**0.014**
Diabetes Mellitus (%)	42.7	30.9	**0.002**
Ejection fraction (%)	46.7±10.3	49.4±8.7	**0.002**
eGFR (ml/min/1.73 m²)	91.1±35.3	86.8±24.4	0.059
Contrast volume, ml	246.3	246.1	0.600
Mehran risk score	7.6±4.6	5.9±3.7	**<0.001**

Table 2. Adverse clinical events

	CI-AKI (+) N=178	CI-AKI (-) N=905	p value
Death (%)	17.4	5.7	**<0.001**
MI (%)	12.2	12.7	0.856
CVA (%)	1.7	0.3	**0.024**

Coronary artery disease / Acute coronary syndrome

OP-032

Association of red blood cell distribution width levels with severity of coronary artery disease in patients with NSTEMI

Ömer Şahin[1], Mahmut Akpek[1], Göktuğ Savaş[2], Ahmet Oğuz Baktır[1], Bahadır Şarlı[1], Hüseyin Arınç[1], Serhat Karadavut[3]

[1]Kayseri Training and Research Hospital, Kayseri
[2]Erciyes University Faculty of Medicine, Kayseri
[3]Develi Hatice Muhammer Kocatürk State Hospital, Kayseri

Introduction: The aim of this study was to evaluate the association of the levels of red blood cell width (RDW) with severity of atherosclerosis and to determine whether or not the RDW level on admission is an independent predictor of all-cause mortality in patients with non ST elevation myocardial infarction (NSTEMI).

Materials and Method: Three hundred and thirty five (335) consecutive patients with NSTEMI were enrolled in this study. The patients were divided into high: 105 and low syntax: 230 groups. The high syntax group was defined as those with a value in the third tertile (SXscore ≥12), while the low syntax group as those with a value in the lower 2 tertiles (SXscore <12). The high RDW group (n=152) was defined as RDW >14.25%, and low RDW group (n=183) as RDW ≤14.25 %. All cause mortality was followed up to 38 months.

Results: The mean follow-up period was 18±11 months. The RDW levels of patients were significantly higher in the high syntax group than low syntax group (15.2±1.8 vs. 14.2±1.2, p<0.001). There was a significant correlation between RDW levels and syntax score (r=0.460, p<0.001). Also, there was a significant correlation between RDW levels and High sensitive-C-reactive protein (r=0.180, p=0.001). All-cause mortality rate was not significantly different between the high RDW group and the low RDW group (Long-rank, p=0.621).

Discussion and Conclusion: The RDW levels were independently associated with high Syntax score, but, were not associated with long-term mortality in NSTEMI patients.

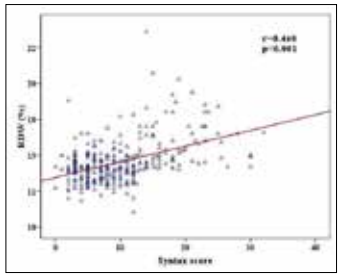


Figure 1. Correlation between syntax score and RDW

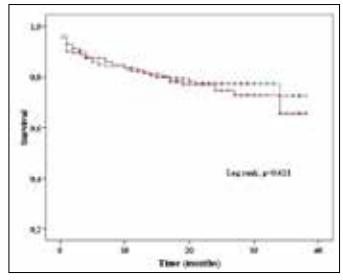


Figure 2. Kaplan-Meier survival estimates by RDW

Coronary artery disease / Acute coronary syndrome

OP-033

Coronary artery disease in outpatients with non-valvular atrial fibrillation: results from the multicenter RAMSES study

Volkan Doğan[1], Özcan Başaran[1], Ahmet Çağrı Aykan[2], İsmail Bolat[3], Mehmet Yaman[4], Mehmet Hamidi[5], Hacı Murat Güneş[6], Murat Civan[7], İbrahim Altun[1], Cevat Kırma[8], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[3]Fethiye Government Hospital, Muğla
[4]Samsun Training and Research Hospital, Samsun
[5]Bandırma State Hospital, Balıkesir
[6]İstanbul Medipol University, İstanbul
[7]Liv Hospital, İstanbul
[8]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Optimal antithrombotic strategy for patients with concomitant coronary artery disease (CAD) and non-valvular atrial fibrillation (NVAF) is controversial. The aim of this study is to assess the prevalence of CAD in outpatients with NVAF and to determine clinical and laboratory parameters associated with the higher prevalence of this arrhythmia. In addition, we compared the indications for antithrombotic treatment options in patients with or without history of CAD.

Materials and Method: ReAl-life Multicenter Survey Evaluating Stroke prevention strategies in Turkey (RAMSES) study was a prospective, multicenter, nationwide observational study conducted in NVAF patients. We studied the clinical data of 6264 Turkish patients participating in the RAMSES study. Demographic properties, comorbid diseases, antithrombotic therapies, CHA2DS2VASc and HAS-BLED scores were recorded and compared between patients with and without CAD.

Results: Coronary artery disease was present in 1828 (29.2%) of patients with NVAF. Most of the NVAF patients with CAD were male (58%). Comorbid diseases such as chronic obstructive pulmonary disease, hypertension, diabetes mellitus, and congestive heart failure were significantly more common in patients with CAD as shown in Table. According to our findings warfarin was more preferred than non-vitamin K antagonists in patients with CAD. Patients with CAD and NVAF required antithrombotic treatment tree fold higher compared patients without CAD (58.1% vs 21.6%; p<0.001, respectively).

Discussion and Conclusion: CAD affects nearly one-third of ambulatory patients with NVAF. Patients with NVAF and CAD were found to have more comorbid diseases and they require more intensive anticoagulant and antiplatelet therapy. Although recent large-scale studies concerning CAD patients showed non-vitamin K antagonist oral anticoagulants (NOACs) did not increase the risk of myocardial infarction in these patients, physicians attending RAMSES study were found to prefer warfarin against NOACs in these patients.

Table 1. Characteristics of patients with and without CAD

	Without CAD (n=4436)	With CAD (n=1828)	P value
Male (%)	1706 (38.5)	1060 (58)	0.001
Age (mean±SD)	69.25 ±11.3	70.65 ±9.2	0.001
Smoking (%)	628 (14.2)	393 (21.5)	0.001
Place of Residence (Urban) (%)	2905(66.2)	1143(63.2)	0.025
Comorbidities (%)			
COPD	852 (19.3)	595 (32.7)	0.001
Hypertension	2886 (65.1)	1414 (77.6)	0.001
Diabetes Mellitus	867 (19.6)	522 (28.6)	0.001
Congestive heart failure	640 (14.4)	746 (40.9)	0.001
Vascular disease	164 (3.7)	1340 (73.9)	0.001
Stroke/ transient ischemic attack	582 (13.1)	252 (13.8)	0.461
Antiplatelet (%)	950 (21.6)	1057 (58.1)	0.001
Anticoagulant (%)			
NOAC	1778 (53.9)	561 (46.4)	0.001
Warfarin	1523 (46.1)	648 (53.6)	
Bleeding history (%)			
Major	169 (3.9)	136 (7.6)	0.001
Minor	653 (15)	396 (22.1)	0.001
CHA_2DS_2VASc score (mean±SD)	2.9±1.5	4.1±1.5	0.001
HAS-BLED score (mean±SD)	1.5±1	2.0±1.2	0.001
Antiarrhythmic Drugs (%)			
Beta blockers	2503 (57.1)	1423 (78.7)	0.001
Calcium channel blockers	1142 (26.1)	321 (17.9)	0.001
Sotalol	43 (1)	13 (0.7)	0.377
Amiodarone	192 (4.4)	106 (5.9)	0.015
Digoxin	824 (18.8)	449 (24.9)	0.001
Propafenone	155 (3.5)	23 (1.3)	0.001

Coronary artery disease / Acute coronary syndrome

OP-034

Erythropoietin stimulates the coronary collateral development in patients with coronary chronic total occlusion

İsa Öner Yüksel[1], Göksel Çağırcı[1], Erkan Köklü[1], Akar Yılmaz[2], Hamit Yaşar Ellidağ[1], Selçuk Küçükseymen[1], Serkan Çay[3], Necat Yılmaz[1], Şakir Arslan[1]

[1]Antalya Education and Research Hospital, Antalya
[2]İzmir University Faculty of Medicine, İzmir
[3]Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: The aim of this study was to analyze the association between the serum erythropoietin level and coronary collateral development in patients with coronary artery disease and chronic total occlusion.

Materials and Method: A total of 168 patients consisting of 117 patients with coronary artery disease (62 with chronic total occlusion (CTO), 55 without CTO) and 51 patients with healthy coronary arteries were included in the study. The patients were assigned into coronary artery disease without CTO (group 0), coronary artery disease with CTO (group 1: weak collateral development, group 2: good collateral development) and normal coronary arteries (group 3).

Results: The serum erythropoietin (EPO) was positively associated with high Rentrop score (r=0.243, p=0.001). Serum EPO levels of patients with CTO (group 1 and 2) was significantly higher than the patients without CTO (group 0 and 3) (98.88 vs. 76.96, p=0.005 Mann-Whitney test). Serum EPO level was significantly higher in especially patient group with CTO and developed collaterals (group 2: 112.4±20.5 mIU/mL) compared to the patients without coronary artery disease (group 3: 18.6±2.0 mIU/mL) (p<0.001) (figure 1and figure 2).

Discussion and Conclusion: Our findings suggest that higher serum EPO level is associated with better coronary collateral development in patients with CTO. Circulatory EPO may be a useful biomarker for coronary collateral development and potential target for therapeutic angiogenesis in patients with CTO.

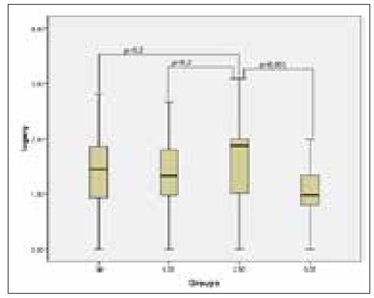


Figure 1. Logarithmic relationship of erythropoietin levels

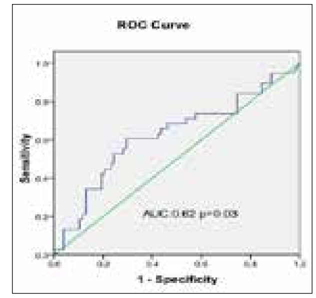


Figure 2. ROC analysis of EPO level and collateralization

Coronary artery disease / Acute coronary syndrome

OP-035

Efficacy and safety of intravenous high-dose versus low-dose bolus tirofiban in acute coronary syndrome patients undergoing coronary intervention

Taner Ulus, Utku Şenol, Senan Tahmazov, Kemal İskenderov, Fezan Mutlu, Alparslan Birdane, Yüksel Çavuşoğlu

Eskişehir Osmangazi University Faculty of Medicine, Eskişehir

Introduction: Tirofiban is recommended for bail-out situation or thrombotic complications in patients with acute coronary syndrome (ACS) undergoing percutaneous coronary intervention (PCI). Small studies showed intravenous (IV) high-dose bolus tirofiban therapy (25 µg/kg) was more effective in suppressing platelet functions compared with low-dose bolus (10 µg/kg). We aimed to investigate efficacy and safety of IV high-dose bolus versus low-dose bolus tirofiban plus maintenance administration (24-36 h) for 'bail-out' therapy in patients with ACS undergoing primary or early PCI.

Materials and Method: A total of 271 patients who administered effective dual antiplatelet therapy were retrospectively evaluated [131 patients in the low-dose bolus group, 140 patients in the high-dose bolus group]. ST segment resolution at 90 min, peak troponin levels, in-hospital, one-month and 6-month major adverse cardiac events (MACE) (including death, MI, target vessel revascularization), and bleeding complications were evaluated.

Results: There were no statistically significant differences between the two groups regarding baseline characteristics and medications (Tablo 1). ST-segment resolution was significantly higher [66.0% (50.0-80.0) versus 50.0% (36.5-75.0, p=0.01)], and peak troponin levels were significantly lower [12.4 (6.5-21.5) ng/dl versus 16.4 (10.1-27.4) ng/dl, p=0.001] in high-dose bolus group. In-hospital, one-month and 6-month follow-up periods, MACE rates and bleeding complications were similar in both groups (Table 2).

Discussion and Conclusion: High-dose bolus tirofiban with maintenance infusion increased ST resolution and reduced infarct size in patients with ACS undergoing primary or early PCI, but it failed to improve adverse cardiac events. In addition, high-dose bolus regimen showed similar safety profile regarding bleeding complications.

Table 1. Baseline characteristics. TIMI: Thrombolysis in myocardial infarction

	Low-dose bolus (n=131)	High-dose bolus (n=140)	p
Age	57.1 ± 15.6	55.5 ± 12.3	0.41
Sex (male) (n, %)	110 (84.0%)	122 (87.1%)	0.56
Body mass index (kg/m²)	27.4 (25.0-29.1)	26.9 (25.1-29.0)	0.37
Hypertension (n, %)	46 (35.1%)	49 (35.0%)	0.98
Diabetes mellitus (n, %)	34 (26.0%)	39 (27.9%)	0.72
Smoking (n, %)	70 (53.4%)	69 (49.3%)	0.49
Killip class >1 (n, %)	19 (14.5%)	15 (10.7%)	0.44
Pain to balloon time (min)	[illegible]	[illegible]	0.13
Door to balloon time (min)	[illegible]	[illegible]	0.28
ST segment resolution (%)	50.0 (36.5-75.0)	66.0 (50.0-80.0)	[illegible]
Left ventricle ejection fraction (%)	44.0 ± 11.2	42.2 ± 11.1	0.16
Creatinine (mg/dl)	[illegible]	[illegible]	0.13
High density lipoprotein (mg/dl)	[illegible]	[illegible]	0.34
Low density lipoprotein (mg/dl)	[illegible]	[illegible]	0.61
Peak CK-MB (U/L)	[illegible]	[illegible]	0.13
Peak troponin (ng/dl)	16.4 (10.1-27.4)	12.4 (6.5-21.5)	0.001
Baseline TIMI 3 flow (n, %)	4 (3.1%)	3 (2.1%)	0.71
TIMI 3 flow after PCI (n, %)	111 (84.7%)	129 (92.1%)	[illegible]

Table 2. Clinical endpoints. MACE: Major adverse cardiac event

	Low-dose bolus (n=131)	High-dose bolus (n=140)	p
In-hospital MACE (n, %)	8 (6.1%)	9 (6.4%)	1.00
One-month MACE (n, %)	11 (8.3%)	11 (7.8%)	1.00
Six-month MACE (n, %)	20 (15.3%)	14 (10.4%)	0.26
Major bleeding (n, %)	2 (1.5%)	3 (2.1%)	1.00
Minor bleeding (n, %)	11 (8.4%)	13 (9.3%)	[illegible]

Lipid and preventive cardiology

OP-036

Simvastatin and RORα Ligands Increase AMP-Activated Protein Kinase (AMPK) Level In vitro

Neslihan Çoban, Çağrı Güleç, Özlem Yıldırım, Nihan Erginel Ünaltuna

İstanbul University, İstanbul

Introduction: AMP-activated protein kinase (AMPK) is a trimeric enzyme comprising a catalytic α-subunit and regulatory β, γ subunits. AMPK was first identified as an upstream kinase that phosphorylates and hence inactivates 3-hydroxy-3-methylglutaryl coenzyme A reductase, the key enzyme controlling cholesterol biosynthesis. Cholesterol is known to be one of the natural ligands of nuclear receptor RORα, and RORα-mediated control of AMPK expression level was shown to play role in metabolism in the mice. Since cholesterol looks like to act as a linker in RORα-AMPK pathway, we aimed to test whether this cholesterol-based pathway is effective in human macrophages which play crucial role in atherosclerosis.
Materials and Method: To test the dependence of AMPK on cholesterol level and RORα aktivity in the macrophages, we measured the expression levels of AMPK and it's downstream gene SREBF2 in THP-1 macrophages treated with simvastatin and/or synthetic RORα ligands.
Results: We observed that simvastatin increased the expression of AMPK, and that this increment was partially enhanced by RORα ligands. Simvastatin was also found to increase the expression of AMPK target gene SREBF2. The latter increment, however, was partially reduced by RORα ligands.
Discussion and Conclusion: AMPK has emerged as a new target for the treatment of cardiometabolic diseases. RORα has also potential to be used as a target in cardiometabolic diseases. Statins, on the other hand, have been used in the treatment of cardiovascular diseases for decades. In this study, we aimed to test the interrelationship between AMPK and RORα in macrophages. Our results suggest that cholesterol might play role in regulation of RORα-AMPK pathway in human macrophages, and this regulation can be modulated by administration of simvastatin and synthetic RORα ligands. These results offer RORα-AMPK pathway as a potential therapeutic target not only for metabolic disorders, but also for atherosclerosis.

Lipid and preventive cardiology

OP-037

Does vitamin D deficiency predict coronary artery disease?

Şeref Alpsoy, Aydın Akyüz, Dursun Çayan Akkoyun, Birol Topçu, Feti Tülübaş

Namık Kemal University Faculty of Medicine, Tekirdağ

Introduction: Coronary artery disease (CAD) is a multifactorial disease. There is some contradictory evidence regarding whether there is a relationship between vitamin D deficiency and CAD. The purpose of this study was to investigate whether or not there is a relationship between the two diseases.
Materials and Method: One hundred and fifteen CAD patients with ≥50% stenosis in the left main coronary artery or ≥70% stenosis in an epicardial coronary artery and 62 healthy subjects were enrolled in the study. All participants were asked to report their medical histories and were examined. Blood samples were taken to measure blood lipids, C-reactive protein (CRP) levels, and serum vitamin D levels.
Results: Compared to the healthy subjects, the CAD patients had higher serum low-density lipoprotein cholesterol (LDL-C), triglyceride, and CRP levels and lower serum vitamin D and high-density lipoprotein cholesterol (HDL-C) levels. There was a positive correlation between vitamin D and HDL-C levels (r=0.328, p<0.001) and a negative correlation between vitamin D and CRP (r=-0.484, p<0.001). In multivariate logistic regression analysis, low vitamin D levels (β±SE = -0.076±0.018; p=0.0001; OR = 1.079; 95% CI = 1.042–1.117), the presence of hypertension (β±SE = 1.287±0.471; p=0.006; OR = 3.623; 95% CI = 1.439–19.120), and high LDL-C levels (β±SE = 0.025±0.011; p=0.023; OR = 0.975; 95% CI = 0.954–0.997) were found to be predictors for the presence of CAD.
Discussion and Conclusion: Vitamin D deficiency is a risk factor for CAD, and it is associated with lower HDL-C and higher CRP levels.

Lipid and preventive cardiology

OP-038

Is advanced hepatosteatosis a better predictor than metabolic syndrome in the predicting premature atherosclerosis?

Çağdaş Kaynak[1], Bilal Geyik[2]

[1]Trakya University Faculty of Medicine, Edirne
[2]Private Medikent Hospital, Lüleburgaz

Introduction: The relationship between nonalcoholic fatty liver disease (NAFLD) seen with increasing frequency in recent years and premature atherosclerosis has been shown in some studies conducted previously. According to the common opinion, it is considered that NAFLD occurs as a reflection of metabolic syndrome (MetS) in the liver secondary to inflammatory substances that increased visceral adipose tissue observed in the MetS secretes by functioning as an endocrine organ. However, in some publications in the recent period, NAFLD has also been shown to affect premature atherosclerosis as a independent clinical condition of MetS. Therefore, in our study, we aimed to evaluate from two different perspectives that the effect of NAFLD on premature atherosclerosis.
Materials and Method: 144 volunteers of men under the age of 55 and women under the age of 65 who had hepatic steatosis assessment with ultrasound for any reason in our clinic, have not received a diagnosis of malignancy, have no history of significant alcohol use and have not carried exclusion criteria were included in the study. USG reports and laboratory parameters were evaluated retrospectively. Volunteers were grouped as grade 0, grade 1, grade 2-3 according to the degree of hepatic steatosis. MetS was diagnosed according to International Diabetes Foundation (IDF) criteria. In the department of radiology, it was manually examined with 7.5-mhz linear probe by high-resolution B-mode ultrasonography (Esaote Vision MyLab 60, Italy) from the mid regions of both common carotid arteries by giving 20-degree angle toward the opposite side in the supine position for the necks of all cases,
Results: While hepatosteatosis grade was increasing, increased positive correlation was found between hepatosteatosis degree and the right and left carotid IMT. While the grade was increasing between the groups, significantly higher carotid IMT were observed (p<0.05). Multivariate logistic regression analysis was performed by taking 0.800 mm predictive value for carotid IMT to show their independent effects due to the relationship of MetS parameters, the presence of NAFLD, age, presence of DM, high LDL and BMI with atherosclerosis on premature atherosclerosis. When taking 0.800 mm predictive value for carotid IMT in the analysis, being 50 age and over, presence of NAFLD grade 2-3 and being between 40-50 age were observed to be independent risk factors affecting premature atherosclerosis (respectively, OR = 27.19, 95%CI, 2.66–285.00, p=0.005; OR = 15.56, 95%CI, 3.20–76.
Discussion and Conclusion: In the light of available findings, we consider that nonalcoholic fatty liver disease is associated with premature atherosclerosis and although the particularly severe hepatosteatosis is in over the age of 40, it has effect on premature atherosclerosis independently of other cardiovascular risk factors. We consider that hepatosteatosis grade 2-3 can predict premature atherosclerosis better than MetS particularly in selected patient groups.

Lipid and preventive cardiology

OP-039

The role of media on statin adherence

Cüneyt Koçaş, Okay Abacı, Betül Balaban Koçaş, Gökhan Çetinkal, Şükrü Arslan, Ahmet Yıldız, Murat Erşanlı

İstanbul University Institute of Cardiology, İstanbul

Introduction: Medication adherence is a complex problem that is affected by many factors, including perceptions and understanding of the disease burden. Specific factors identified as low socioeconomic status, high medication costs, lack of transportation, poor understanding of medication instructions, and long wait times at the pharmacy. In addition, media coverage of health facts has an impact on beliefs, attitudes and behaviours related to health. In recent years, statins were frequently criticised in Turkish newspapers and television channels and most of them were presented in negative fashion. Our goal was to analyze the effects media on statin adherence.
Materials and Method: We retrospectively analyzed the statin adherence of 908 percutaneous coronary intervention patients whom were prescribed a statin before 2011 at our institute and had continuous insurance coverage to determine statin adherence. We used the pharmacy-based proportion of days covered (PDC) method to quantify statin adherence. Statin adherence was categorized according to two PDC cut-off values according to previous studies; PDC ≥80% and PDC ≥50%. To quantify the effects of media; we made a search on Google. We searched the word "cholesterol drugs" on Turkish pages from "news" section.
Results: Search on Google retrieved; 2320 news in 2011, 6210 news in 2012, 5170 news in 2013 and 3070 news in 2014. As news about statins increased from 2011 to 2013, statin adherent patients according to PDC ≥50% criteria decreased significantly (55% in 2011, 54% in 2012 and 50 % in 2013, p=0.03). whereas fully adherent patients (PDC ≥80%) did not decrease from 2011 to 2013 (25% in 2011, 27% in 2012 and 26% in 2013, p=0.62).
Discussion and Conclusion: There are several important findings in our study; first, statin adherence was significantly lower compared to previous studies, second although fully adherent patients continue to take their statins, patients with medium statin adherence group significantly decreased and these findings identified the role of media on medication adherence.

Other

OP-040

Association of paraoxonase and arylesterase with myocardial performance index in healthy overweight and obese people

Musluhittin Emre Erkuş[1], İbrahim Halil Altıparmak[1], Emin Şavik[1], Hatice Sezen[1], Recep Demirbağ[1], Özgür Günebakmaz[1], Nurten Aksoy[1], Ali Rıza Akyüz[2]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Akçaabat Haçkalı Baba State Hospital, Trabzon

Introduction: Paraoxonase and arylesterase have antioxidant characteristics. Some studies indicate that serum paraoxonase activity is associated with atherosclerosis, diabetes and hypercholesterolemia. Several clinical diseases related to these conditions lead to myocardial dysfunction. Myocardial performing index (MPI) is well known as a reliable parameter reflecting of left ventricular performance. We aim to investigate whether paraoxonase and arylesterase are associated with MPI.
Materials and Method: Eighty-seven apparently healthy overweight and obese subjects were included in the study. The subjects were divided into the two groups according to their body mass index (BMI): Group I (control group, BMI <25, n=31), and group II (BMI ≥25, n=58). In all subjects, paraoxonase and arylesterase were measured commercially kits (Relassay, Turkey) and MPI was calculated after performing echocardiography using the following formula MPI= IVCT+IVRT/ET.
Results: Mean age of the subjects was 33.6±9.4 years (18 to 59 years) (65% men). Age, heart rate, systolic and diastolic blood pressure, intraventricular relaxation and contraction time, ejection time, brain natriüretik peptide (BNP), MPI, and arylesterase and paraoxonase activities were similar between the groups (all of p>0.05). Arylesterase but not paraoxonase was both correlated and associated MPI in the group II (r=-0.492, p<0.001, β=-0.275, p=0.11). arylesterase was also correlated with MPI ≥45, unlike MPI <45 (r=-0.529, p=0.004, r=-0.120, p=0.536, respectively). In addition, increased MPI was correlated with age, BNP, and slightly LVMI (all of p<0.05).
Discussion and Conclusion: This study suggests that arylesterase may contribute myocardial dysfunction in the subjects with increased MPI (≥0.45) with BMI ≥25, even if they are apparently healthy.

Pediatric cardiology

OP-041

Increased Asymmetric dimethyl arginine and homocysteine levels associated with pulmonary artery stiffness in children with stable asthma

Dursun Çayan Akkoyun, Nejat Altıntaş, Aydın Akyüz, Şeref Alpsoy, Feti Tülübaş, Birol Topçu, Mustafa Metin Donma

Namık Kemal University Faculty of Medicine, Tekirdağ

Introduction: Asthma is the most common cause of respiratory disability among children. We investigated whether biomarkers homocysteine and asymmetric dimethyl arginine (ADMA) can be used in predicting pulmonary artery stiffness measured by echocardiography in asthmatic children.
Materials and Method: Consecutive patients aged between 5-15 years with stabile asthma bronchiole were prospectively recruited. Serum ADMA and homocystein concentrations were measured with ELISA method. The patients and the controls underwent pulmonary function tests using spirometry. All the children were subjected to echocardiographic examination, and both conventional and tissue Doppler study. Pulmonary artery stiffness (kHz/sec) was calculated as follows = [maximal frequency shift (MFS) / acceleration time (AcT)] of the pulmonary artery flow trace.
Results: The present study enrolled 31 healthy controls and 45 asthmatic children (17 boys and 28 girls) with a mean age of 11.1±1.9 years and mean asthma duration of 29±12 months, totalling 78 subjects. Homocysteine and ADMA levels were significantly higher in patients with asthma than in healthy controls (30.74±17.98 vs 13.90±8.28 nmol/L; p<0.001) and (254.39±98.79 vs 165.82±60.23 ng/mL; p<0.001) respectively. There was a significant positive correlation between pulmonary artery stiffness level and levels of ADMA (r=0.743, p<0.001) and homocysteine (r=0.695, p<0.001).
Discussion and Conclusion: ADMA and homcysteine levels, and pulmonary artery stiffness were found increased in children with asthma when compared with matched control subjects. There was a strong and positive correlation between pulmonary artery stiffness and increased ADMA and homocysteine levels. These results suggest that serum ADMA and homocysteine might be a simple, cost-effective, yet useful marker for the predisposition of patients with asthma to premature vascular disease.

Other

OP-042

Evaluation of Tp-e Interval and Tp-e/ OTc ratio in patients with psoriasis

Fatma Özlem Arıcan Özlük[1], Mustafa Yılmaz[1], Tezcan Peker[1], Dursun TopaF, Erhan Tenekecioğlu[1], Selçuk Kanat[1], Fahriye Vatansever Ağca[1], Kemal Karaağaç[1], Bedrettin Boyraz[1]

[1]Bursa Yüksek İhtisas Training and Research Hospital, Bursa
[2]Bursa Şevket Yılmaz Training and Research Hospital, Bursa

Introduction: Many systemic diseases including cardiovascular disturbances have been described in psoriatic patients. In the previous studies, left ventricle (LV) subclinical myocadial dysfunction was reported in the psoriasis patients. T wave peak to end (Tp-e) interval is a relatively new marker for ventricular arrhythmogenesis and repolarization heterogeneity. Prolongation of this interval represents a period of potential vulnerability to ventricular arrhythmias. However, there is no information available assessing the Tp-e interval and related calculations in patients with psoriasis patients. The aim of this study was to assess ventricular repolarization in patients with psoriasis patients by using QT, corrected QT (QTc) and Tp-e interval, Tp-e/QT ratio, and Tp-e/QTc ratio.
Materials and Method: Thirty (mean age 39±13 years) patients with psoriasis and thirty (mean age 34±8 years) controls were enrolled. The severity of the disease was evaluated by the "Psoriasis Area and Severity Index". QT, corrected QT (QTc), Tp-e interval and Tp-e/QT ratio were measured from the 12-lead electrocardiogram. Left ventricular function were evaluated by echocardiography.
Results: Baseline characteristics and QT, QTc intervals were similar in both groups. No difference was detected between the groups with regards to Tp-e interval (83.0±9 vs 82.3±10; p=0.81), Tp-e/QT (0.22±0.03 vs 0.23±0.04; p=0.3) and Tp-Te/QTc (0.20±0.04 vs 0.19±0.04; p=0.77).
Discussion and Conclusion: These findings suggest that ventricular repolarization in mild to moderate psoriasis patients might be unimpaired. Larger samples and severe degree psoriasis patients are needed to evaluate the arrhytmia risk in psoriasis patients.

Other

OP-043

The awareness, efficacy, safety and time in therapeutic range of warfarin in Turkish population: Warfarin-TR

Ahmet Çelik[1], Servet İzci[2], Mehmet Ali Kobat[3], Ahmet Hakan Ateş[4], Abdulkadir Çakmak[5], Yasin Çakıllı[6], Hüseyin Altuğ Çakmak[7], Abdülmecid Afşin[8], Ahmet İlker Tekkeşin[6], Gönül Açıksarı[9], Mehmet Erdem Memetoğlu[6], Fatma Özpamuk Karadeniz[10], Ekrem Şahan[11], Mehmet Hayri Alıcı[12], Yüksel Dereli[13], Ümit Yaşar Sinan[14], Elif Çekirdekçi[15]

[1]Mersin University Faculty of Medicine, Mersin
[2]Kartal Koşuyolu Education And Research Hospital, İstanbul
[3]Fırat University Faculty of Medicine, Elazığ
[4]Samsun Training and Research Hospital, Samsun
[5]Amasya University, Sabuncuoğlu Şereefeddin State Hospital, Amasya
[6]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[7]Rize Kaçkar State Hospital, Rize
[8]İnönü University Faculty of Medicine, Malatya
[9]İstinye State Hospital, İstanbul
[10]Şanlıurfa Balıklıgöl State Hospital, Şanlıurfa
[11]Atatürk Lung Disease and Thorax Surgery Training and Research Hospital, Ankara
[12]Gaziantep State Hospital, Gaziantep
[13]Necmettin Erbakan University Meram Faculty of Medicine, Konya
[14]İstanbul University Instıtute of Cardiology, İstanbul
[15]Çorlu State Hospital, Tekirdağ

Introduction: The awareness, time in therapeutic range (TTR), and safety of warfarin therapy were investigated in the adult Turkish population.
Materials and Method: This multicenter prospective study included 4987 patients using warfarin and regular INR monitoring for at least 6 months between 1 January 2014 and 31 December 2014 in Turkey. TTR was calculated according to F.R. Roosendaal's algorithm. Awareness was evaluated by the patients' knowledge of warfarin's affect and food-drug interactions.
Results: The mean TTR of patients was 49.52±22.93%. The patients with hypertension (55.3%), coronary artery disease (23.2%), congestive heart failure (24.5%), or smoking habit (20.8%) had significantly lower TTR levels than the others. Of the patients, 42.6% had a mechanical valve, 38.4% had non-valvular atrial fibrillation (AF), and 19% had other indications for warfarin. Patients with non-valvular atrial fibrillation had higher TTR levels than patients with mechanical valve and others (p=0.022). Warfarin awareness decreased at higher age groups. The knowledge of warfarin's food-drug interactions was 55%. People with warfarin awareness had higher TTR levels than did those without the knowledge. Patients with 8 or less INR monitoring sessions a year or less had lower TTR levels (46.4±25.3 vs. 51.1±21.3, respectively, p<0.001) and lower awareness (44.6% vs. 60.6%, p<0.001) than did patients with more than 8 INR monitoring sessions a year. In this study, 20.1% of the patients had a bleeding event (major bleeding 15.8%, minor bleeding 84.2%) within a year.
Discussion and Conclusion: Both the mean TTR ratios and awareness of the Turkish population on warfarin therapy were low. The low TTR levels of the Turkish population might be caused by the low awareness of warfarin, warfarin's food-drug interactions and high rates of concomitant diseases.

Other

OP-044

Medicolegal approach to cardiovascular cases alleged as malpractice

Zafer Liman[1], Yusuf Özer[1], Abdullah Coşkun Yorulmaz[2], Hakan Karpuz[2]

[1]The Council of Forensic Medicine, İstanbul
[2]İstanbul University Cerrahpaşa Faculty of Medicine, İstanbul

Introduction: Globally increasing awareness of rights and legal assistance brings along significant increase in medical malpractice claims of physicans each passing day. Besides, damages as a result of intense working conditions and/or careless and inattentive attitudes of physicans has contributions to decrease of reliance to healthcare system or staff of patients and increase on complains. In Turkey there is no reliable information or statistics about malpractice lawsuits in the field of cardiology and cardiovascular surgery. Therefore in this study, our aim is to evaluate the reasons of complaints and results of medico-legal malpractice cases in the field of cardiology and cardiovascular surgery.
Materials and Method: The Council of Forensic Medicine (ATK) comes the first for courts to request expert opinion about the cases with claims of medical malpractice. This study was conducted in Istanbul, the archive records of evaluated malpractice cases by the 1st and 3rd Speciality Board of Council of Forensic Medicine between the years 2005-2010 were reviewed, approximately 54000 cases were analysed and 389 of them related to cardiology and cardiovascular surgery specialty were included to the study.
Results: In this study, 389 malpractice claim files related to cardiovascular diseases were examined retrospectively. It is found that males were 71.7%, females were 28.3% of the cases and averge age was 45.2. When the cases evaluated according to the geographic location of the submitting court, it is found that cases submitted from Marmara (35.7%) and Ege (21.9%) respectively. It is determined that 76.5% of 485 physicians that were claimed for medical malpractice in 389 cases were males. It is observed that, medical practice mistake found for 32.6% and for 12% the council was not able to state any opinion in terms of malpractice for the cases claimed as medical malpractice. When the pathology of complaints of cases considered, it is observed ischemic heart diseases (42.2%) and major vascular diseases (21.1%) take first two places respectively. It is found that, most common complaints against healthcare institutions were private hospitals (35.8%) and state hospitals (33.7%) respectively. When medical malpractices evaluated according to the healthcare institutions, it is found for state hospitals (15.3%) scientific statistical significant standard deviation more than others. It is determined that 20% cases were submitted to other experts before The Council of Forensic Medicine (ATK) and for 44.3% of the cases opinion results showed difference.
Discussion and Conclusion: Our study is the most comprehensive research about medical mistake in cardiovascular diseases in our country up to now. To present and solve the problems of malpractice claims related to cardiovascular diseases, new studies are needed in hospitals which especially serve in cardiology speciality area. And also we believe that our research will flash on to new studies.

Other

OP-045

Aortic stiffness index can be useful in predicting success of treatment with vardenafil in patients with erectile dysfunction

Hüseyin Ede[1], Kürşad Zengin[1], Serhat Tanık[1], Sebahattin Albayrak[1], Barış Yaylak[2], Süleyman Akkaya[2], Cegerğun Polat[3], Ali Rıza Erbay[1],

[1]Bozok University, Faculty of Medicine, Yozgat
[2]Diyarbakır Training and Research Hospital, Diyarbakır
[3]Memorial Diyarbakır Hospital, Diyarbakır

Introduction: Aortic elasticity measured by aortic stiffness index (ASI) and aortic distensibility (AD) has been shown to be related to cardiovascular diseases. Erectile dysfunction (ED) is associated with endothelial function. Presence of cardiovascular risk factors was closely related to endothelial function and ED respectively. Vardenafil is frequently used in treatment of ED but reveals variable clinical outcomes. In this study, we aimed to evaluate the role of aortic elasticity in predicting vardenafil success among patients with ED.
Materials and Method: Sixty one consecutive male subjects with primary ED and indication of vardenafil treatment were included in the study. Complete blood count, fasting blood glucose, serum lipid profile, hor-

monal profile with total testosterone, prolactin, thyroid stimulating hormone of all subjects were obtained. All subjects fulfilled 5-item version of the International Index of Erectile Function (IIEF-5) before the vardenafil treatment. Also systolic (SBP) and diastolic (DBP) blood pressures, echocardiographic examination were carried out according to the published guidelines before the treatment. Aortic stiffness index is calculated by using ASI= ln(SBP/DBP)/[(Asd-Add)/Add] formula, aortic distensibility is obtained by using AD[1/(10^3xmmHg)] = 2x [(Asd-Add)/Add]/PP formula where Asd and Add means aortic systolic and diastolic diameters respectively. Then the patients treated with vardenafil re-evaluated after 2 months (with usage of at least 8 pills of vardenafil). Their IIEF-5 scores were assessed again. Pre-treatment, post-treatment and ΔIIEF-5 (the difference between pre-treatment and post-treatment scores) scores and ASI values were compared.
Results: Average age was 54±8 years, average left ventricle ejection fraction was 63±3%, average SBP and DBP were 119±13 and 77±6 mmHg respectively. Pre-treatment and post-treatment IIEF-5 and ΔIIEF-5 scores were 9±3; 19±2 and 9±3 respectively. Mean ASI and AD values were 3.10±0.54 and 4.13±2.55 1/(10^3xmmHg) accordingly. ASI value of severe ED at beginning (n=15) was significantly higher than that of mild-moderate ED at the beginning (n=12) (p<0.001 z=-4.394). All pre-treatment IIEF-5 scores increased significantly compared to post-treatment IIEF-5 scores (p<0.001). ASI values were significantly correlated to pre-treatment IIEF-5 scores (r=-850, p<0.001) and ΔIIEF-5 value (r=0.732 p<0.001) but not to post-treatment IIEF-5 score (r=0.023 p=0.860).
Discussion and Conclusion: Aortic elasticity impaired in accordance with degree of ED. The subjects with higher ASI values obtained more benefit from vardenafil since ΔIIEF-5 values were positively correlated with ASI values.

Other

OP-046

Myocardial performance index and left ventricular mass index in early diagnosis of cardiac dysfunction in patients with β-thalassemia major

İbrahim Altun, Cem Şahin, Özcan Başaran, Fatih Akın, Yaşar Topal, Hatice Topal, Murat Biteker, Mehmet Fatih Azık

Muğla Sıtkı Koçman University Faculty of Medicine, Muğla

Introduction: β-Thalassemia major is an inherited hemoglobin disease that is characterized by an important genetic and clinical heterogeneity. Cardiovascular involvement is a well-known complication and the primary cause of mortality in patients with thalassemia major. Echocardiography is a reliable, feasible and non-invasive modality for early detection and serial assessment of alterations in cardiac morphology and functions in patients at risk for myocardial iron deposition. In this study we aimed to assess myocardial performance index and left ventricular mass index in asymptomatic patients with beta-thalassemia major without known heart disease.
Materials and Method: The study included 55 asymptomatic beta-thalassemia major patients [medianage: 20 years (10-48)] without known history of heart disease who were recruited from the thalassemia clinic of Mugla Sitki Kocman University Education and Research Hospital. Forty age- and sex-matched healthy controls were enrolled into this study. Myocardial performance index were determined by using standard 2-dimensional and Doppler echocardiography. LV mass was calculated using the Devereux formula.
Results: Left ventricular mass index [83.917 (50.62-144) and 68.37 (41.9-113.3)] and myocardial performance index [0.464 (0.33-0.68) and 0.431 (0.31-0.51)] was significantly higher in patients with beta-thalassemia major compared to control group (p<0.001 and p=0.006). There was a negative correlation between myocardial performance index and thalassemia major (r:-0.288; p=0.004) and hemoglobin values (r:-0.286; p=0.04).
Discussion and Conclusion: it is known that early cardiac dysfunction can develop in patients with beta-thalassemia, even in those receiving effective chelation therapies. Myocardial performance index and left ventricular mass index can help clinician for early detection of cardiovascular disorders in patients with thalassemia even in the presence of normal echocardiography findings such as left ventricle ejection fraction. Particularly, the indices should be used to predict and monitor cardiovascular complications in asymptomatic patients with beta-thalassemia.

Other

OP-047

Comparison of the international normalized ratio values measured by CoaguChek XS coagulation analyzer and conventional laboratory methods

Macit Kalçık[1], Mahmut Yesin[2], Emrah Bayam[2], Sabahattin Gündüz[2], Mustafa Ozan Gürsoy[3], Süleyman Karakoyun[4], Mehmet Ali Astarcıoğlu[5], Sinan Cerşit[2], Mehmet Özkan[4]

[1]İskilip Atıf Hoca State Hospital, Çorum
[2]Kartal Koşuyolu Education and Research Hospital, İstanbul
[3]İzmir Gaziemir State Hospital, İzmir
[4]Kafkas University Faculty of Medicine, Kars
[5]Evliya Çelebi Training and Research Hospital, Kütahya

Introduction: Warfarin which is a widely used oral anticoagulant has a narrow therapeutic window and requires regular international normalized ratio (INR) monitoring to maintain optimal anticoagulation. Recently, several portable coagulometers have been developed to measure INR levels. We aimed to compare the INR results obtained by a portable coagulometer (CoaguChek XS) and a standard laboratory method (STAGO STA-R).
Materials and Method: Overall 433 consecutive patients (male:191, median age: 61 [44–86] years) who were admitted to outpatient anticoagulation clinic were enrolled in this study. Each patient was tested for INR by using portable CoaguChek XS and STAGO STA-R automatic laboratory coagulometer. Correlation between methods was assessed using the Pearson's correlation test and Cohen's Kappa Test. Bland-Altman plot was used to identify mean difference and 95% limits of agreement.
Results: The mean INR values for CoaguChek XS and STAGO STA-R were 2.54±1.17, and 2.79±1.39 respectively. There was a strong positive correlation between the two methods (r=0.966; 95%CI:0.95–0.97, p<0.001). The Bland–Altman analysis gave a mean difference of 0.26±0.40 between the two methods, with a 95% limit of agreement of -0.54 to 1.05. In patients with INR values >5.0 there was only a moderate correlation (r=0.676; 95% CI: 0.38-0.89, p=0.002) and the mean difference of INR tended to increase as mean INR values increased. There was an excellent overall agreement between the two methods (Kappa = 0.751; 95% CI, 0.69–0.80; p<0.001).
Discussion and Conclusion: There was good consistency between traditional laboratory testing and CoaguChek XS coagulometer, which provides rapid and reliable INR analysis.

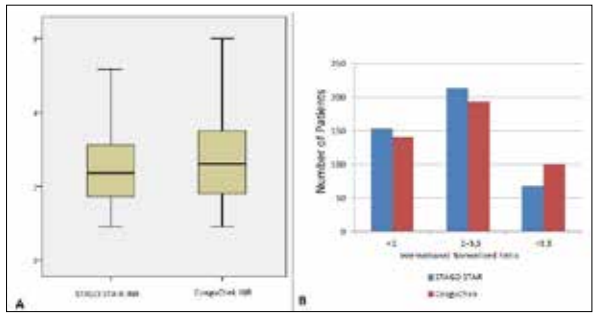


Figure 1. The distribution of INR values by 2 methods

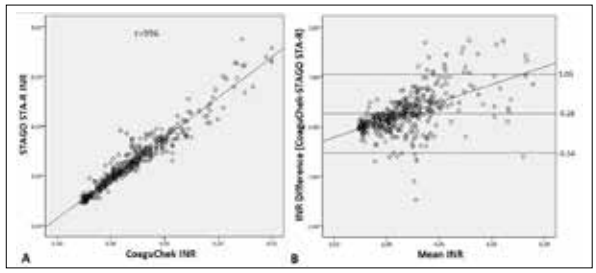


Figure 2. Correlation graph and Bland-Altman diagram

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-048

Prescription patterns of oral anticoagulants in non-valvular atrial fibrillation: a single center experience from Turkey (PROPER)

Özcan Başaran, Nesrin Filiz Başaran, Edip Güvenç Çekiç, İbrahim Altun, Volkan Doğan, Gurbet Özge Mert, Kadir Uğur Mert, Fatih Akın, Mustafa Özcan Soylu, Kadriye Memiç Sancar, Murat Biteker

Muğla Sıtkı Koçman University Faculty of Medicine, Muğla

Introduction: Inappropriate use of oral anticoagulants (OAC) have not been well investigated; however, may be frequent in real-world practice in patients with non-valvular atrial fibrillation (NVAF). Multiple dose regimens for the different indications and for some specific populations, including older patients, patients with renal insufficiency, or those taking interacting drugs may cause inappropriate use of OACs. This study was designed to evaluate the prescription patterns and appropriateness of OACs in patients with NVAF in real-world clinical settings.
Materials and Method: We performed a prospective, observational study (NCT02366338). A total number of 148 NVAF patients were screened for OAC prescription. Appropriateness of prescribing was evaluated using 9 criteria of the Medication Appropriateness Index (MAI): indication, choice, dosage, modalities and practicability of administration, drug-drug interactions, drug-disease interactions, duplication, and duration. For each criterion, the evaluator has to rate if the medication is (A) appropriate, (B) inappropriate but with limited clinical importance, and (C) inappropriate.
Results: Out of 148 patients 73 (50%) were on warfarin (group 1), 39 (26%) were on rivaroxaban (group 2) and 36 (24%) were on dabigatran (group 3). According to the choice criterion 37 % of group 1, 8% of group 2, and 5% of group 3 patients were rated as appropriate. The drug dosage was not appropriate in 77% of group 1, 23% in group 2, and 42% in group 3 patients. MAI showed that 83% of group 1, 28% of group 2, and 47% of group 3 patients were not using the right drug or the right dosage of the drug (Figure).
Discussion and Conclusion: Inappropriate drug use is frequent among NVAF patients not only for warfarin but also for novel oral anticoagulants. Although there is an apparent improvement in thromboprophylaxis of NVAF much more effort is needed for appropriate use of OACs.

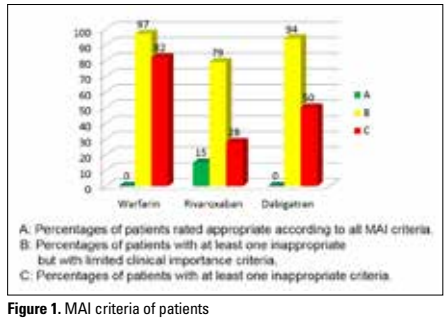


Figure 1. MAI criteria of patients

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-049

Non-valvular atrial fibrillation in patients with or without previous stroke: results from RAMSES study

İbrahim Altun[1], Özcan Başaran[1], Osman Beton[2], Volkan Doğan[1], Macit Kalçık[3], Mehmet Hayri Alıcı[4], Serdar Bozyel[5], Feyza Çalık[6], Kadriye Akay[7], Yiğit Çanga[8], Emine Altuntaş[9], Nihat Pekel[10], Cevat Kırma[11], Murat Biteker[4]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Cumhuriyet University, Faculty of Medicine, Sivas
[3]İskilip Atıf Hoca State Hospital, Çorum
[4]Gaziantep 25 Aralık State Hospital, Gaziantep
[5]Kocaeli Derince Training and Research Hospital, Kocaeli
[6]Mersin State Hospital, Mersin
[7]Kocaeli State Hospital, Kocaeli
[8]Kartal Yavuz Selim State Hospital, İstanbul
[9]Bingöl State Hospital, Bingöl
[10]Medical Park İzmir Hospital, İzmir
[11]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Previous history of stroke/transient ischemic attack is a predictor of adverse events in patients with non-valvular atrial fibrillation (NVAF). We conducted analyses in patients who had entered the RAMSES study (ReAl-life Multicentre Survey Evaluating the Status of Stroke Prevention Strategies in Patients with Non-Valvular Atrial Fibrillation in TurKey) with a history of stroke/ transient ischemic attack (TIA) or without stroke/TIA.

Materials and Method: The prospective, observational RAMSES study is a multicenter, national registry of patients with NVAF which was conducted in 57 centers in 36 cities from seven geographical regions in Turkey. RAMSES excluded patients with mitral stenosis or artificial valve prostheses. This subgroup analysis evaluated baseline characteristics and treatment modalities in patients with and without prior stroke and TIA.

Results: Of the 6273 NVAF patients included in the RAMSES study, 18 patients were excluded due to missing data about previous history of stroke. Of the remaining 6255 patients 835 (13.3%) had a history of stroke or TIA. Patients with previous history of stroke/TIA were younger, had higher CHA_2DS_2VASc and HASBLED scores, had more history of bleeding compared to the patients who had no history of cerebrovascular event. Non-vitamin K antagonist oral anticoagulants (NOACs) are preferred anticoagulant therapy in patients with history of stroke or TIA. However, 20% of the patients with NVAF and prior history of stroke/TIA had no anticoagulant therapy.

Discussion and Conclusion: Patients with NVAF and prior history of stroke/TIA had higher risk not only for thromboembolic events but also for bleeding. Although clearly indicated, nearly one-fifth of these patients do not receive anticoagulant therapy.

Table 1. Properties of patients with and without stroke

	With Stroke/TIA (n= 835)	Without Stroke/TIA (n=5420)	P value
Age	69.2 ±10.74	72.6 ±9.96	0.001
Male (%)	363 (43.5)	2398 (44.2)	0.681
Smoking (%)	126 (15.1)	891 (16.5)	0.339
COPD (%)	193 (23.2)	1246 (23.1)	0.905
Place of residence (%)			
Rural	293 (35.6)	1854 (34.6)	0.555
Urban	529 (64.4)	3510 (65.4)	
Type of atrial fibrillation (%)			
First attack	13 (1.6)	276 (5.1)	0.001
Paroxysmal	130 (15.8)	725 (13.5)	
Persistent	682 (82.7)	4371 (81.4)	
Coronary heart disease (%)	252 (30.2)	1568 (29)	0.461
Antiplatelet (%)	268 (32)	1735 (32)	1
Anticoagulant (%)			
NOAC	356 (43)	1979 (36.8)	
Warfarin	307 (37.1)	1858 (34.5)	0.001
None	165 (19.9)	1548 (28.7)	
Bleeding history (%)			
Major	77 (9.4)	228 (4.3)	0.001
Minor	167 (20.3)	884 (16.6)	0.008
Congestive heart failure (%)	190 (22.9)	1190 (22)	0.560
Hypertension (%)	631 (75.6)	3662 (67.7)	0.001
Diabetes Mellitus (%)	178 (21.4)	1211 (22.3)	0.561
Vascular disease (%)	219 (26.5)	1284 (23.8)	0.089
CHA_2DS_2VASc score (mean±SD)	5.08 ±1.45	2.99 ±1.41	0.001
HAS-BLED score (mean±SD)	2.5 ±1.18	1.5 ±1	0.001

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-050

Early repolarization patterns are common and associated with recurrence of atrial fibrillation among patients undergoing pulmonary vein isolation

Burak Hünük, Giacomo Mugnai, Giuseppe Ciconte, Yukio Saitoh, Ghazala Irfan, Vedran Velagic, Erwin Ströker, Ebru Hacıoğlu, Gian-Battista Chierchia, Carlo de Asmundis, Pedro Brugada

Heart Rhythm Management Center, UZ Brussels - VUB, Brussels, Belgium

Introduction: Pulmonary vein isolation (PVI) has recently become the cornerstone of percutaneous transcatheter ablation for drug-resistant paroxysmal atrial fibrillation (AF). "Point-by-point" ablation by means of radiofrequency (RF) energy is an established technique for PVI with relatively low AF recurrence rates. Early repolarization pattern (ERP) on surface ECG previously accepted as a benign finding has recently been associated with fatal ventricular arrhythmias and poor prognosis in numerous cardiovascular diseases. Our aim was to evaluate the prevalence of ERP on the pre-procedural baseline ECGs among patients undergoing PVI by means of RF catheter ablation and its association with the clinical endpoints.

Materials and Method: From January 2008 to March 2015, all consecutive patients who underwent PVI as index procedure by RF ablation in our center were evaluated for our retrospective analysis. Exclusion criteria: structural heart disease, Class I/III antiarrhythmic use, poor quality ECGs (≥2 uninterpretable leads), ventricular pacemaker. Baseline ECGs were reviewed and lateral (I, aVL, V5-V6) (LER), inferior (II, III, aVF) (IER) or inferolateral (both leads) (ILER) ERP were defined as a J-point elevation of at least 1 mm in at least two leads with a slurring/notching at the end of the QRS. After discharge, patients were followed with ECG and 24 h Holter recordings at 1, 3, 6, and 12 months. All documented episodes of AF lasting ≥30 seconds were considered as a recurrence.

Results: Of 684 RF-PVI cases, 434 patients (305 males, 58±11 years) were included in our analysis. ERP observed in 67 patients (15.4%) (ILER n=26, IER n = 23, LER n=18) which were significantly younger, demonstrating longer PR intervals and lower basal heart rates. At a mean follow up of 22.1±9.7 months, AF recurrences were found in 107 patients (24.6%). The rate of recurrence in patients with ERP was non significantly higher than the ones without ERP in the overall population (respectively 32.8% vs 23.2%; p=0.1). However, in patients between ≥40 to <60 years old (n=206, 79% male) only those with an ILER had significantly higher AF recurrence rates compared with the ones in the same group without ILER (respectively, 56.3% vs 19%; p=0.002). In the other age groups (≥20 to <40, ≥60) and ERP localizations (LER, IER) no significant correlation with recurrence observed. Furthermore, ILER was significantly able to predict AF recurrence (HR 2.42, 95% CI 1.21-4.82; p=0.01) in the follow up in patients between ≥40 to <60 years old.

Discussion and Conclusion: ERP was strikingly more prevalent in our AF population than the general population. Presence of ILER in baseline ECG might predict AF recurrence in the follow up after RF PVI in middle aged subjects. Our findings might be attributed to recently proposed common genetic and electrophysiological pathways taking part in the pathophysiology of AF and J wave syndromes/ERPs.

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-051

Effect of pulmonary vein anatomy and pulmonary vein diameters on outcome of cryoballoon catheter ablation for atrial fibrillation

Ekrem Güler, Gamze Babur Güler, Gültekin Günhan Demir, Filiz Kızılırmak, Hacı Murat Güneş, İrfan Barutçu, Fethi Kılıçaslan

İstanbul Medipol University, İstanbul

Introduction: In this study, we aimed to determine pulmonary vein (PV) variation patterns in patients undergoing cryoballoon ablation for atrial fibrillation (AF) and their impacts on procedural success and recurrence and also to identify predictors for recurrence.

Materials and Method: We enrolled 54 patients with AF and having symptoms despite medical therapy. Prior to the procedure PV variation and left atrium (LA) size were evaluated in all patients by computed tomography (CT) scan. Ablation procedure was performed with single balloon and predictors for AF recurrence were determined.

Results: The study population consisted of 54 patients [male:50, (27%), mean age: 53±12] with AF. Paroxysmal AF and persistent AF were detected in 55,6% (30) and 44,4% (24) of the patients, respectively. Mean procedural and fluoroscopy times were 73±19 mins and 16±4 mins, respectively. The number of the patients with PV variation of RPV with >2 ostia and accessory PV was 27,8% (15) and 18,5% (10). During the follow-up 20,4% (11) of patients had AF recurrence. Patients with recurrence had greater transverse LA size (62±6 vs. 57±5 mm, p:0014), longitudinal LA size (65±5 vs. 61±6mm, p:0025), LA volume (78±17ml vs. 65±14ml, p:0011), fluoroscopy time (20,4±4,6 vs.15,7±3,5 min, p:0001), RPV with >2 ostia (72,7% vs. 27,3%, p:0001), RUPV diameter [21,6±2,8 cm vs. 15,8±2,1; p<0001], persistent AF (33,3% vs. 66,7%, p:0046). In multivariate analysis RUPV diameter (: 1006 p:0010; OR: 2736; CI95% [1267-5906]) and fluoroscopy time (:0327 p:0050; OR: 1386; CI 95% [1000-1921]) were determined as independent predictors for AF recurrence.

Discussion and Conclusion: Transverse and longitudinal LA size, LA volume, fluoroscopy time, presence of persistent AF, RUPV size and the number of RPV ostia are associated with AF recurrence following cryoballoon based ablation. RUPV size and fluoroscopy time are predictors for recurrence.

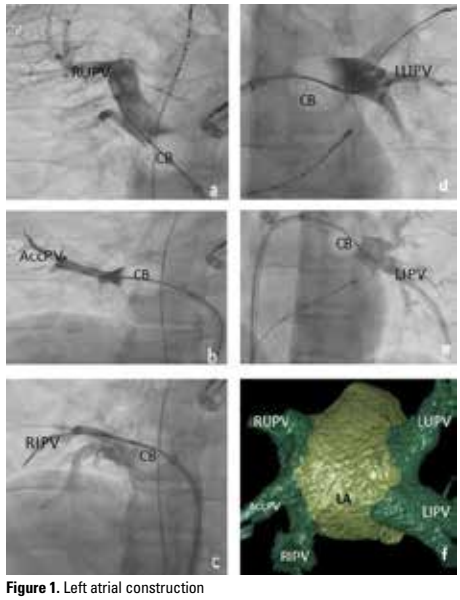


Figure 1. Left atrial construction

Table 1. Recurrence groups

	Recurrence (+)	Recurrence (-)	p
Age, years	53±11	53±12	0,844
Male gender, % (n)	63,6% (7)	46,5% (20)	0,501
Hypertension, % (n)	36,4% (4)	48,8% (21)	0,517
CAD, % (n)	9,1% (1)	17,1% (7)	1
DM, % (n)	18,2% (2)	14% (6)	0,659
Urea, mg/dl	29,4±9,7	30,2±5,8	0,658
Creatinine, mg/dl	0,86±0,2	0,83±0,1	0,651
Dyslipidemia, % (n)	36,4% (4)	30,8% (12)	0,728
Current tobacco use, % (n)	27,3% (3)	17,9% (7)	0,671
ACEIs, % (n)	9,1% (1)	33,3% (13)	0,148
ARBs, % (n)	30% (3)	20,5% (8)	0,673
Statins, % (n)	27,3% (3)	28,2% (11)	1
OADs,% (n)	9,1% (1)	12,8% (5)	1
CCBs, % (n)	18,2% (2)	17,1% (7)	1
BBs, % (n)	72,7% (8)	79,1% (34)	0,693
Amiodarone, % (n)	45,5% (5)	34,9% (15)	0,728
Propafenone, % (n)	54,5% (6)	52,4% (22)	1
Warfarin, % (n)	40% (2)	22,7% (5)	0,580
AF history			
Paroxysmal AF, % (n)	10% (3)	90% (27)	**0,046**
Persistant AF, % (n)	33,3%(8)	66,7%(16)	
≥1 previous AAD failed, %(n)	72,7% (8)	74,4% (32)	1
AF duration	25 [36-12]	13 [60-3]	0,080
LVEF, %	64±2	65±3	0,487
LA transvers diameter, mm	62±6	57±5	**0,014**
LA anteroposterior diameter, mm	36±4	35±4	0,484
LA longitudinal diameter, mm	65±5	61±6	**0,025**
LA volume diameter, ml	78±17	65±14	**0,011**
Procedure			
Procedure time,min	73±10	73±9	0,890
Fluoroscopy time,min	20,4±4,6	15,7±3,5	**0,001**
Follow-up, months	10,1±4	9,4±4,9	0,651

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-052

The role of baseline indirect inflammatory markers in prediction of response to cardiac resynchronization therapy

Kevser Balcı[1], Mustafa M. Balcı[1], Fatih Şen[1], Uğur Canpolat[2], Mehmet Kadri Akboğa[1], Sefa Ünal[1], Meryem Kara[1], Orhan Maden[1], Hatice Selçuk[1], Timur Selçuk[1]

[1]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[2]Hacettepe University Faculty of Medicine, Ankara

Introduction: In many cardiovascular diseases, white blood cell counts with differentials were used to predict adverse events. Both platelet-to- lymphocyte ratio and neutrophil-to-lymphocyte ratio were studied in various cardiovascular diseases. The role of inflammatory condition assessed by using routine laboratory tests in cardiac resynchronization therapy (CRT) respond has not been investigated thoroughly. Therefore, we aimed to assess the association of neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR) and relative lymphocyte (%L) count with response to CRT.
Materials and Method: A total of 157 patients (76.4% male; mean age 58.7±11.8 years) who underwent CRT implantation at our tertiary referral hospital were retrospectively analyzed.
Results: Among included patients, a total of 50 patients (31.8%) were defined as "non-responders". Median NLR and PLR were significantly higher in non-responder group (p<0.001) and median %L was significantly lower in non-responder group (p<0.001). Also, median NLR was significantly higher in patients with NYHA II-III when compared to patients with NYHA I after 6 months of CRT implantation (p<0.001, p=0.004, respectively). Correlation analysis demonstrated a positive correlation between paced QRS duration and NLR (p=0.031) and a negative correlation between paced QRS duration and %L (p=0.002). In addition, both NLR and %L showed significant correlation with post-procedural NYHA functional classes (p<0.001; p=0.008, respectively). Patients with a PLR >173.09 had a 2.9 fold and a NLR >3.45 had a 12.2 fold increased risk of CRT nonresponse, respectively.
Discussion and Conclusion: In the current study non-responders to CRT had higher NLR and PLR and lower %L that may support the deleterious effects of baseline inflammatory condition in advanced HF.

Table 1. Correlation analyses

	NLR	PLR	%L
pQRS duration	**0.270**	0.120	**-0.413**
p-value	**0.031**	0.344	**0.002**
Pre-EF	-0.154	-0.138	**0.228**
p-value	0.054	0.084	**0.004**
Post-EF	-0.140	-0.019	0.126
p-value	0.120	0.835	0.163
Pre-NYHA	0.145	0.048	-0.097
p-value	0.071	0.552	0.229
Post-NYHA	**0.307**	0.156	**-0.225**
p-value	**<0.001**	0.065	**0.008**

Table 2. Multivariate analysis

Variables	Odds Ratio	95% Confidence Interval		Wald	p-value
		Lower	Upper		
Ischemic etiology	0.919	0.201	4.210	0.012	0.913
PCI	2.519	0.266	23.860	0.648	0.421
HT	1.168	0.439	3.111	0.097	0.756
Statin	1.307	0.500	3.413	0.298	0.585
NLR>3.45	12.216	2.161	69.052	8.021	**0.005**
PLR>173.09	2.891	1.178	7.097	5.368	**0.021**
%L<19.75	0.264	0.045	1.542	2.186	0.139

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-053

Comparison of the accuracy of three algorithms in predicting accessory pathways among adult Wolff-Parkinson-White syndrome patients

Orhan Maden, Kevser Balcı, Timur Selçuk, Mustafa Balcı, Burak Açar, Sefa Ünal, Meryem Kara, Hatice Selçuk

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: The aim of this study was to investigate the accuracy of three algorithms in predicting accessory pathway locations in adult patients with Wolff-Parkinson-White syndrome in Turkish population.
Materials and Method: A total of 207 adult patients with Wolff-Parkinson-White syndrome were retrospectively analysed. The most pre-excited 12-lead electrocardiogram in sinus rhythm was used for analysis. Two investigators blinded to the patient data used three algorithms for prediction of accessory pathway location.
Results: Among all locations, 48.5% was left-sided, %44 was right-sided and 7.5% was located in midseptum or anteroseptum. When only exact locations were accepted as match, predictive accuracy for Chiang was 71.5%, 72.4% for d'Avila and 71.5% for Arruda. The percentage of predictive accuracy of all algorithms did not differ between the algorithms (p=1.000; p=0.875; p=0.885, respectively). The best algorithm for prediction of right-sided, left-sided and anteroseptal and midseptal accessory pathways was Arruda (p<0.001). Arruda was significantly better than d'Avila in predicting adjacent sites (p=0.035) and the percent of the opposite site prediction was higher with d'Avila than Arruda (p=0.013).
Discussion and Conclusion: All algorithms were similar in predicting accessory pathway location and the predicted accuracy was lower than the previously reported by their authors. However, according to the accessory pathway site, the algorithm designed by Arruda et al. showed better predictions than the other algorithms that using this algorithm may provide advantages before a planned ablation.

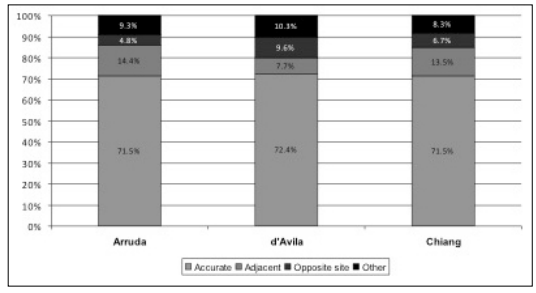


Figure 1. Comparison of the three algorithms

Table 1. Comparison of the three algorithms

	Odds ratio	%95 confidence interval		Wald	p-value
		Lower	Upper		
Left-sided					
Arruda	79.693	11.987	529.832	20.519	<0.001
d'Avila	3.305	0.570	19.170	1.776	0.183
Chiang	17.979	3.536	91.427	12.123	<0.001
Right-sided					
Arruda	73.994	17.959	304.874	35.495	<0.001
d'Avila	0.969	0.232	4.047	0.002	0.966
Chiang	15.155	3.877	59.239	15.274	<0.001
Midseptal/anteroseptal					
Arruda	56.159	8.043	392.143	16.504	<0.001
d'Avila	11.278	4.241	230.665	11.406	<0.001
Chiang	0.471	0.036	6.244	0.325	0.568

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-054

Usefulness of mean platelet volume for predicting stroke risk in paroxysmal atrial fibrillation patients

Nermin Bayar[1], Şakir Arslan[1], Göksel Cağırcı[1], Cağın Mustafa Üreyen[1], Serkan Çay[2], İsa Öner Yüksel[1], Erkan Köklü[1], Zehra Erkal[1], Selçuk Küçükseymen[1]

[1]Antalya Education and Research Hospital, Antalya
[2]Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: Atrial fibrilation (AF) is the most common sustained arrhythmia in clinical practice. It is important to specify patients with high risk of thromboembolus due to elevated procoagulant and prothrombotic state. The aim of this study is to assess the relation of stroke/transient ischemic attack (TIA) with mean platelet volüme (MPV) which is an indicator of platelet activation in patients with PAF.
Materials and Method: Patients with PAF were enrolled to this study during years of 2012-2014. Patients were divided into 2 groups according to presence or absence of stroke/TIA. Demographic data was registered and CHA_2DS_2VASc scores of patients were calculated. It was investigated whether there was a difference among groups regarding MPV levels.
Results: Ninety patients, 31 of whom had history of stroke/TIA (symptomatic group) were enrolled to study. CHA_2DS_2VASc score of symptomatic group was 4.77±1.26 while CHA_2DS_2VASc score of asymptomatic group was 2.63±1.41. Nevertheless, there was not any difference regarding CHA_2DS_2VASc score among 2 groups

when 2 points due to stroke/TIA was substracted in symptomatic patients. MPV was detected higher in symptomatic patients than asymptomatic patients (11.1±1.3fL vs 9.1±1.0fL, p<0.001, respectively). 9.85 value of MPV ascertained with ROC curve analysis to predict stroke/TIA was found to have a sensitivity of 87% and specificity of 78%.

Discussion and Conclusion: Elevated MPV levels were ascertained to be related with stroke/TIA in patients with PAF. Assessment of MPV besides CHA_2DS_2VASc score in patients with PAF might be subsidiary to specify patients with enhanced risk of stroke/TIA.

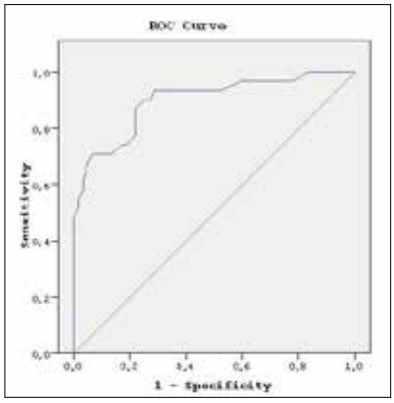


Figure 1. 9.85 value of MPV ascertained with ROC curve

Table 1. Echocardiographic parameters of population

Variables	Stroke/TIA (+) (n=31)	Stroke/TIA (-) (n=59)	P value
LVEF,%	60(60-65)	62(60-65)	0.421
LVEDD,mm	49.3±7.0	46.0±4.4	0.009
LVESD, mm	32.9±8.9	29.6±6.4	0.050
LAD, mm	40(3.9-4.6)	41(3.6-4.3)	0.395
LV hypertrophy, %	17(55%)	34(58%)	0.826
mitral E/A	0.8(0.6-1.4)	1.3(0.7-1.7)	0.019
Mitral EDT, ms	232±67	213±58	0.164
IVRT, ms	111±17	108±22	0.446
Aortic root, mm	32.9±3.7	31.3±4.6	0.103

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-055

Fragmented QRS: a novel marker of stimulating ventricular arrhythmia in cardiac electrophysiologic study

Fatma Hızal Erdem, Serkan Öztürk, Alim Erdem, İbrahim Dönmez, Suzi Selim Ayhan, Mehmet Fatih Özlü, Mehmet Yazıcı

Abant İzzet Baysal University Bolu Faculty of Medicine Health Research and Application Hospital, Bolu

Introduction: It was previously clearly shown that fragmented QRS complexes (fQRS) on a routine 12 – lead electrocardiogram were predictor of ventricular arrhythmias in different types of cardiac diseases. There are different indications for stimulating ventricular tachycardia with cardiac electrophysiologic study (EPS). This retrospective study investigated the diagnostic significance of the fragmented QRS complexes in stimulating ventricular tachycardia by EPS in patients with different indications.

Materials and Method: Between January 2011 and May 2015, all patients with suspected ventricular arrhythmias and that underwent EPS for stimulating ventricular arrhythmia in our department were included to the study (n=88). The fragmented QRS complexes were evaluated using routine 12–lead electrocardiogram.

Results: The study population was evaluated in four groups: Group1 (QRS ≥120 ms with fQRS; n=23), Group2 (QRS <120 ms with fQRS; n=21), Group3 (QRS ≥120 ms without fQRS; n=20), Group4 (QRS <120 ms without fQRS; n=24).Ventricular arrhythmias were stimulated in 47.2% (n=42) of patients by diagnostic cardiac EPS (Ventricular tachycardia 76.1% (n=32), and ventricular fibrillation 23.9% (n=10)). Ventricular arrhythmia were stimulated 17 patients (73,9%) in Group1, 18 patients (85.7%) in Group2, 7 patients (35%) in Group3 and none of the patients in Group4 (p<0.05). In linear multivariate regression analysis (including age, sex, smoking, diabetes mellitus, hypertension, LVEF, LV systolic diameter, LV diastolic diameter, fQRS and wide QRS as dependent parameters), only LVEF and fQRS were found to be an independent risk factor for stimulating ventricular arrhythmias (Beta=0.462, p<0.001; Beta=0.403, p<0.001; respectively).

Discussion and Conclusion: The fragmented QRS complexes on ECG are associated with stimulating ventricular tachycardia by EPS in patients with different indications. It may be a helpful parameter for these kinds of patients before the procedure.

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-056

The predictive value of QRS fragmentation and QRS distortion for in-hospital mortality in patients with acute ST elevation myocardial infarction

Zülkif Tanrıverdi[1], Hüseyin Dursun[2], İnci Tuğçe Çöllüoğlu[2], Dayimi Kaya[2]

[1]İdil State Hospital, Şırnak
[2]Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Several electrocardiographic (ECG) parameters have been used in patients with acute ST elevated myocardial infarction (STEMI) for predicting in-hospital mortality. Fragmented QRS (fQRS) and QRS distortion are among these parameters and have separately shown to be related with increased in-hospital mortality. However there are limited data evaluating these two findings together with mortality. The aim of this study is to investigate the relationship of these parameters together with in-hospital mortality in patients with acute STEMI.

Materials and Method: Four hundred thirteen eligible patients with acute STEMI that underwent coronary angiography consecutively between June 01, 2009 and June 01, 2013 were enrolled in this study. Twelve-lead ECG of the patients taken in the first 48 hours were analyzed. Patients without fQRS and QRS distortion formed group 1, with either fQRS or QRS distortion formed group 2; patients with both fQRS and QRS distortion formed group 3.

Results: In-hospital mortality of Group 3 was found to be significantly higher than Group 2 (18.2% vs. 8.8%, p=0.045) and Group 1 (18.2% vs. 1.6%, p<0.001). Moreover, in-hospital mortality of Group 2 was also significantly higher than Group 1 (8.8% vs. 1.6%) (Figure 1). The predictive value of the presence of these two parameters together has a sensitivity and specificity of 14.1% and 58.6%, respectively for in-hospital mortality.

Discussion and Conclusion: The presence of fQRS and QRS distortion separately or together have found to be associated with increased in-hospital mortality in patients with acute STEMI. As the number of these ECG findings increase, the in hospital mortality also rise significantly.

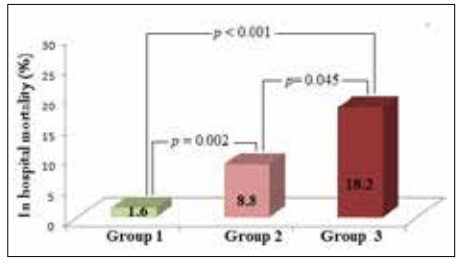


Figure 1. The comparison of in-hospital mortality of three groups

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-057

Impaired left atrial mechanics are associated with transient atrial fibrillation during electrophysiology study for supraventricular tachyarrhythmias

Hayati Eren, Mustafa Akçakoyun, Serdar Demir, Rezzan Deniz Acar, Anıl Avcı, Mehmet Mustafa Tabakçı, Cüneyt Toprak, Mert Evlice, Ahmet Güner, Mehmet İnanır, Ramazan Kargın, Mehmet Yunus Emiroğlu

Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: The aim of our study was to evaluate the patients with supraventricular tachyarrhythmias (SVT) who experience transient atrial fibrillation (AF) during diagnostic and/or therapeutic electrophysiology study (EPS) by using speckle tracking echocardiography (STE).

Materials and Method: A total of 48 patients who experienced transient AF during EPS for SVT were included into the study. An age and gender matched control group was designed including 52 patients who did not experience AF during EPS. The patients with history of AF, heart failure, cardiomyopathy, coronary artery disease, valvular heart disease with more than mild degree, thyroid gland dysfunction, chronic renal disease or chronic obstructive pulmonary disease were excluded. Echocardiographic parameters including left atrium volume index (LAVI), left ventricle end-diastolic (LVEDD) and systolic (LVESD) diameters, left ventricle ejection fraction (LVEF), systolic pulmonary artery pressure (PAPs), E/A, deceleration time (Dec Time), systolic strain rate (SRs), early diastolic strain rate (SRe), late diastolic strain rate (SRa), left atrial reservoir (SA res), and left atrial pump (SA pump) functions were analysed.

Results: A total of 100 patients were analysed. The baseline caharacteristics in terms of age, gender, diabetes mellitus, family history, dislipidemia and smoking were not statistically different between the study groups. Echocardiographic parameters such as LVESD, LVEDD, LVEF, and PAP were not different between the groups whereas diastolic dysfunction parameters were statistically different. E/A, Dec Time, and LAVI was 1.2±0.26, 194±20, 38±3.3 in patients who experienced transient AF and 1.3±0.9, 182±19, 35±2.6 in patients who did not experience AF during EPS, respectively (p<0.026, p=0.002, and p=0.001, respectively). Left atrial reservoir function and pump function were impaired in patients who experienced transient AF according to the patients who did not experience AF during EPS (35±2.1 vs 41.±3.1; p<0.001 and 14.±0.9 vs 16±1.2, p<0.001, respectively). In addition, the patients who experienced transient AF during EPS had significantly lower SRs, SRe, and SRa than the patients who did not experience AF (1.4±0.10 vs 1.6±0.12; p<0.001, 1.2±0.08 vs 1.4±0.11; p<0.001, and 1.1±0.08 vs 1.2±0.07; p<0.001, respectively).

Discussion and Conclusion: The clinical significance of transient AF during EPS for SVT is not known. Those patients who had transient AF during EPS for SVT had increased left atrial volume and pressure findings in transthoracic echocardiography. In addition, these patients showed impaired left atrial mechanic functions by using speckle tracking method. These findings may be associated with increased fibrosis in the left atrium. Therefore the patients with transient AF during EPS for SVT can be at high risk for paroxismal AF development in the future. Prospective further studies are needed to clarify this subject.

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-058

A different method for evaluation of the outonomic nervous system in patients with idiopathic hyperhidrosis: systolic blood pressure and heart rate

Yusuf İzzettin Alihanoğlu, Bekir Serhat Yıldız, İsmail Doğu Kılıç, Ahmet Sarıçopur, Mustafa Öncü, İpek Büber, Levent Taşlı, Harun Evrengül, Havane Asuman Kaftan

Pamukkale University Faculty of Medicine, Denizli

Introduction: The aim of this study was to evaluate the autonomic control of cardiovascular system through heart rate recovery (HRR) and systolic blood pressure recovery (SBPR) values obtained at various time intervals after maximal graded exercise treadmill testing in patients with idiopathic hyperhidrosis (IH) compared to the controls.

Materials and Method: The study population included 36 patients with IH (group I, 20 men, 16 women; mean age, 25±7 years) and 36 control subjects (group II, 12 men, 24 women; mean age, 27±5 years). All patients were selected from young, non-obese and healthy sedentary individuals.

Results: Peak HR values reached in IH patients were significantly higher compared to the control group (p<0.001). Obtained HRR values at third, fourth and fifth minutes were detected significantly lower in IH group compared to the controls (HRR 3rd: 57±16 vs. 64±9; p=0.03; HRR 4th: 61±14 vs. 68±9; p=0.03; HRR 5th: 64±12 vs. 70±7; p=0.008). In addition, calculated mean values for SBPR1 and SBPR2 were greater than 1 in patients with IH (1.04±0.15 vs. 0.98±0.08 and 1.0±0.12 vs. 0.94±0.06) and these were statistically significant compared to the control group (p=0.04 and p=0.03, respectively).

Discussion and Conclusion: In conclusion, significantly impaired SBPR values in addition to decreased HRR values observed in IH patients may indicate that the autonomic dysfunction in IH may not only be local but also a systemic situation having some cardiovascular effects. Both HRR and SBPR values may provide additional information about predicting adverse cardiovascular events in the future even in apparently healthy young IH patients.

Table 1. Demographic characteristics of patients

Table 1. Demographic and clinical findings of the patients with idiopathic hyperhidrosis and the controls.

	Control group n=36	Idiopathic Hyperhidrosis n=36	P value
Age (years)	27±5	25±7	NS
Gender, Male/Female	12/24	20/16	NS
Smoking, n (%)	7(19)	11(30)	NS
Height (cm)	167±6	170±9	NS
Weight (kg)	66±13	66±13	NS
Body mass index (kg/m²)	23±3	22 ±3	NS
Waist circumference (cm)	75±11	75±10	NS
Fasting glucose (mg/dL)	97±5	94±8	NS
Hemoglobin (g/dL)	14±1	14 ±1	NS
Pre-exercise SBP (mm/hg)	122±18	125±14	NS
Pre-exercise DBP (mm/hg)	80±8	82±9	NS
Resting HR (beats/minute)	92±15	91±10	NS

SBP: Sistolic blood pressure, DBP: Diastolic blood pressure, HR: Heart rate, NS: Non-significant.

Table 2. Comparison of the characteristics obtained during exercise test between two groups.

	Control group n=36	Idiopathic Hyperhidrosis n=36	P value
Exercise capacity (METs)	11±1	11±1	NS
Peak exercise HR (beats/minute)	172±14	155±15	<0,001
Peak SBP (mm/hg)	149±28	138 ±22	NS
Peak DBP (mm/hg)	78±10	77±11	NS
Recovery SBP 1st min (mm/hg)	135±17	137±21	NS
Recovery SBP 3rd min (mm/hg)	133±20	135±16	NS

SBP: Sistolic blood pressure, DBP: Diastolic blood pressure, HR: Heart rate, NS: Non-significant.

Table 2. Comparison of 2 groups

Table 3. Comparison of sistolic blood pressure recovery and heart rate recovery values between two groups after exercise treadmill test.

	Control group n=36	Idiopathic Hyperhidrosis n=36	P value
SBPR1	0.98±0.08	1.04±0.15	0,04
SBPR2	0.94±0.06	1.0±0.12	0,03
HRR 1st min (beats/minute)	37±13	37±15	NS
HRR 2nd min (beats/minute)	57±11	54±16	NS
HRR 3rd min (beats/minute)	64±9	57±16	0,03
HRR 4th min (beats/minute)	68±9	61±14	0,03
HRR 5th min (beats/minute)	70±7	64±12	0,008

HRR: Heart rate recovery, SBPR: Sistolic blood pressure recovery, NS: Non-significant.

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-059

Appropriateness of dabigatran use in patients with non-valvular atrial fibrilation: results from RAMSES study

Özcan Başaran[1], Edip Güvenç Çeki[1], Nesrin Filiz Başaran[1], Ezgi Kalaycıoğlu[2], Onur Taşar[3], Ceyhan Türkkan[4], Müjgan Tak Öztürk[5], Füsun Helvacı[6], Mehmet Aytürk[5], Özgür Kaplan[7], Cem Doğan[7], Mevlüt Koç[8], Cevat Kırma[9], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[3]Elazığ Training and Research Hospital, Elazığ
4Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[5]Ankara Keçiören Education and Research Hospital, Ankara
[6]Şişli Etfal Training and Research Hospital, İstanbul
[7]Malatya State Hospital, Malatya
[8]Adana Numune Training and Research Hospital, Adana
[9]Kartal Koşuyolu Training and Research Hospital, İstanbul

Introduction: Dabigatran is the first introduced drug of non-vitamin K antagonist oral anticoagulants (NOACs) for stroke prevention in non-valvular atrial fibrillation (NVAF). Two different dosage forms of dabigatran; 110 mg and 150 mg has been currently prescribed in Turkey. However, appropriate use of dabigatran has not been clinically evaluated in our country. The objective of this subgroup analysis was to determine the appropriateness of dabigatran in a large, multicenter study.

Materials and Method: ReAl-life Multicenter Survey Evaluating Stroke Prevention Strategies (RAMSES) study is a prospective, observational study that was conducted in outpatient cardiology clinics. Atrial fibrillation was classified as NVAF in the absence of rheumatic mitral stenosis or valvular prosthesis. 1148 patients who were on dabigatran were included to the study. The 110 mg dose was rated as appropriate in patients over 80 years old, creatinine clearance 30–50 mL/min, or patients at high risk of hemorrhage (HAS-BLED ≥3).

Results: Of the 1148 patients, 698 patients were (61%) using 110 mg and 450 patients (39%) were using 150 mg dose of dabigatran (Table). After excluding patients with missing data, 668 patients who were on low dose dabigatran and 424 patients who were on high-dose dabigatran were analysed for appropriate use of the drug. Our analysis showed that 390 (58.3%) of the patients who were on low dose dabigatran did not have any indication for the lower dose of the drug. Moreover, lower dosage could be more convenient in 101 (23.8%) patients who were on 150 mg dabigatran according to age, creatinine clearance, and HAS-BLED scores.

Discussion and Conclusion: Our study showed that inappropriate of dabigatran is common for both doses which may cause devastating complications.

Table 1. Comparison of low and high dose of dabigatran

	Dabigatran 110 mg (n=698)	Dabigatran 150 mg (n=450)	P value
Male (%)	273 (39.1)	211 (46.9)	0.01
Age (mean±SD)	72.7 ±9.4	67.1 ±10.5	0.001
Smoking (%)	68 (9.8)	78 (17,4)	0.001
Alcohol (%)	25 (3.6)	12 (2.7)	0.494
CHA_2DS_2VASc (%)	3.5±1.47	3.1±1.5	0.001
HAS-BLED (%)	1.65 ±0.97	1.49 ±0.98	0.01
Major bleeding (%)	31 (4.5)	16 (3.6)	0.542
Minor bleeding (%)	81 (11.7)	44 (9.8)	0.334

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-060

Comparison of health related quality of life among patients using novel oral anticoagulants or warfarin for nonvalvular atrial fibrillation

Kevser Balcı[1], Mustafa Balcı[1], Uğur Canpolat[2], Fatih Şen[1], Mehmet Kadri Akboğa[1], Muhammed Süleymanoğlu[1], M. Serdar Kuyumcu[1], Orhan Maden[1], Hatice Selçuk[1], Timur Selçuk[1]

[1]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[2]Hacettepe University Faculty of Medicine, Ankara

Introduction: The aim of this study was to compare health related quality of life (HRQoL) measures between novel oral anticoagulants (NOACs) and warfarin treated Turkish patients who had been started OACs due to non-valvular atrial fibrillation (AF) and to determine the effects of OACs on patient's emotional status, anxiety and depression.

Materials and Method: A total of 182 patients older than 18 years with non-valvular AF and being treated with OACs for at least 6 months according to current AF guidelines who admitted to outpatient clinics in between July 2014 and January 2015 were included in this cross-sectional study. Exclusion criteria were receiving OACs for other than non-valvular AF and being unable to answer the questionnaire. A questionnaire was performed in all participants to evaluate HRQoL, depression and anxiety. The mean differences between groups were compared by Student's t test, otherwise, Mann-Whitney U test was applied for comparisons of the medians.

Results: The annual number of hospital admissions was significantly higher in the warfarin group (p<0.001) and all of the HRQoL scores were significantly lower, both of the hospital anxiety and depression scale (HADS) scores were higher in the warfarin group (p<0.001). History of any type bleeding was significantly higher in the warfarin group (p<0.001). However, none of them was classified as a major bleeding. Among patients who experienced bleeding, all of the HRQoL scores were significantly lower and HADS-Depression score was significantly higher (p<0.001; p=0.002, respectively).

Discussion and Conclusion: Warfarin treated patients had higher levels of self-reported symptoms of depression and anxiety and compromised HRQoL when compared to NOAC-treated patients. The results may be explained by higher rates of bleeding episodes and the higher number of hospital admissions that may cause restrictions in life while on warfarin treatment.

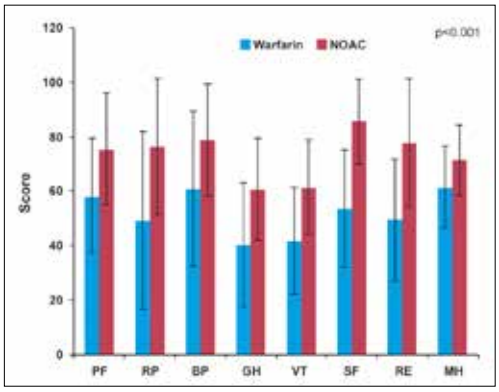


Figure 1. Quality of life scores

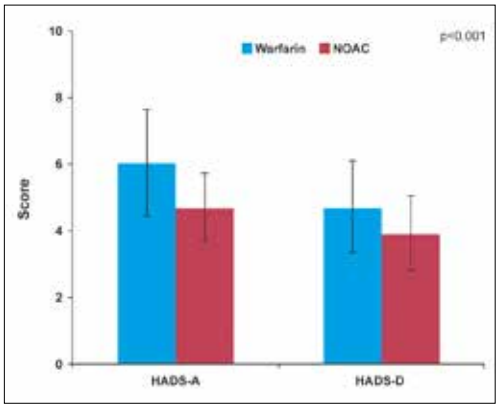


Figure 2. HADS scores

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-061

The impact of cryoablation characteristics in effectiveness of pulmonary vein isolation

Barış Ünal, Özgür Aslan, Ebru Özpelit, Hüseyin Dursun

Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Little data exist regarding the effects of cryobaloon ablation (CBA) characteristics in effectiveness of pulmonary vein isolation. In this study we aimed to evaluate CBA characteristics as a predictor of ablation efficiency.
Materials and Method: 102 patients with atrial fibrillation underwent pulmonary vein isolation using CBA technique. CBA time and temperatures were continuously recorded. After each CBA, a Lasso catheter was placed into the target pulmonary vein (PV) to determine whether electrical PV disconnection was present.
Results: Among 367 veins ablated, early electrical reconnection was present in 12 veins. On univariate analysis balloon warming time, nadir temperature, balloon freezing time, time to reach nadir temperature and baloon cooling rate (baloon temperature at the end of rapid cooling phase/time to reach plateau phase of cooling) predicted pulmonary vein reconnection. On multivariate analysis,balloon cooling rate was the only independent predictor of early electrical reconnection in pulmonary veins (OR: 0,897 95% CI: 0,800-0,998 p:0,047). (Table 1) ROC curve analysis demonstrated a cut-off value of 130.5°C/min in predicting early reconnection with a sensitivity of 83,3% and specificity of 76,9% (AUC: 0,87 p<0.001).
Discussion and Conclusion: Balloon cooling rate seems to be the best among CBA temperature parameters in predicting successful target pulmonary vein isolation during cryoablation. This may serve in the early identification of noneffective balloon applications.

Table 1. Analysis of temperature characteristics

	Univariate analysis			Multivariate analysis		
	OR	P	%95 CI	OR	P	%95 CI
Nadir Temperature	1,20	<0,001	1,09-1,32	1,05	0,45	0,91-1,21
Warming time	0,86	0,001	0,90-0,94	0,89	0,55	0,19-1,01
Freezing time	1,33	<0,001	1,15-1,55	0,78	0,51	0,49-1,26
Time to reach nadir temparature	1,04	<0,001	1,02-1,07	1,02	0,08	0,99-1,05
Cooling rate	0,91	<0,001	0,87-0,95	0,89	0,04	0,80-0,99

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-062

Correlation of serum neuron-specific enolase levels with acute brain injury in patients undergoing catheter ablation for atrial fiibrillation

Aynur Acıbuca, Veysel Kutay Vurgun, Ali Timuçin Altın, Mustafa Kılıçkap, Canan Işıkay, Başar Candemir, Demet Menekşe Gerede, İnci Şule Gül, Ömer Akyürek, Çetin Erol

Ankara University Faculty of Medicine, Ankara

Introduction: Catheter ablation of atrial fibrillation (AF) is a favourable therapeutic option for the treatment of patients, who are symptomatic despite antiarrhytmic medication. However, this procedure may lead to thromboembolic complications, especially stroke. Silent cerebral embolism is more frequent than clinically apparent stroke. We aimed to measure periprocedural serum neuron-specific enolase (NSE) levels, which is known as biomarker of neuronal injury.
Materials and Method: Forty three patients with paroxysmal AF underwent pulmonary vein isolation performed by radiofrequency ablation. A neurological examination was performed pre- and postprocedural period. Serum NSE levels were determined before and at the end of the procedure, at 2, 24 and 48 hours after the procedure.
Results: None of the patients developed new neurological deficits. But NSE levels increased after ablation above the upper reference limit of 17 ng/ml in 14 patients; and also 50% increase was observed compared to baseline in 33 patients. No clinical parameters such as age, hypertension, previous history of stroke, diabetes mellitus, CHA_2DS_2 VASc score, atherosclerotic heart disease and no procedural parameters such as activated clotting time value, total procedure time, electrical cardioversion were associated with an increased level of NSE. On the other hand, patients with increased NSE levels above the upper reference limit had larger left atrium and patients with 50% increase in NSE level had lower minimum systolic blood pressure measurement during the procedure.
Discussion and Conclusion: Serial assessment of serum NSE level may help to predict acute brain injury related to AF ablation in a low price and readily available manner. However, further research, in which magnetic resonance imaging or other laboratory methods are used, needed to support biomarker based approach in detecting silent cerebral embolism.

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-063

Evaluation of association between stroke/transient ischemic attack and atrial electromechanical delay in patients with paroxysmal atrial fibrillation

Nermin Bayar[1], Çağın Mustafa Üreyen[1], Zehra Erkal[1], Murat Esin[1], Göksel Cağırcı[1], Selçuk Küçükseymen[1], Serkan Çay[2], Şakir Arslan[1]

[1]Antalya Education and Research Hospital, Antalya
[2]Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: The aim of this study was to evaluate the association between the history of stroke/transient ischemic attack (TIA) and interatrial and intra-atrial electromechanical delay (EMD) in patients with paroxysmal atrial fibrillation (PAF).
Materials and Method: Patients diagnosed with PAF were included in the study. Patients who had a history of stroke or TIA were defined as the symptomatic group, while those who did not have such history were defined as the asymptomatic group. Based on the transthoracic echocardiographic records, atrial electromechanical coupling (time interval from the onset of P wave on surface electrocardiogram to the beginning of A' wave interval with tissue Doppler echocardiography), intra- and interatrial EMD were measured.
Results: 160 patients, 52 of whom were symptomatic, were included in the study. While the intra- left atrial EMD was 68.2±6.1 ms in the symptomatic group, it was found to be 50.8±6.5 ms in the asymptomatic group (p<0.001). Interatrial EMD was 91.3±5.0 ms in the symptomatic group, whereas it was found to be 71.5±7.0 ms in the asymptomatic group (p<0.001). Intra-left atrial EMD equal to or greater than 60ms was found to have 80.6% sensitivity and 94.9% specificity to predict stroke/TIA. Interatrial EMD equal to or greater than 81ms had 83.9% sensitivity and 98.3% specificity to predict stroke/TIA.
Discussion and Conclusion: Prolonged interatrial and intra- left atrial EMD in patients with PAF is associated with stroke/TIA. Evaluation of this parameter in addition to CHA2DS2VASc score in patients with PAF may be helpful in identifying those patients who are at high risk of stroke/TIA.

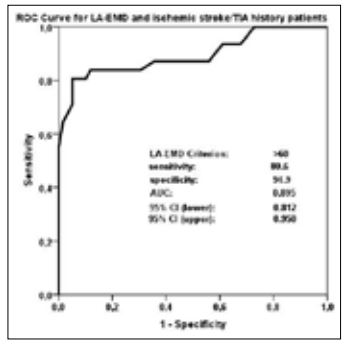


Figure 1. ROC curve of intra-left atrial EMD

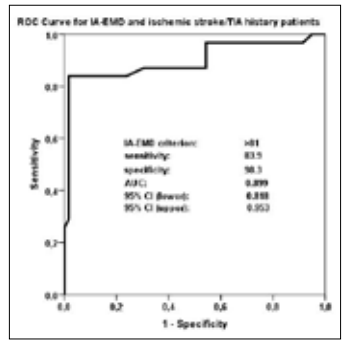


Figure 2. ROC curve of interatrial EMD

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-064

Evaluation of Tp-e interval and Tp-e/QT ratio in patients with isolated bicuspid aortic valve patients

Arif Arısoy[1], Kadriye Memiç[2], Selami Demirelli[3], Fatih Altunkaş[1], Kayıhan Karaman[1], Metin Karayakalı[1], Mustafa Öztürk[4], Hüsnü Değirmenci[5], Yusuf Karavelioğlu[2], Köksal Ceyhan[1]

[1]Gaziosmanpaşa University Faculty of Medicine, Tokat
[2]Hitit University Faculty of Medicine, Çorum
[3]Erzurum Regional Training and Research Hospital, Erzurum
[4]Çaycuma State Hospital, Zonguldak
[5]Erzincan University Faculty of Medicine, Erzincan

Introduction: Bicuspid aortic valve (BAV) is one of the most common congenital heart defects. BAV is not only a disorder of valvulogenesis, but also represents a genetic disorder of aorta and cardiac development. Recent studies have shown that BAV is associated with abnormal aortic elasticity, impaired left ventricular (LV) systolic and diastolic function. But, the LV reporalization features in these patients have not been adequately investigated and there is limited data in the literature. Tp-e, which is the interval between the peak and the end of T wave on ECG, is accepted as an index of transmural dispersion of repolarization; and Tp-e/QT ratio is used as an electrocardiographic index of ventricular arrhythmogenesis. In our study, we aimed to assess ventricular repolarization in patients with BAV by using the QT, Tp-e interval and Tp-e/QT ratio.
Materials and Method: A total of 34 patients with BAV and 29 controls were included. Any patients with aortic valve stenosis and more than mild aortic regurgitation, dysfunction of other heart valves, coronary artery disease or any systemic disease were excluded from the study. Tp-e interval and QT duration were measured from the 12 derivation electrocardiogram. QTc and Tp-e/QT ratio was calculated.
Results: Demographic, electrocardiographic, and echocardiographic data of the study groups are listed in Table 1. Patients and control subjects were similar in baseline characteristics. There were no significant differences between groups with respect to QT, QTc, Tp-e interval and Tp–e/QT ratio.
Discussion and Conclusion: In our study, electrocardiographic repolarization features in isolated BAV patients were found similar to normal population.

Table 1. Study parameters of the groups

	Control (n=29)	BAV (n=34)	p value
Age(year)	30,5±9,9	34,6±13,6	0.183
Sex(female)	12 (42)	17 (50)	0.529
LVEDD(mm)	44±4	46±3	0.113
LVEF(%)	63±3	64±2	0.224
Heart rate(bpm)	80±14	78±10	0.719
QT(ms)	364±32	353±27	0.151
QTc(ms)	417±34	402±29	0.062
Tp-e(ms)	95±13	91±13	0.217
Tp-e/QT	0.22±0.03	0.22±0.03	0.798

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-065

TAPSE predicts major adverse cardiovascular events in patients with arrhythmogenic right ventricular cardiomyopathy/dysplasia

İbrahim Altun[1], Abdullah Kaplan[2], Samim Emet[2], Fatih Akın[1], Ahmet Gürdal[2], Murat Biteker[1], Mustafa Özcan Soylu[1], Ahmet Kaya Bilge[2], Kamil Adalet[2]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]İstanbul University, İstanbul Medical Faculty, İstanbul

Introduction: Arrhythmogenic right ventricular cardiomyopathy or dysplasia (ARVC/D) is a rare, progressive genetic disorder of the heart muscle and characterized by loss of myocytes and replacement with fibro-fatty tissue mainly involving the right ventricle myocardium. Right ventricle fractional area change (RV-FAC) and tricuspid annulus plane systolic excursion (TAPSE) are useful parameters for echocardiographic assessment of right ventricle longitudinal systolic function. However, their prognostic role has not been well-studied in ARVC/D. We aimed to investigate the long-term prognostic value of right ventricular parameters including RV-FAC and TAPSE in patients with ARVC/D.
Materials and Method: ARVC/D patients who were followed by the Arrhythmia Outpatient Clinics of the Istanbul Medical Faculty were enrolled into the study. Twenty patients (16 men, 4 women, mean age: 42.32±14.9 years) who fulfilled the 2010 ARVC/D Revised Task Force Criteria underwent baseline transthoracic echocardiography. The impact of FAC and TAPSE for the prediction of major adverse cardiovascular events (MACE) defined as the occurrence of cardiac death, survived sudden cardiac death or ventricular fibrillation is investigated.
Results: 5 (25%) patients experienced MACE during a median follow-up period of 4 years. Compared to patients who did not experience MACE, ARVC/D subjects who developed MACE had lower TAPSE (19.8±5 mm vs 27.8±8.9 mm, p=0.022). However other echo parameters were not statistically different in patients with and without MACE. Multivariate analysis revealed that TAPSE was the single independent predictor of MACE. Sensitivity and specificity of TAPSE <20 mm in identifying patients with MACE were 82% and 84%, respectively.
Discussion and Conclusion: This long-term observational study indicates that TAPSE is associated with an increased risk for MACE in patients with ARVC/D.

Table 1. Echocardiographic Variables with and without MACE

	MACE (+)	MACE (-)	P
TAPSE, mm, mean±SD	19.8± 5	27.8± 8.9	0.022
RV-FAC, %, mean±SD	29.8±9.6	33.6 ± 8.5	0.444

Cardiovascular nursing / Technician

OP-066

Comparison of the effects of oral presentation and brochure on the knowledge and anxiety levels of patients undergoing coronary angiography

Tuğba Karataş, Şenay Civelek, Tuğba Yiğit, Bahar Akdoğan, Bülent Boyacı

Gazi University Faculty of Medicine, Ankara

Introduction: This study was planned for comparing the effects of training and brochure on the knowledge and anxiety levels in the patients undergoing coronary angiography.
Materials and Method: This study was performed descriptively for comparing the effects of presentation and brochure on the knowledge and anxiety levels in the patients undergoing coronary angiography. The study was performed in cardiology clinic of a university hospital.The sample of the study was consisted of 100 patients who was hospitalized in the cardiology clinic between February-May 2015 and was undergone coronary angiography procedure for the first time. The patients were asked to fill in the Questionnaire Form and State/Trait Anxiety Inventory initially. Before coronary angiography procedure, 50 patients were given a brochure which consisted of information about the process and the patients were provided to read it. The other 50 patients were disclosed orally through a presentation including this information about the process. After the brochure and presentation orally, the patients were asked to fill in the Quesitonnaire Form and State/Trait Anxiety Inventory again. Ethical consent was taken from the Gazi University Clinical Research Ethical Committee and written consent was taken from the patients.
Results: The patients were monitored with diagnosis of angina pectoris (42%, n=42), heart failure (36%, n=36) and myocardial infarction (22%, n=22). The mean age of the patients was 60.16±12.07. The mean score of the State Anxiety Inventory was 49.34±3.62 and the mean score of the Trait Anxiety Inventory was 48.52±6.92 before the brochure. The mean score of State Anxiety Inventory was 41.34±4.57, and the mean score of Trait Anxiety Inventory was 48.04±7.12 after the brochure. The mean score of the State Anxiety Inventory was 39.26±3.67, the mean score of Trait Anxiety Inventory was 45.84±7.40 before the presentation. The mean score of State Anxiety Inventory was 39.14±3.95, the mean score of Trait Anxiety Inventory was 45.48±6.53 after the presentation. It was determined that the brochure reduced the state anxiety levels significantly (Z=-.921, p<0.05), but no effect was found on the trait anxiety levels (Z=-1.122, p>0.05). Presentation had no effect on the state/trait anxiety level (Z=-.870, p>0.05; Z=-.921, p<0.05), but no effect was found on the trait anxiety levels (Z=-1.122, p>0.05). however, oral presentation had no effect on the state/trait anxiety level (Z=-.870, p>0.05; Z=-.921, p>0.05). Presentation was determined to be more effective than brochure in increasing the knowledge levels.
Discussion and Conclusion: It was determined that the patients' anxiety levels were moderate and only state anxiety levels were decreased by the brochure significantly. Knowledge levels have increased by the training and especially presentation was found to be more effective than the brochure. So this situation has shown us that the knowledge levels are not origin of the anxiety. However, the other factors affecting anxiety should take into consider.

Cardiovascular nursing / Technician

OP-067

Exercise capacity and heart rate reserve of patients with normal angiographic coronary arteries, with and without metabolic syndrome

Pınar Çelebioğlu, Aydın Akyüz, Niyazi Güler

Namık Kemal University Faculty of Medicine, Tekirdağ

Introduction: The prevalence of metabolic syndrome gradually increases with obesity, diabetes and hypertension. Metabolic syndrome is one of the reasons for the development of an abnormal exercise response. However, a number of conflicting studies in the literature demonstrate whether a relationship exists between metabolic syndrome and heart rate reserve. Thus, in this study, we aimed to evaluate the values of heart rate reserve (%) and the beats per minute in individuals both with and without metabolic syndrome.
Materials and Method: The study included 80 patients with metabolic syndrome (31 males, mean aged 53.8±8.3 years) and 78 patients without metabolic syndrome (34 males, mean aged 51.5±9.6 years). The following data were obtained: demographics, abdominal circumference, body mass index (BMI), blood pressure, fasting blood glucose, urea, creatinine, serum triglyceride, total cholesterol, low-density lipoprotein cholesterol (LDL) and high-density lipoprotein cholesterol (HDL) levels. The exercise test was performed using the standard Bruce protocol. Heart rate reserve and heart rate recovery at the first minute during the recovery phase and the exercise capacity were calculated and recorded. PASW Statistics 18 software was used to analyse the data. Data with a value of p<0.1 were included in the univariate and the multivariate logistic regression analyses in order to detect the predictors of metabolic syndrome.
Results: In the variables between the two groups, no differences were present in age, gender, smoking, dyslipidemia ratio, blood urea, creatinine, uric acid, total cholesterol, LDL cholesterol, resting heart rate or peak heart rate (for all variables p>0.05). Compared to those without metabolic syndrome, patients with metabolic syndrome had a higher BMI, abdominal circumference, hypertension ratio, diabetes ratio, fasting glucose, serum triglyceride, uric acid, resting systolic blood pressure values (for all variables p<0.05) and lower HDL-cholesterol levels (p<0.001). The values of heart rate reserve beats per minute (62.5±18 vs 71±19.5 beats/ min, p=0.005), heart rate reserve percentage [19(3-66) vs 25.7 (4-96), p=0.002] and exercise capacity [8.5 (4.6-13.5) vs 10 (4.8-15.7), p=0.03] were lower in patients with metabolic syndrome compared to those without. According to the results of univariate and multivariate logistic regression analyses, fasting glucose (β±SE: 0.07±0.019, p<0.001), HDL cholesterol (β±SE: -0.114±0.036, p=0.02), serum triglyceride level (β±SE: 0.019 ±0.005, p<0.001), abdominal circumference (β±SE: 0.235±0.12, p=0.049) and resting systolic blood pressure (β±SE: 0.097±0.03, p=0.001) were fo
Discussion and Conclusion: Compared to those without metabolic syndrome, the patients with metabolic syndrome had a lower exercise capacity, heart rate recovery and heart rate reserve. However, decreased heart reserve was not a predictor for metabolic syndrome.

Cardiovascular nursing / Technician

OP-068

Marmara University students' knowledge about the effects of dietary habits on heart health

Sıdıka Oğuz, Nalan Çemçem, Aysel Gürkan

Marmara University Faculty of Health Sciences, İstanbul

Introduction: This study was carried to examine the dietary habits of Marmara University students and to examine the relationship between dietary habits and heart health.
Materials and Method: This research was carried definitively among the students studying at Marmara University Health Sciences and Social Sciences Departments. The research was completed with a questionnaire which was performed with 602 students. Percentage, frequency, mean, Chi-square test were applied for statistical analyses.
Results: 69% of subjects whose age average is 20.04±1.87 are females, and 63% of them study at Health Sciences Faculty. The study demonstrates that Health Sciences students consume much more additive foods than Social Sciences students (p=.03) and these students follow much more news about food and heart health (p<.0001) Females prefer whole-wheat bread and males prefer white bread for meals (p=.001). It was resulted that females prefer much healthier fats than males (p=.002). According to research, females follow many more news about food and heart health than males (p=.006) and males benefit omega-3 in a much more rate than females (p=.01). Most of the males add salt to the meals without checking it (p=.001) and they drink much more water than females (p=.003).
Discussion and Conclusion: Health Sciences students are nourished in a more unhealthy way, male students consume much more omega 3, salt, and water during meals. Females consume much more additive foods, they prefer whole wheat bread, and they drink much more milk. The most skipped meal was observed to be breakfast.

Cardiovascular nursing / Technician

OP-069

Effect of sad text on blood pressure

Sıdıka Oğuz, Betül Bayrak, Aslı Genç, Gülşah Camcı

Marmara University Faculty of Health Sciences, İstanbul

Introduction: The objective of this study was to determine as experimentally whether reading sad text increases blood pressure (BP) of individuals or not.
Materials and Method: 45 volunteer adults who had referred to public health center were included in this study between December-February 2015. Data of BP measurements and questionnaire were recorded. At first,subjects were taken into a quiet room and had a rest for five minutes in sitting position. Before reading sad text and BP was measured on the right arm. Then a sad text of 900 words was read by the volunteer and as soon as it was finished, BP was measured again. Data were analyzed with percentage, frequency, variance analysis, student's t-tests.
Results: Average age of individuals was 43.4±13.8, 55.6% of them were female and 35.6% had hypertension. Average systolic blood pressure (SBP) of first measurement was 123.11±5.58 mmHg, average diastolic blood pressure (DBP) was 75.44±5.07 mmHg. There was no difference when SBP values were compared before and after sad text reading for the subjects (p=.052). Increase of SBP was detected in individuals with age over 40 (p=.006), obesity (p=0.003), hypertension (p=.001) and family history of hypertension (p=.002). DBP elevated in individuals with hypertension (p =.005), family history of hypertension (p=.026) and obesity (p=.002).
Discussion and Conclusion: Sad test increases SBP of people at the age of 40 or over. It increases both SBP and DBP of individuals with obesity, Hypertension and family history for hypertension.

Valve diseases

OP-070

The effect of nurse home-support programme on self-management of the patients receiving oral anticoagulation (Warfarin) therapy

Jülide Gülizar Yıldırım, Ayla Bayık Temel

Ege University Faculty of Medicine, İzmir

Introduction: The aim is to determine the effect of nurse home-support programme on self-management of the patients receiving Warfarin therapy
Materials and Method: The study as a randomized controlled group trial were implemented by selected eligible 36 volunteer patients for 12 months home visiting in 2012-2014. The patients were randomized to either intervention (18 patients) or control group(18 patients) according to the age, type of illness and duration of illnesses. Data were collected using with HAS-BLEED bleeding risk score, Duke Anticoagulation Satisfaction Scale (DASS) and self-management behaviours form. The intervention group trained comprising three training sessions of 6 hours duration. We examined the bleeding risk scores,potential and preventable warfarin-related complications, patient self-management behaviors, and patients' satisfaction. Data were evaluated by regression, Wilcoxon signed-rank test,paired and independent samples t-tests, Mann-Whitney U, Friedman's test and Chi-square analysis.
Results: Mean age of the patients' was 62,27±12.36 (31-79 years), 47.2% of the participants were female.Intervention group patients' HAS-BLED bleeding scores showed higher risk bleeding (3.33±.49) in the pre-study period but at the end of the research HAS-BLED scores were decreased in this intervention group (2.0±.77). Intervention group has perceived general health status higher (4.06±.64) than the control group (2.39±.85) in the post-test.The mean score of the DASS was 66.3±22.4 in the intervention group and 94±25.7 in the control group at he end of the study, which represents a statistically significant improvement in the intervention group patient satisfaction at 12-month follow-up (p<.05). Linear regression analysis explained HAS-BLED bleeding score was effective variable to affect patient satisfaction (p<.05). Patients self-management behaviors (medication management, dietary management, self-testing of INR levels, self-monitoring of the complications) improved of the intervention group significantly than control group (p<.05). The number of INR values within the target range (2.5-3.5) was significantly higher in the intervention group (174/432) than the control group (82/432). Intervention group showed significant reductions in both thromboembolic events than control group. Intervention group resulted in fewer minor hemoragic events(4 patient), compared with control group (7 patient), but 1patient had stroke and 3 of them experienced major hemorrhagic events in controls.
Discussion and Conclusion: The study demonstrated evidence that the method of nursing home care has effective on developing self-management behaviors, improving the patient satisfaction and preventing to complications for the oral anticoagulation therapy patients.In this study,since that improving the self-management behaviors of the patients by getting their participation has significant outcomes comparing to the standard care methods,it was recommended that this model could be easily adopted and implemented by home care services and health organizations.

Cardiovascular nursing / Technician

OP-071

The effects of hospitalization process of breathing and coughing exercises held at regular periods in patients with acute myocardial infarction

Fatma Şahin

Bursa Yüksek İhtisas Training and Research Hospital, Bursa

Introduction: Despite current treatment strategies, in patients who come with Acute Myocardial Infarction (AMI) and they are hemodynamic ally stable and unstable, morbidity and mortality rate is stil high. Regular breathing exercises have the positive effects in cardio-pulmonary system. The aim of this study is determined the effects of hospitalization process of breathing and coughing exercises held at regular periods in patients with acute myocardial infarction.
Materials and Method: Working in February 2015 and May 2015. Coronary Intensive Care Unit (PUK is) was performed on 211 patients hospitalized from 587 patients (113 male, 98 female) with a meanage of 52.71±16.67. Work done by applying the techniques of qualitative research, the questionnaire was used tocollect data prepared. Hemodynamically stable (118 patients) and unstable (93 patients), two groups were created to be. Hemodynamic parameters group collected data from patient mobilization days, times and admission blood saturation values were recorded with in the unit.
Results: Working in an increase in blood saturation value after the breathing and coughing exercises are built on the basis of hemodynamic criteria of patients and positive changes have been observed, The analys is results and measurements with in the unit 2+0.5 days of hospitalization days and unit interior length of stay was found to be 2.8+0.6 days.
Discussion and Conclusion: Regular breathing and coughing exercises in intensive care patients have positive effects on cardio-respiratory system performance and this situation was observed with quantitative and qualitative data.

Arrhythmia / Electrophysiology / Pacemaker /CRT-ICD

OP-072

Validity and reliability of the Florida Patient Acceptance Survey and Florida Shock Anxiety Scale in Turkish patients with ICD

Havva Öz Alkan, Nuray Enç

İstanbul University Florence Nightingale Nursing Faculty, İstanbul

Introduction: The purpose of study was to examine the validity and reliability of the Florida Patient Acceptance Survey (FPAS) and the Florida Shock Anxiety Scale (FSAS) in a Turkish cohort of ICD patients.
Materials and Method: The sample included 180 participants (146 male, mean age=60.56±13.88). Patients completed the FPAS, the FSAS, the Beck Anxiety Inventory (BAİ), the State Anxiety Inventory (STAI-TX1) and Trait Anxiety Inventory (STAI-TX2).
Results: Confirmatory factor analysis (for FPAS) revealed that a four factor structure: Return to Function, Device-Related Distress, Pozitive Appraisal and Body Image Concerns (χ^2[84] = 157.75, p=0.00, comparative fit index = 0.91, root mean-square error of approximation = 0.07). Confirmatory factor analysis (for FSAS) revealed that a two factor structure with items loading such that Factor 1 could be conceptualized as a Consequence Factor and Factor 2 as a Trigger Factor (χ^2[34] = 81.48, p=0.00, comparative fit index = 0.93, root mean-square error of approximation = 0.09). The FPAS was negatively correlated with FSAS, BAI, STAI-TX1 and STAI-TX2 (p<0.01). The FSAS was positively correlated with BAI, STAI-TX1 and STAI-TX2 (p<0.01). We found satisfactory evidence of internal consistency (Cronbach's α was 0.81 for FPAS and Cronbach's α was 0.87 for FSAS).
Discussion and Conclusion: FPAS and FSAS are valid and reliable instruments to assess device acceptance and shock-related anxiety in Turkish ICD patients.

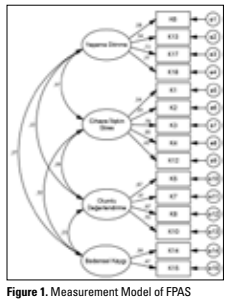


Figure 1. Measurement Model of FPAS

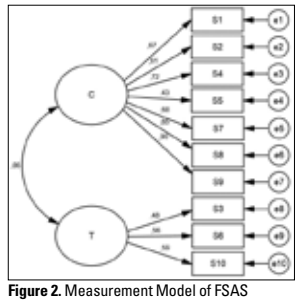


Figure 2. Measurement Model of FSAS

Epidemiology

OP-073

Stroke prevention strategies in non-valvular atrial fibrillation: results from RAMSES study

Özcan Başaran[1], Osman Beton[2], Volkan Doğan[1], Feyza Çalık[3], Yiğit Çanga[4], Aytekin Aksakal[5], Gökhan Göl[6], Serkan Gökaslan[7], Kadriye Memic Sancar[1], Cevat Kırma[8], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Cumhuriyet University, Faculty of Medicine, Sivas
[3]Mersin State Hospital, Mersin
[4]Kartal Yavuz Selim State Hospital, İstanbul
[5]Samsun Training and Research Hospital, Samsun
[6]Süreyyapaşa Chest Disease and Chest Surgery Training and Research Hospital, İstanbul
[7]Haydarpaşa Numune Training and Research Hospital, İstanbul
[8]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Atrial fibrillation (AF) associated stroke has a greater degree of disability and probability of recurrence than stroke due to other causes and risk of death is also doubled. To prevent stroke in patients with AF, antithrombotic treatment options include vitamin K antagonists (VKA) and non-vitamin K antagonist oral anticoagulants (NOACs). In this study, we aimed to investigate the clinical practice in patients with non-valvular atrial fibrillation (NVAF) in a large, multicenter, nationwide trial in Turkey.

Materials and Method: ReAl-life Multicenter Survey Evaluating Stroke prevention strategies in Turkey (RAMSES) is a prospective, observational study that was conducted in outpatient cardiology clinics. AF was classified as non-valvular in the absence of rheumatic mitral stenosis or valvular prosthesis. We enrolled a total number of 6273 patients in 57 participating sites. CHA_2DS_2VASc and HASBLED scores were calculated for all patients. Time in therapeutic range (TTR) was calculated for patients on warfarin therapy by two methods; traditional method: ratio of INRs in range to all measured INRs, and cross-sectional method: fraction of INRs in range to all measured INRs at one point in time.

Results: Anticoagulant therapy was prescribed for 4513 (72%) patients and 2173 (35%) patients were on warfarin therapy (Table). The mean TTR was 53% according to the traditional method and 51% with the cross-sectional method in patients who were on warfarin therapy. Antiplatelet therapy was chosen for 2010 (32%) patients. Stroke risk was low (CHA_2DS_2VASc score = 0) in 246 (4%) patients, intermediate (CHA_2DS_2VASc score = 1) in 533 (8%) patients, and high (CHA_2DS_2VASc score ≥2) in 5486 (88%) patients.

Discussion and Conclusion: Our study showed an apparent progression in stroke thromboprophylaxis in NVAF patients in our country. According to our findings, a rapid transition from warfarin to NOACs is remarkable. Although there is an improvement in mean TTR in Turkey, NOACs may be preferred to warfarin especially in patients with low TTR.

Table 1. Stroke prevention strategies

Stroke prevention strategy	N (%)
Anticoagulant therapy	4513 (72)
Non-vitamin K antagonist oral anticoagulants	2340 (37)
Dabigatran 150 mg	450 (7)
Dabigatran 110 mg	698 (11)
Rivaroxaban 20 mg	609 (10)
Rivaroxaban 15 mg	333 (5)
Apixaban 5 mg	203 (3)
Apixaban 2.5 mg	47 (1)
Warfarin	2173 (35)
TTR (cross-sectional)	51%
TTR (traditioanl method)	53%
No anticoagulant therapy	1716 (27)
Antiplatelet therapy	2010 (32)
Aspirin	1624 (26)
Clopidogrel	226 (4)
Prasugrel	2 (0.03)
Ticagrelor	3 (0.05)
Dual antiplatelet	155 (2)

Epidemiology

OP-074

Anticoagulation for non-valvular atrial fibrillation in the context of renal dysfunction: results from RAMSES study

Gurbet Özge Mert[1], Volkan Doğan[1], Özcan Başaran[1], Özgen Şafak[2], Sinan İnci[3], Bernas Altıntaş[4], Mehmet Balli[5], Oğuz Karaca[6], Savaş Çelebi[7], Beytullah Çakal[6], Kadir Uğur Mert[1], Aslı Tanındı[8], Kerem Temel[9], Cevat Kırma[10], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Burdur State Hospital, Burdur
[3]Aksaray State Hospital, Aksaray
[4]Diyarbakır Gazi Yaşargil Education and Research Hospital, Diyarbakır
[5]Mersin Toros State Hospital, Mersin
[6]İstanbul Medipol University, İstanbul
[7]Tobb Etu Hospital, Ankara
[8]Ufuk University Faculty of Medicine, Ankara
[9]Acıbadem Eskişehir Hospital, Eskişehir
[10]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Non-valvular atrial fibrillation (NVAF) is more likely to develop in patients with chronic kidney disease (CKD) than in individuals with normal renal function, and patients with CKD are more likely to suffer from thromboembolic events. In this study, we aimed to investigate the relationship of creatinine clearance (CrCl) and stroke prevention strategies in patients with NVAF.

Materials and Method: The ReAl-life Multicenter Survey Evaluating Stroke prevention strategies in Turkey (RAMSES) study was designed as a prospective, observational study and conducted in outpatient cardiology clinics. We enrolled a total number of 6273 NVAF patients in 57 sites, reflecting all the population of the 7 geographical regions of Turkey. Patients were excluded if they had valve replacement or mitral stenosis. Renal function for each patient was estimated based on baseline serum creatinine using the Cockcroft–Gault equation.

Results: Of the 6273 patients 5998 were selected for analysis. According to obtained data from Cockcroft–Gault formula, 1964 (33%) patients had renal impairment. Patients with renal impairment (CrCl <60 mL/min) were older and had more comorbidities compared to patients with CrCl ≥60 mL/min (Table). CHA_2DS_2VASc and HAS-BLED scores were higher in patients with renal dysfunction. However, patients with renal insufficiency were more likely to have the history of major bleeding and stroke. Result also showed that anticoagulants, especially warfarin, were underused in patients with renal impairment (Table).

Discussion and Conclusion: In a large cohort of patients with NVAF, we found that patients with at least moderate CKD had higher risk for previous history of stroke, and major bleeding compared to patients with CrCl ≥60 mL/min. Although CKD patients might benefit from more aggressive stroke prevention strategies they are undertreated due to fear of bleeding.

Table 1. Patient characteristics

	eGFR <60 mL/min	eGFR ≥60 mL/min	P value
Male (n,%)	721 (34.8)	1913 (46.7)	<0.001
Age (mean±SD)	75.9±8.6	66.2±10.2	<0.001
Smoker (n,%)	239 (11.5)	733 (18.7)	<0.001
COPD (n,%)	543 (26.2)	838 (21.4)	<0.001
Atrial fibrillation type (n,%)			<0.001
First attack	74 (3.6)	211 (5.4)	
Paroxysmal	202 (9.7)	640 (16.3)	
Persitant or permanent	1796 (86.7)	3058 (78.3)	
Coronary heart disease (n,%)	657 (31.7)	1083 (27.6)	0.001
Congestive heart failure (n,%)	546 (26.4)	742 (18.9)	<0.001
Hypertension (n,%)	1478 (71.4)	2640 (67.3)	0.001
Diabetes Mellitus (n,%)	441 (21.3)	911 (23.2)	0.049
CHA_2DS_2VASc score (mean±SD)	3.9±1.5	2.9±1.5	<0.001
HAS-BLED score (mean±SD)	2±1	1.4±1	<0.001
Anticoagulant therapy (n,%)			0.006
NOAC	769 (37.2)	1478 (37.7)	
Warfarin	680 (32.9)	1413 (36)	
No anticoagulant therapy	619 (29.9)	1033 (26.3)	
History of major bleeding (n,%)	142 (6.9)	199 (5.1)	0.005
History of stroke (n,%)	336 (16.3)	462 (11.8)	0.001

Epidemiology

OP-075

Differences in the epidemiology and management of non-valvular atrial fibrillation among geographical regions in Turkey: insights from the RAMSES Study

Volkan Doğan[1], Özcan Başaran[1], Osman Beton[2], Ahmet Çağrı Aykan[3], Fatma Özpamuk Karadeniz[4], Gökhan Aksan[5], Serdar Bozyel[6], Kadriye Akay[7], Tahir Bezgin[8], Ulaankhu Batgharel[9], Durmuş Yıldıray Şahin[10], Vehip Keskin[11], Cevat Kırma[12], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Cumhuriyet University, Faculty of Medicine, Sivas
[3]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[4]Şanlıurfa Balikligol State Hospital, Şanlıurfa
[5]Şişli Etfal Training and Research Hospital, İstanbul
[6]Kocaeli Derince Training and Research Hospital, Kocaeli
[7]Kocaeli State Hospital, Kocaeli
[8]Gebze Fatih State Hospital, Kocaeli
[9]Acıbadem Kadikoy Hospital, İstanbul
[10]Adana Numune Training and Research Hospital, Adana
[11]Muğla Private Cardiology Clinic, Muğla
[12]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: This study aimed to collect data regarding the demographic and clinical features, comorbid factors, and stroke prevention strategies in patients with non-valvular atrial fibrillation (NVAF) among 7 geographical regions.

Materials and Method: A total number of 6273 patients were included in the prospective, observational RAMSES (ReAl-life Multicenter Survey Evaluating Stroke prevention strategies in Turkey) study. The demographic features, clinical and laboratory features, and comorbid conditions including obesity, diabetes mellitus, hyperlipidemia, hypertension, and coronary heart disease, and clinical risk scores were noted in a standard questionnaire. Antithrombotic management strategies were also noted. The patients were divided into 7 groups according to the region of the location.

Results: The highest number of patients were enrolled from the "Marmara" (1677, 26.7%) and "Central Anatolia" regions (1024, 16.3%) in reflect of the population distribution. Age, demographics, thromboembolic and bleeding risk scores were significantly different in patients living 7 geographical regions of Turkey (Table). Preferred oral anticoagulants were also different among geographical regions; non-vitamin K antagonist oral anticoagulants (NOACs) are preceded warfarin in East Anatolia, Aegean, Southeast Anatolia and Black Sea regions.

Discussion and Conclusion: The multicenter RAMSES study included patients from different geographic areas of Turkey with different cultural habits and lifestyles. This study showed for the first time that the demographic differences among the regions may cause different stroke prevention strategies in our country.

Table 1. Patient characteritics among geographical regions

	MEDITERRANEAN 796 (12.7%)	EAST ANATOLIA 662 (10.6%)	AEGEAN 745 (11.9%)	SOUTHEAST ANATOLIA 462 (7.4%)	CENTRAL ANATOLIA 1024 (16.3%)	BLACK SEA 907 (14.5%)	MARMARA 1677 (26.7%)	P value
Age	70.74 ±10.43	70.8 ±9.36	72.2 ±10.44	70 ±10.37	68.74 ±10	68.2 ±10.38	68.5 ±11.78	0.001
Male	356 (44.7)	326(49.2)	320(43)	187(40.5)	385(37.6)	408(45)	787(46.9)	0.001
Smoking (%)	109(13.7)	146(22.1)	79(10.7)	100(21.6)	152(14.8)	190(20.9)	246(14.7)	0.001
Place of residence								
Rural	435(54.6)	292(47.7)	427(57.3)	199(43)	196(19.1)	352(38.8)	253(15.1)	0.001
Urban	361(45.4)	318(52.3)	310(42.1)	262(57)	828(80.9)	555(61.2)	1417(84.5)	
Chronic obstructive pulmonary disease (%)	179(22.5)	221(33.7)	212(29.2)	137(29.7)	212(20.7)	154(16.9)	334(19.8)	0.001
Coronary heart disease	281(35.3)	215(32.8)	157(21.1)	158(34.2)	331(32.4)	275(30.3)	411(24.5)	0.001
Congestive heart failure	188(23.6)	142(21.5)	160(21.5)	168(36.4)	204(19.9)	204(22.5)	320(19.2)	0.001
Hypertension	646(81.2)	490(74.1)	556(74.8)	268(58.1)	730(71.4)	519(57.2)	1096(65.4)	0.001
Diabetes Mellitus	179(22.5)	149(22.5)	154(20.8)	71(15.4)	281(27.4)	192(21.2)	369(22)	0.001
Stroke/Transient ischemic attack	103(13)	122(18.6)	120(16.1)	43(9.4)	78(7.6)	112(12.3)	257(15.4)	0.001
Vascular disease	198(25.5)	196(29.6)	166(22.4)	139(30.1)	219(21.4)	249(27.5)	339(20.1)	0.001
Bleeding history								0.001
Major	38(4.8)	25(3.8)	25(3.4)	17(3.7)	73(7.2)	61(6.7)	66(4.1)	
Minor	184(23.2)	104(15.7)	95(12.9)	46(10)	262(25.9)	146(16.3)	213(13.1)	
Anticoagulant								
NOAC	192(24.2)	214(33.4)	333(44.8)	135(29.2)	280(27.7)	601(66.3)	585(35)	0.001
Warfarin	287(36.1)	117(18.3)	233(31.4)	91(19.7)	609(60.2)	125(13.8)	715(42.8)	
CHA_2DS_2-VASc	3.46 ±1.47	3.47±1.53	3.53±1.53	3.29 ±1.46	3.22 ±1.57	3.11± 1.62	3.15 ±1.09	0.001
HASBLED	1.71 ±0.98	1.95 ±1.12	1.75 ±0.91	1.7± 1.03	1.8± 1.31	1.7 ±1.12	1.64 ±1.08	0.001

Epidemiology

OP-076

Time in therapeutic range in real-life multicenter survey evaluating stroke prevention strategies in Turkey (RAMSES) study

Özcan Başaran[1], Volkan Doğan[1], Mehmet Tekinalp[2], Onur Taşar[3], Sinan İnci[4], Vahit Demir[5], Tahir Bezgin[6], Ali Ekber Ata[7], Emrah Ermiş[8], Kadriye Memic Sancar[1], Cevat Kırma[9], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Kahramanmaraş Necip Fazil State Hospital, Kahramanmaraş
[3]Elazığ Training and Research Hospital, Elazığ
[4]Aksaray State Hospital, Aksaray
[5]Yozgat State Hospital, Yozgat
[6]Gebze Fatih State Hospital, Kocaeli
[7]Medical Park Hospital, Samsun
[8]Erzurum Regional Training and Research Hospital, Erzurum
[9]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Atrial fibrillation (AF) is the most common arrhythmia that may cause cardioembolic stroke. The most efficacious drugs to prevent patients from this devastating complication are oral anticoagulants. Warfarin was the only available drug in this category for decades. Measurement of time in therapeutic range (TTR) which is a good indicator of the quality of warfarin therapy is recommended on warfarin therapy. Strict international normalized ratio (INR) measurement and follow-up of the patient is also essential in these patients. We aimed to analyse the association among TTR values and parameters that may influence TTR.

Materials and Method: RAMSES study is as a prospective, observational study which was conducted in out-patient cardiology clinics. A total number of 6273 consecutive, non-valvular AF patients were included. We analysed 2173 patients who were on warfarin therapy for the subgroup analysis. TTR was calculated using the traditional method (fraction of the effective INRs to all measured INRs). CHA_2DS_2VASc and HAS-BLED scores were recorded. A new score SAMeTT2R2 (sex female, Age>60 years, medical history, amiodarone for rhythm control, tobacco use [doubled], race [doubled]) which was shown to be a good predictor of TTR was also recorded.

Results: Of the 2173 patients, the mean TTR was 53%. Correlation analysis showed a statistically significant negative correlation among TTR, CHA_2DS_2VASc, HAS-BLED score and age (r=-0.101 p<0.001, r=-0.307 p<0.001, r=-0.145 p<0.001 respectively). However, there was no correlation between TTR and SAMeTT2R2 (Figure).

Discussion and Conclusion: Our study showed that HAS-BLED score might be a good indicator of TTR. We could not validate the SAMeTT2R2 score which is recommended to evaluate patients whether they benefit from warfarin therapy or not. Our results pointed out that non-vitamin K antagonist oral anticoagulants were preferred for elder patients with high CHA_2DS_2VASc or HAS-BLED score.

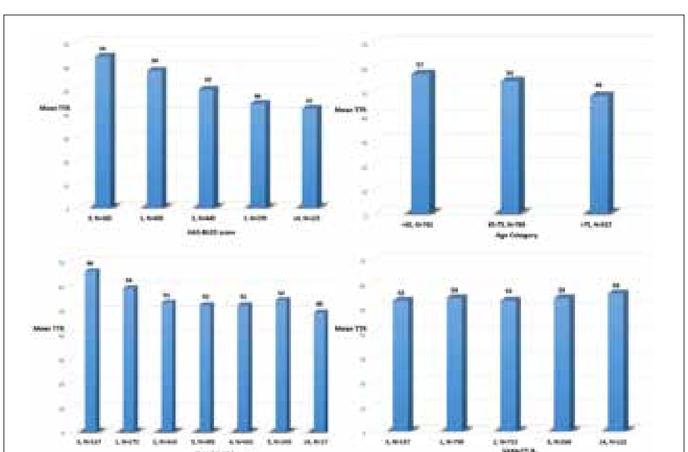


Figure 1. Correlations

Epidemiology

OP-077

Oral anticoagulant use in patients with renal disease: results from RAMSES study

Kadir Ugur Mert[1], Volkan Doğan[1], Özcan Başaran[1], Ahmet Çağrı Aykan[2], Mehmet Yaman[3], Bernas Altıntaş[4], Yasin Çakıllı[5], Mustafa Ozan Gürsoy[6], Oğuz Karaca[7], Savaş Çelebi[8], Adnan Kaya[9], Gurbet Özge Mert[1], Özkan Candan[10], Kamuran Tekin[11], Cevat Kırma[12], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[3]Samsun Training and Research Hospital, Samsun
[4]Diyarbakır Gazi Yaşargil Education and Research Hospital, Diyarbakır
[5]Tuzla State Hospital, İstanbul; [6]Gaziemir State Hospital, İzmir
[7]İstanbul Medipol University, İstanbul; [8]Tobb Etu Hospital, Ankara
[9]Suruç Governtment Hospital, Şanlıurfa; [10]Uşak State Hospital, Uşak
[11]Batman State Hospital, Batman
[12]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: The presence of chronic kidney disease (CKD) is associated with increased risk of atrial fibrillation (AF). Patients with AF are at greater risk for cardioembolic events and the risk further increases with the presence of CKD. The most effective stroke prevention therapy, oral anticoagulation (OAC), may be less chosen because of fear of bleeding in patients with CKD and AF. In this study, we aimed to investigate the use of OAC therapies in patients with renal impairment and AF.

Materials and Method: ReAl-life Multicenter Survey Evaluating Stroke Prevention Strategies in Turkey (RAMSES) study was a prospective, observational study that was conducted in outpatient cardiology clinics and included patients with non-valvular AF. Demographic properties, laboratory examinations and medical therapies were recorded for 6273 patients in the study. Patients with CKD in RAMSES study were selected for analysis. Creatinine clearance (CrCl) was calculated by Cockroft-Gault formula and 1172 patients (18.6%) with CrCl lower than 60 ml/min were included in this subgroup analysis.

Results: Of the 1172 patients, 424 patients (40.4%) were using vitamin K antagonist (VKA), 383 patients were using non-vitamin K antagonist oral anticoagulants (NOACs) and 375 patients were not on OAC therapy. Patients with renal impairment had less OAC prescription if they were older, live in rural area, and illiterate. Although patients with renal impairment had more comorbid diseases and higher CHA_2DS_2VASc scores they were less prescribed anticoagulants.

Discussion and Conclusion: Our results showed a special attention should be given to patients with renal impairment in patients with non-valvular AF.

Table 1. OAC therapies among renal impairment patients

	VKA (n=414)	NOAC (n=383)	No oral anticoagulant (n=375)	P value
Male (%)	123 (32.1)	120 (29)	123 (32.1)	0.55
Age (mean±SD)	77.9±8.8	75.7±9	79 ±7.1	0.001
Residence (rural) (%)	128 (33.1)	126 (30.5)	237 (63.2)	0.001
Education (illiterate) (%)	135 (35.3)	142 (34.3)	236 (62.9)	0.001
Comorbidities (%)				
Congestive heart failure	103 (26.9)	91 (22)	130 (34.7)	0.001
Hypertension	276 (72.4)	292 (70.1)	281 (74.9)	0.383
Diabetes mellitus	85 (22.2)	84 (20.4)	78 (20.8)	0.810
Coronary artery disease	127 (33.2)	93 (22.5)	150 (40.1)	0.001
COPD	98 (25.6)	89 (21.5)	139 (37.1)	0.001
Antiplatelet therapy (%)	90 (23.6)	59 (14.3)	270 (72.2)	0.001
Creatinine Clearance (mean±SD)	39.1±8.8	40.4±7.9	39.5±8.5	0.084
Creatinine (mean±SD)	1.5±0.8	1.3±0.7	1.4±0.7	0.001
History of Bleeding (%)				
Major Bleeding	42 (11)	38 (10.3)	38 (10.3)	0.002
Minor bleeding	134 (35. 1)	57 (13.8)	75 (20.2)	0.001
History of Stroke (%)	70 (18.3)	80 (19.3)	54 (14.5)	0.175
CHA_2DS_2VASc score (mean±SD)	3.9 ±1.6	4 ±1.4	4.2±1.3	0.051
HAS-BLED score (mean±SD)	2.2 ±1.3	1.8 ±0.9	2.5±1.1	0.001

Epidemiology

OP-078

The clinical and angiographic profile of coronary artery fistulas in a large group of patients who underwent coronary angiography

Sebahat Tekeli Şengül[1], Özcan Özeke[2], Hüseyin Ayhan[3], Ahmet Korkmaz[4]

[1]Gazi Mustafa Kemal Hospital, Ankara
[2]Türkiye Yüksek İhtisas Hospital, Ankara
[3]Ankara Atatürk Education and Research Hospital, Ankara
[4]Çankırı State Hospital, Çankırı

Introduction: Coronary artery fistulas (CAFs) are defined as abnormal communications between a coronary artery and a cardiac chamber or major vessels, such as the vena cava, right or left ventricle, pulmonary vein, or pulmonary artery.

Materials and Method: In this study 18.106 patients, who had undergone coronary angiography between January 2011 and June 2013, were screened retrospectively.

Results: We detected CAFs in 23 patients, 13 male (57%) and 10 female (43%), aged between 41-73 years (mean age 53.7±12.5). A total of 27 fistulas were detected in 23 patients; angiografic prevelance was 0,14%. Four patients (17%) had bilateral fistulas; 2 were originating from both left coronary artery (LAD) and right coronary artery (RCA), one was orginating RCA and circumflex artery (Cx), one was orginating LAD and Cx. Angina pectoris was the most common symptom (n=17, 74%), dyspnea was the second symptom (n=6, 26%).

Eleven patients (%47.8) had coronary artery disease, one of them presented with acute coronary syndrome. There were three patients with concomitant muscular bridge, one patient with heart failure, one patient with severe mitral valve regurgitation. There was detected normal coronary arteries on 12 patients (52%). CAFs were orginated mainly from LAD (n=14, 52%). Others were orginating from RCA (n=7, 26%) and Cx (n=6, 22%). CAFs were mainly drained into pulmonary artery (n=15, 55%). Others were drained into left ventricle (n=4, 15%), right ventricle (n=4, 15%), left atrium (n=1, 4%) and right atrium (n=3, 11%).
Discussion and Conclusion: In our study population we found angiografic prevelance of CAFs %0,12, most common symptom was angina. CAFs were mainly orginate from LAD, and mainly drained into pulmonary artery.

Interventional cardiology / Structural heart and valve diseases

OP-079

The effects of high-sensitive troponin T levels in the patients who underwent TAVI on the development of major advers cardiovascular

İlker Gül[1], Mustafa Zungur[1], Ahmet Taştan[1], Ertan Damar[2], Mehmet Beşir Akpınar[2], Ahmet Feyzi Abacılar[2], Muhammed Esad Çekin[1], Faik Fevzi Okur[2], Hekim Karapınar[1], Nevzat Uslu[1], Talat Tavlı[1]

[1]Şifa University Faculty of Medicine, İstanbul
[2]Şifa University Hospital, İzmir

Introduction: Transcatheter aortic valve replacement (TAVI) has become an important treatment method in the treatment of inoperable or high risk patients with severe aortic stenosis. Several studies have clarified that high-sensitive troponin-T (hs-TnT) is a marker to indicate mortality of cardiovascular diseases. In this study we aimed to evaluate the relationship between hs-TnT levels and major cardiovascular events (MACE) after TAVI.
Materials and Method: We included 114 consecutive patients undergoing TAVI (Edwards Sapien XT prostheses) at our institution from June 2013 until April 2015. We defined MACE as composite events of myocardial infarction, heart failure, stroke and cardiovascular death. Patients were divided into two groups according to the coronary artery disease Sixty seven patients were included in coronary artery disease (CAD) group and 47 patients were in non-CAD group.
Results: We studied 114 patients (aged 78.1±7.2 years) of whom 59 (51.8%) were female. MACE occured in 22 patients (19.3%). The patients who had MACE were higher in CAD group (n=17, 25.7% vs n=5, 10.6%, p=0.040). Hs-TnT levels before TAVI were similar (61.6±35.3 ng/dl vs 38.2±22.7 nd/dl, p=0.105) and first day after TAVI (176.3±67.9 ng/dl vs 249.9±156.7 ng/dl, p=0.001) were higher in CAD group. Kaplan-Meier curve revealed a statistically significant difference in MACE rate among the groups (log-rank test, χ^2=11, p=0.025). We conducted a cox analysis with a model including age, gfr, logistic euroscore, CAD, hs-TnT levels first day after TAVI as explanatory variables to predict MACE.
Discussion and Conclusion: In conclusion, elevated hsTNT the day before TAVI is an independent risk predictor of MACE in TAVI patients (hazard ratio; 3.2, p=0.017). CAD to be a signicicant factor to predict MACE for patients with AS after valve replacement after TAVI.

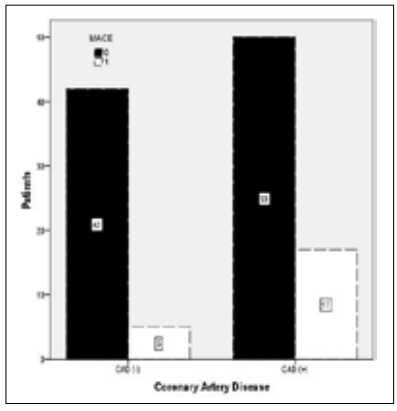


Figure 1. Coronary artery disease and MACE after TAVI

Interventional cardiology / Structural heart and valve diseases

OP-080

Long term follow-up of first TAVI cases in Turkey

Genco Yücel[1], Tufan Paker[2], Alpaslan Eryılmaz[1], Ali Sezer[1], Alpay Sezer[1], Tolga Özyiğit[1], Erdoğan Aygar[1], Recep Bozlak[1], Müjdat Babadostu[1], Atıf Akcevin[3]

[1]VKV American Hospital, İstanbul
[2]Viranşehir State Hospital, Şanlıurfa
[3]İstanbul Medipol University, İstanbul

Introduction: First ever TAVI cases in Turkey were performed in our hospital on May 25th 2009. We like to report the long term clinical and echocardiographic follow-up of early patients who underwent successful TAVI in our institution.
Materials and Method: We included patients who underwent TAVI and discharged from the hospital following the intervention. We included cases which were performed in our institution between May 25th 2009 and July 6th 2011 with minimum follow-up of 4 years. For the patients who continued to be seen in our hospital, the data was collected from the hospital records. Other patients were contacted by phone or the patients' information was reached via government population records. Patients' clinic information, echocardiographic findings are reported from the official reports.
Results: Between May 25th 2009 and July 6th 2011 total of 35 patients underwent TAVI in our hospital. 16 patients were male and the average age was 80.8 (65-95). 16 Sapien, 18 Sapien XT (Edwards Lifesciences Inc USA), and 1Corevalve (Medtronic Inc USA) were implanted. 30 patients who were discharged were enrolled in our study. Records of 25 patients were available. Out of 30 patients, we confirmed 17 patients to be alive and well after an average of 5 years of follow-up (47-73 months), including the first ever patient who had TAVI in Turkey. Overall survival rate is 48.5%, and survival after discharge is 56.6%. None of the patient was shown to have valvular malfunction or deterioration resulting in death. 2 patients had sudden cardiac death, which was thought to be secondary to coronary or rhythm problems. Other causes of death were reported to be stroke related in 2, hemato-oncologic problem in 2, end stage liver disease in 1, and end stage pulmonary problem in 1 patient. Echocardiographic early follow-up was available in all patients who were discharged. Before and after TAVI EF values were 52.6% (20-66) and 58.6% (30-70). mean aortic valve gradient was 40.6 mmHg (23-53) and 13.5 mmHg (5-23), aortic valve area was 0.64 cm^2 (0.40-0.84) and 1.86 cm^2 (1.40-2.60), and PA pressures were 51.4 mmHg (26-79) and 42.2 mmHg (28-63). 27 patients had 0-1+, the rest had 2+ aortic regurgitation. 7 patients had 2-3+ mitral regurgitation post TAVI. In late echocardiographic follow-up there was no significant change in aortic valve area and valve gradient in all these patients with an average echocardiographic follow-up of 5 years. There was one patient with worsening aortic regurgitation and two with worsening mitral regurgitation. Overall EF was also preserved in these patients. Two patients required permanent pacemaker implantations, 12 and 48 month following the implantations.No other cardiac intervention was necessary.
Discussion and Conclusion: We report longest follow-up of TAVI in our country. In this earliest experiences in Turkey survival was close to 50% with an average of 5 years follow-up. In the patients who was followed echocardiographically, there was no sign of prosthetic deterioration in 5 years.

Interventional cardiology / Structural heart and valve diseases

OP-081

A large registry of TAVI with two types of bioprosthetic valves: high procedural success with low rates of complications

Hüseyin Dursun[1], Züleyha Tanrıverdi[2], Tuğçe Çöllüoğlu[1], Abidin Cenk Erdal[1], Dayimi Kaya[1]

[1]Dokuz Eylul University, Faculty of Medicine, İzmir
[2]Idil State Hospital, Şırnak

Introduction: Our aim is to present our three-years of experience with TAVI which is a recently developing therapy in our country by demonstrating baseline characteristics of the patients, complications related to the procedure and the clinical outcomes. To the best of our knowledge this is the largest registry of TAVI including two types of bioprosthetic valves in our country.
Materials and Method: We examined 93 (59 women) patients with severe AS who underwent TAVI in our clinic between June 01, 2012 and June 12, 2015. Either CoreValve (Medtronic Inc., Minneapolis, MN) (65.5%) or Edwards Sapien XT (Edwards Lifesciences, Irvine, CA) (34.5%) bioprosthetic valves were implanted by transfemoral route to all patients.
Results: The mean age of the patients was 78.8±6.8 (range 55-91 years) with a mean logistic Euroscore of 33.3± 13.9; and STS score of 7.7±4.6. 77.4% of patients had coexisting HT, 28% had DM, 38.7% had COPD, and 21.5% had previous coronary bypass surgery. Mean aortic valve area was 0.5±0.1 cm^2, and aortic valve gradients were 75.2±17.1 mmHg (maximal) and 47.1±11.4 mmHg (mean). Femoral arterial access was achieved by surgical cut down in 79 (84.9%) patients, and percutaneous (Prostar XL) in 10 (10.8%) patients. The rate of successful implantation of bioprosthesis was 100%. Only six (6.4%) patient loss our follow-up. Three patients (3.2%) had malapposition of bioprosthesis into left ventricle and required a second valve (CoreValve) implantation. Stroke occurred only in 1 (1.0%) patient who had a second CoreValve bioprosthesis due to malapposition of the first bioprosthesis. Two patients (2.1%) had cardiac tamponade and treated with emergent pericardiocentesis. Vascular complication of femoral artery occurred in 15 (16.1%) of the patients (Prostar XL was used in 4 and surgical cut down in 11 of these patients). Eleven (11.8%) patients need permanent cardiac pacemaker after TAVI (7 patients treated with CoreValve, 4 patients with Edwards Sapien). Four (4.4%) patients had paravalvular aortic regurgitation of ≥2 degree after TAVI. Ventricular septal defect which is a rare complication after TAVI occurred in 1 of the patients treated with Edwards Sapien XT bioprosthesis. There was no mortality during the procedure, and at the 1 month follow-up period. The total mortality rate was 12.9% (12 pts). (One cardiac death and 11 deaths due to noncardiac causes -pneumonia, renal failure, mesenteric ischemia, pancreas tumor, head trauma). Two-years of mortality that can be calculated in 42 patients was 7.5% (7 pts).
Discussion and Conclusion: We presented our three-years of TAVI registry with two types of bioprosthetic valves. The high procedural success and low rate of complications are consisted with previous studies. However we also demonstrated lower requirement of permanent pacemaker in CoreValve procedures (11.4%) probably due to high implantation technique, very low stroke rates (1.0%) and close follow-up of the patients with low rates of mortality.

Interventional cardiology / Structural heart and valve diseases

OP-082

Transcatheter aortic valve implantation with CoreValve prosthesis: initial Hacettepe experience of 85 high surgical risk patients with severe aortic

Levent Şahiner, Serkan Asil, Uğur Canpolat, Cem Çoteli, Hikmet Yorgun, Ergün Barış Kaya, Banu Evranos, Ali Oto, Necla Özer, Kudret Aytemir

Hacettepe University Faculty of Medicine, Ankara

Introduction: Transcatheter aortic valve implantation (TAVI) has become an important interventional option for severe aortic stenosis in patients who are deemed inoperable or at high surgical risk. In this study, we aimed to present our single tertiary center experience with the Medtronic CoreValve prosthesis (CVP).
Materials and Method: A total of 85 patients (61.2% female, mean age: 77±9.1 years) who underwent transfemoral CVP implantation in between February 2013 and June 2015 at our clinic were enrolled. All pre- and post-procedural data was collected from the hospital registry and procedural notes. Statistical analysis

was performed using SPSS.
Results: Of all the patients, 54.1% had coronary artery disease, 30.6% had chronic obstructive pulmonary disease, 29.4% had diabetes mellitus and 16.5% had chronic kidney disease. Mean STS and EuroScore predicting risk of mortality and morbidity were 9.24±3.5% and 29.5±16.4%. Pre-procedural mean aortic valve orifice area was 0.68±0.14 cm^2 (range 0.4–1) and mean/peak transaortic pressure gradients were 46±13.5/78.1±21.5 mmHg, respectively. The procedural success rate was 100% and this was confirmed by echocardiographic measurement of the transvalvular gradient. Post-procedural transaortic mean gradient was significantly reduced to 6.6±5.6 mmHg (p=<0.001). Furthermore, NYHA functional class (3.1±0.6 vs 1.4±0.8, p<0.001) and aortic regurgitation (1.15±0.7 vs 0.78±0.7, p<0.001) were also improved significantly following CVP implantation. There was no mortality during CVP implantation procedure. However, 3 patients died during the hospital stay of index procedure (in-hospital mortality rate of 3.5%) due to severe aortic and mitral regurgitation in one and sepsis in two patients. Also, a total of 14 patients (16.5%) underwent permanent PM implantation post-TAVI; 2 patients (2.35%) suffered from minor stroke without sequelae; vascular complications were observed in 3 (3.5%) patients and 2 patients (2.35%) developed cardiac tamponade during the periprocedural period which have been successfully managed with surgical drainage.
Discussion and Conclusion: Our study describes the favourable outcome and reasonable complication rates in the first 85 patients treated with transcatheter CoreValve prosthesis implantation at our institution. We reported a procedural success rate of 100% and mortality rate of 3.5% during index hospitalization and low permanent PM implantation rate (16.5%).

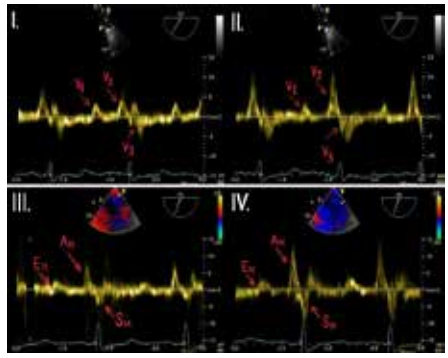


Figure 1. Effects of TAVI on LAA. TEE: PW Doppler and TDI parameters

Interventional cardiology / Structural heart and valve diseases

OP-083

Predictors of permanent pacemaker requirement after transcatheter aortic valve implantation with self-expanding CoreValve prosthesis: insights from a Turkish registry

Serkan Asil, Levent Şahiner, Uğur Canpolat, Hikmet Yorgun, Nihan Bahadır, Ergün Barış Kaya, Banu Evranos, Ali Oto, Necla Özer, Kudret Aytemir

Hacettepe University Faculty of Medicine, Ankara

Introduction: Development of new conduction abnormalities that lead to the requirement for new permanent pacemaker implantation (PPI) has been reported to be the most frequent complication following TAVI. However, the reasons and clinical significance of TAVI-induced conduction disturbances and PPI are yet to be fully clarified. The aim of this study was to assess the predictors of PPI after TAVI with the Medtronic CoreValve prosthesis (CVP).
Materials and Method: A total of 85 patients (61.2% female, mean age: 77±9.1 years) who underwent transfemoral CVP implantation in between February 2013 and June 2015 at our clinic were enrolled. All pre- and post-procedural data was collected from the hospital registry and procedural notes. Predictors of requirement for PPI were analyzed.
Results: The overall incidence of PPI was 16.5% (14 patients). In 2 of the cases (14.3%), the first documented episode of high-degree AVB occurred after hospital discharge. Patients requiring PPM had higher baseline STS (11.21 vs. 8.85, p=0.02) and logistic Euroscore (38.21 vs. 27.81, p=0.03), and have higher rate of baseline right bundle branch block (RBBB, 21.4% vs. 0%, p<0.001). While 7 (8.2%) patients had baseline left bundle branch block (LBBB), 18 patients developed new onset LBBB just after TAVI. On multivariable analysis, baseline RBBB (OR, 5.48; 95% CI, 2.84-9.12; p<0.001) and baseline STS score (OR, 1.36; 95% CI, 1.07-1.73; p=0.013) were independent predictors of PPI. Moreover, prosthesis size and depth were found as significant predictors of new onset LBBB.
Discussion and Conclusion: Permanent PM implantation occurred in approximately one-sixth of cases. Pre-existing RBBB and higher baseline STS score were independent predictors of PPI after TAVI using the self-expanding CoreValve prosthesis.

Interventional cardiology / Structural heart and valve diseases

OP-084

Short-term effects of transcatheter aortic valve implantation on left atrial appendage function

Serkan Aslan[1], Mehmet Gül[1], Hüseyin Altuğ Çakmak[2], Aydın Yıldırım[1]

[1]Mehmet Akif Ersoy Chest and Cardiovascular Surgery Education and Research Hospital, İstanbul
[2]Rize Kaçkar State Hospital, Rize

Introduction: The beneficial effects of Transcatheter aortic valve implantation (TAVI) on echocardiographic parameters including left atrial (LA) and left ventricular (LV) functions were described by previous studies. The aim of this study was to analyze the effects of TAVI on left atrial appendage (LAA) function assessed by Pulse Wave (PW) Doppler and Doppler Tissue Imaging (DTI) transthoracic echocardiography (TTE) and transesophageal echocardiography (TEE) in patients with AS.
Materials and Method: Fifty-five patients with symptomatic severe AS who underwent TAVI were included in this prospective study. To study LAA function, LAA early-late emptying and filling velocities were measured by PW Doppler, and LAA early diastolic (EM), late diastolic (AM), and systolic (SM) velocities were measured by DTI, and E/Em ratio was calculated before and 7.1±2.8 days after TAVI implantation using the Edwards Sapien prosthesis. A subgroup analysis was done according to the patient's left ventricular ejection fraction (LVEF) (<50% or >50%) and the severity of their left ventricular diastolic dysfunction (E/Em of >15 and E/Em of <15).
Results: The post-procedure peak and mean gradients of the patients decreased significantly, the LVEF increased significantly in the patients who had a low LVEF before the procedure. Furthermore, the post-procedure E/Em ratio decreased significantly (p<0.001). The post-procedural LAA mean filling velocity was significantly higher than the pre-procedural filling velocity (p<0.001). In the DTI analysis, the increase in the velocity of the EM after the TAVI procedure was significantly higher (p=0.002). In the subgroup analysis, the post-procedural LAA filling velocity and LAA emptying velocity, in addition to the mean velocity of the EM, AM, and SM were significantly higher than before the procedure in patients with a LVEF of <50% and an E/Em ratio of >15.
Discussion and Conclusion: LAA function improved soon after the TAVI procedure, especially in patients with a low LVEF and marked LV diastolic dysfunction.

Heart failure

OP-085

Usefulness of Cystatin-C and kidney injury molecule-1 in prediction of occurance and reversibility of acute kidney injury in acute heart failure

Eser Açıkgöz[1], Sadık Kadri Açıkgöz[2], Murat Özilhan[1], Mustafa Candemir[1], Gökhan Gökalp[1], Özge Çakmak[1], Serdar Nurkoç[1], Ajar Koçak[1], Özlem Gülbahar[1], Hüseyin Murat Özdemir[1]

[1]Gazi University Faculty of Medicine, Ankara
[2]Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: Acute kidney injury (AKI) is frequently encountered during the course of heart failure (HF) and it is associated with poor prognosis. Creatinine is a delayed indicator of AKI and novel biomarkers may detect the acute kidney injury in an earlier stage. Previous studies showed that kidney injury molecule-1 (KIM-1) and cystatin C can detect AKI within first 24 hour. However, it is not known whether these novel biomarkers are useful in predicting the reversibility of kidney injury. The aim of the present study is to evaluate the predictive value of admission serum cystatin C and urine KIM-1 levels in development and reversibility of AKI and association of change in serum cystatin C and urine KIM-1 levels in 24 hours with reversibility of AKI in patients hospitalized for acute decompensated heart failure (ADHF).
Materials and Method: 45 consecutive patients hospitalized for ADHF were prospectively enrolled into the study. Serum cystatin C and urine KIM-1 levels were measured at admission and 24th hour of hospital stay.
Results: Acute kidney injury was developed in 18 of 45 (40%) ADHF patients. Admission cystatin C levels were higher than normal reference range in both patients with and without acute kidney injury. 24th hour cystatin levels were higher in patients with AKI (1.286 ± 1.592 vs 1.592 ± 0.558, p=0.031). Admission cystatin C level is independently associated with development of acute kidney injury in logistic regression analysis (OR 59.48, 95% CI 1.83-193.2, p=0.021). While an admission cystatin C level of 1.55 predicted acute kidney injury with 77.8% sensitivity and 85.2% specifity, an admission cystatin C level of 1.34 mg/L predicted acute kidney injury with 83.3% sensitivity and 67% specifity in ROC curve analysis. Admission and 24th hour urine KIM-1 levels were not different between patient with and without acute kidney injury. Admission BUN, creatinine, cystatin C and KIM-1 levels were not different between patients had recovered and had not recovered from acute kidney injury. However, twenty fourth hour cystatin C levels were decreased more in patients recovered from AKI (median 0.01, IQR -0.02-0.3 vs. median -0.36, IQR -0.54–-0.31). Urine KIM-1 and KIM-1/creatinine levels were not different between groups.
Discussion and Conclusion: In conclusion, higher admission cystatin C levels are associated with development AKI in patients hospitalized for ADHF. Furthermore, 24th hour cystatin C levels were decreased more in patients recovered from AKI and 24 hour change in cystatin C level may be an indicator of reversibility of AKI in patients hospitalized for ADHF.

Heart failure

OP-086

The effect of obesity on mortality in heart transplant patients

Umut Kocabaş, Esra Kaya, Serkan Ertugay, Pelin Öztürk, Çağatay Engin, Sanem Nalbantgil, Mehdi Zoghi, Tahir Yağdı, Mustafa Özbaran

Ege University Faculty of Medicine, İzmir

Introduction: Although obesity is an independent risk factor for heart diseases some studies showed that increased BMI is associated with improved outcomes in heart failure and this finding has been termed "obesity paradox". In this study, we aimed to evaluate the prognostic impact of BMI in heart transplant patients.
Materials and Method: We studied 200 consecutive heart transplant patients' data retrospectively (76% male, mean age 39±14). The patients were divided into two groups according to BMIs. Patients with normal BMI (18.5-24.9 kg/m^2) [Group 1] were compared to overweight and obese patients (BMI ≥25 kg/m^2) [Group 2] for one-year mortality and rejection rates after heart transplantation (HTx). Patients with BMI of <18.5 kg/m^2 were excluded.
Results: One hundred twenty-five patients were included in Group 1 and 75 patients in Group 2. The patients in Group 1 were younger than Group 2. Co-morbidities and cardiovascular risk factors were higher in Group 2. There were no significant differences between Group 1 and Group 2 for one-year mortality (Table).
Discussion and Conclusion: Although the obese patients (Group 2) had more co-morbidities and risk factors, the one-year mortality was similar to the heart failure patients with normal weight (Group 1). There was no relation between weight and one-year mortality following heart transplantation in end-stage heart failure patients.

Table 1. The comparison of variables between study groups

	Group 1 BMI 18.5-24.9 (n:125, %62.5)	Group 2 BMI ≥25 (n:75, %37.5)	P value
Age (yrs)	[illegible]	[illegible]	<0.001
Sex (male, %)	74	83	0.105
HT (%)	5	23	<0.001
DM (%)	6	19	0.001
CHD (%)	21	42	0.002
Medications			
β blocker (%)	54	67	0.088
ACE I/ARB (%)	55	85	<0.001
LVAD for bridge to HTx (%)	13	37	0.004
Prognosis			
Rejection	42	45	0.628
One-year mortality	23	32	0.278

LVAD: Left Ventricular Assist Device

Heart failure

OP-087

The impact of testosterone on mortality in left ventricular assist device patients

Salih Kılıç, Evrim Şimşek, Hatice Soner Kemal, Sanem Nalbantgil, Serkan Ertugay, Pelin Öztürk, Çağatay Engin, Tahir Yağdı, Mustafa Özbaran

Ege University Faculty of Medicine, İzmir

Introduction: Left ventricular assist device (LVAD) implantation is rapidly increasing and mortality is still high in this population. We aimed to evaluate the impact of baseline testosterone levels, which is an indicator of body composite, on mortality in patients with LVAD.

Materials and Method: Hundred and twenty-eight male patients with LVAD implantation between 2009-2014 were retrospectively analysed.

Results: Median length of support was 11.2 months and 41 (32%) patients died during follow-up, %36 due to cardiovascular reasons. Baseline low free testosterone (FT), total testosterone (TT) levels, low GFR, presence of diabetes (DM) and high white blood cell (WBC) levels were associated with mortality in univariate analysis. In multivariate analysis, DM was associated with 2.8 fold (HR:2.76: 95%CI 1.25-6.17), low TT 3.7 fold (HR: 3.68: 95% CI 1.58-8.56) and low FT 3.4 fold (HR: 3.39: 95% CI 1.131-10.19) increase in all cause death, while low TT levels was associated with 8.24 fold (HR: 8.24: 95% CI 1.68-40.3) increase in cardiac cause death.

Discussion and Conclusion: Previous studies have shown that renal dysfunction, presence of DM and high WBC levels are associated with increased mortality in patients with LVAD. In this study, decreased baseline free and total testosterone levels were associated with increased mortality.

Table 1. Baseline characteristics*. *Univariate analysis. Group1=Survival; Group2=Dead

Risc factors	Group1(n=87)	Group2(n=41)	p
Age	51.3±11	52±12	0.74
BMI, kg/m²	25.1±3.5	25±4.4	0.85
Low FT%	56(38/68)	87(28/32)	0.013
Low TT%	21(14/67)	60(18/30)	<0.001
Albumin	4±0.5	3.8±0.5	0.08
LDL-C	92±38	83±31	0.27
CRP	1.5±2.6	2.6±4	0.65
eGFR<60ml/min%	22(19/87)	42(18/41)	0.002
WBC>10³%	16(14/87)	32(13/41)	0.025
Hgb(mg/dl)	12.6±1.9	12.4±1.8	0.66
DM%	27	44	0.009
Hypertension%	60	71	0.35
Hyperlipidemia%	29	30	0.97

Heart failure

OP-088

The impact of pre-transplant bundle brunch block on mortality in patients with heart transplant: from one heart to another

Umut Kocabaş, Esra Kaya, Serkan Ertugay, Pelin Öztürk, Çağatay Engin, Sanem Nalbantgil, Mehdi Zoghi, Tahir Yağdı, Mustafa Özbaran

Ege University Faculty of Medicine, İzmir

Introduction: The presence of bundle branch block (BBB) is known to be associated with worse prognosis in heart failure patients. However, the impact of pre-transplant BBB existence on prognosis after heart transplantation (HTx) is still debate and unknown. In this study, we aimed to evaluate the impact of pre-transplant BBB on one-year mortality following HTx in patients with end-stage heart failure.

Materials and Method: One hundred sixty consecutive HTx patients (78% male, mean age: 39±14) were included in the study. Patients with pacemaker rhythm were excluded. BBB is defined as wide QRS complex (duration ≥120 msn) in ECG. Patients were divided into three groups according to types of BBB: Patients with no BBB (29%, mean age 37±16) [Group 1], patients with left BBB (LBBB 36%, mean age 43±12) [Group 2] and patients with right BBB or non-specific intraventricular conduction delay (RBBB or NSIVCD 35%, mean age 39±13) [Group 3]. One-year mortality rates were compared between groups.

Results: The demographic parameters, risk factors, NYHA and etiology of heart failure were similar between groups (Table). One-year mortality rate was 24% in study groups (11% in Group 1, 26% in Group 2 and 32% in Group 3, p=0.038) (Figure). Although the logistic regression analysis demonstrated a significant increased one-year mortality risk for patients with RBBB or NSIVCD (odds ratio [OR] 3.88, 95% confidence interval [CI] 1.31 to 11.49, p=0.01), there was no significant difference between Group 2 and 3 (p=0.53).

Discussion and Conclusion: However, the presence of BBB was associated with higher mortality rate in patients with heart failure following HTx, there was no significantly difference between the types of BBBs.

Table 1. The comparison of variables between all groups

	No BBB (n=46, 29%)	LBBB (n=58, 36%)	RBBB or NSIVCD (n=56, 35%)	P value
Age (yrs)	37±16	43±12	39±13	0.117
Sex (male, %)	76	74	84	0.416
Etiology (Dilated CMP, %)	54	57	41	0.072
NYHA (Class III, %)	57	69	73	0.431
Atrial fibrillation (%)	15	19	14	0.120
LVEF (%)	22±8	21±3	23±8	0.268

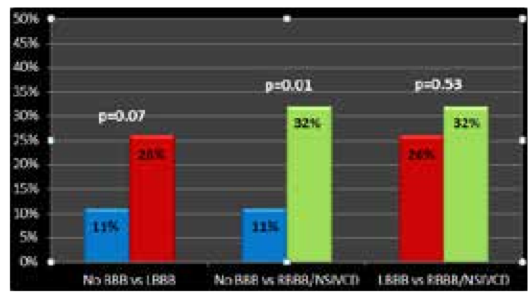


Figure 1. Comparison of 1-year mortality rate between groups

Heart failure

OP-089

The relationship between the urocortin–1 level, mortality and atrial fibrillation in patients with chronic systolic heart failure

Onur Argan[1], Güliz Kozdağ[2], Dilek Ural[2], Serdar Bozyel[3], Müjdat Aktaş[2], Kadriye Halli Akay[1], Kurtuluş Karaüzüm[2], İrem Yılmaz[4], Alptuğ Tokatlı[5], Denizhan Karaçimen[6], Umut Çelikyurt[2]

[1]Kocaeli State Hospital, Kocaeli
[2]Kocaeli University Faculty of Medicine, Kocaeli
[3]Kocaeli Derince Training and Research Hospital, Kocaeli
[4]Isparta State Hospital, Isparta
[5]Gölcük Military Hospital, Kocaeli
[6]İzmir Seka State Hospital, Kocaeli

Introduction: Atrial fibrillation (AF) is one of the frequently encountered co-morbidities in chronic heart failure. We investigated the relationship between the urocortin-1 level, AF rhythm and mortality.

Materials and Method: 130 patients with NYHA II-IV symptoms, chronic systolic HF [ejection fraction (EF) ≤45%] were included in the study between January 2013 and December 2013. 68 of the patients were randomly assigned to the heart failure group with sinus rhythm (37 male) and 62 of them were randomly assigned to the heart failure group with AF (37 male). In addition, control group was consisted of 50 people. The mean age was 61±13, 68±14 and 57±11 years in the sinus, AF and control group, respectively. Mean NYHA functional class was 2.75±0.44 in the sinus group and 2.68±0.47 in the AF group. There was no statistically significant difference between the groups in terms of coronary artery disease (CAD), hypertension and diabetes mellitus (DM).

Results: Urocortin-1 level was 95.4±135 pg/dl in the control group, 166,5±174 pg/dl in the sinus group and 179,2±165 pg/dl in the AF group. No significant difference was observed between the heart failure groups, but urocortin-1 levels were significantly higher in both heart failure groups compared to control group. NT-proBNP level was 2922±5569 pg/ml, 5159±11872 pg/ml and 80±82 pg/ml in the sinus group, AF group and control group respectively. NT-proBNP levels were not different in the sinus and AF group. But, NT-proBNP levels were higher than the control group. There was a correlation between the urocortin-1 levels and NT-proBNP levels. Heart failure patients were followed for approximately two years. Urocortin-1 plasma level was 75,69 ng/ml (13,39-201,17 ng/ml) in patients who died and was 70,91 ng/ml (18,41-290,41) in surviving patients. There was no correlation between the urocortin-1 level and mortality (p=0,442). Similarly, there was also no correlation between urocortin-1 level and hospitalization (r=-0,020, p=0,934 in died patients; r=-0,085, p=0,290 in surviving patients). No significant relation was detected between the urocortin-1 levels and hospitalization in Spearman correlation analysis conducted without separating the deads and survivors (r=-0,094, p=0,214).

Discussion and Conclusion: Urocortin-1 levels were found higher in chronic systolic heart failure patients than the control group. But, the results were similar in AF and sinus group. In addition, urocortin-1 level was not detected as a significant predictor to predict mortality and in determining hospitalization in chronic heart failure patients.

Heart failure

OP-090

Effect of intravenous nitrate on serum NT Pro-BNP levels in acute decompensated systolic heart failure

Mustafa Topuz, Mehmet Çoşgun, Sefa Okar, Gökhan Alıcı, Murat Çaylı

Adana Numune Training and Research Hospital, Adana

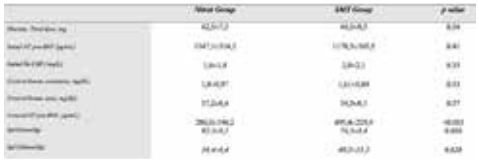
Introduction: Persistently elevated natriuretic peptide levels are associated with impaired prognosis in heart failure (HF) patients. The purpose of this study was to evaluate whether intravenous (IV) Nitroglycerin theraphy in addition to the standard medical therapy (SMT) can improve cardiac functions demonsrated by a reducing of the serum level of N terminal pro B-type natriuretic peptide (NT Pro-BNP) in decompansated HF patients.

Materials and Method: A total of 60 consecutive decompansated HF patients were either treated with IV nitroglycerine (n=31) in addition to SMT or only SMT (n=29). All patients underwent a complete transthoracic echocardiographic (TTE) examination to evaluate left ventricular ejection fraction (LVEF). Cardiac recovery, quantified by NT pro-BNP levels and improving of blood gas analyses of patients during the first 48 h, were the primary endpoints.

Results: The groups were comparable according to the baseline characteristics. The amount of diuretics given in both groups were similar. NT pro-BNP levels decreased in all patients. However, the amount of NT pro-BNP decrease was larger in the IV nitrate group (495,4±229,9 vs 280±196, p<0.001) than SMT group. In blood gas analyses, control SpCO2 values were found significantly lower (40,5±13,3 vs 34,4 ±6,4 p=0.028) and control SpO2 values were significantly higher in IV nitrate group than SMT group after 48 hour (74,8±14,6 vs 83,3±7,6 p=0.006). In correlation analyses total nitroglycerine doses were negatively coreleated with control NT pro-BNP values (r=-452, p=0.001).

Discussion and Conclusion: These results indicate that the addition of I.V nitrate to the SMT has a markedly better effect on cardiac functions, improvement blood gas analyses and reduced myocardial stress measured using NT pro-BNP in decompansated HF patients.

Table 1. The characteristics of the study patients



Valve diseases

OP-091

Bicuspid aortic valve prevalence in adults to whom echocardıography was performed: result of single center experience

Bahtiyar Aralov, Mehmet Doğan, Hamza Sunman, Mehmet Erat, Engin Algül, Tolga Han Efe, Tolga Çimen, Ahmet Akyel, Sadık Açıkel, Ekrem Yeter

Dışkapı Yıldırım Beyazıt Educationa and Research Hospital, Ankara

Introduction: Bicuspid aortic valve (BAV) is the most common congenital cardiac anomaly in adults and associated with premature valve dysfunction and abnormalities of the ascending aorta. Although there is some publication about the frequency of BAV, there is limited data about BAV in adult patients in our country. The aim of our study was to determine the prevalence and echocardiographic characteristics of BAV patients who underwent echocardiography.

Materials and Method: To determided patients with BAV, three and half year echocardiographic data in our adult cardiology clinic was retrospectively examined. Demographic features and laboratory findings were also obtained from hospital record.

Results: Among 52742 patients, BAV prevalence was found to be 4.4 (n=235) in 1000 patients. The median age of BAV patients was 46.4±17.6 years and 159 (67.7%) patients were male. Ascending aorta dilatation was found in 117 (51%) patients with BAV. There was an intermediate positive correlation between age and ascending aortic diameter (r=0,449, p<0,001). BAV patients with aortic dilatation were significantly older (53.9±14.9 ve 39.3±17.1, p=<0.001, respectively). Sixty-five (27.7%) of the BAV patients had aortic stenosis and echocardiographic graded as mild in 36 (15.3%), moderate in 20 (8.5%) and severe in 9 (3.5%) patients. Aortic regurgitation was observed in 78.7% out of the BAV patients and echocardiographic graded as mild in 144 (61.3%), moderate in 27 (11.5%) and severe in 14 (6.0%) patients. Additionally, another congenital anomaly such as aortic coarctation, cor triatriatum, persistent left superior vena cava, noncompaction cardiomyopathy, cleft mitral valve, ventriküler and atrial septal defekt were observed in 10 (4.3%) patients.

Discussion and Conclusion: The prevalence of BAV diagnosed by echocardiography at the adult cardiology clinic was 0.44%. In our country, this is the first largest study showing the BAV prevalence and echocardiographic characteristics in patients undergoing echocardiography.

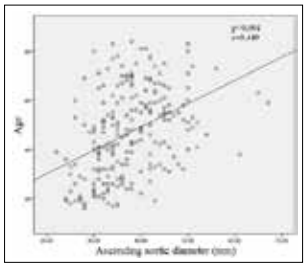


Figure 1. Relation between age and ascending aortic diameter

Valve diseases

OP-092

Management of late bioprosthetic mitral valve thrombosis

Mahmut Yesin, Sabahattin Gündüz, Macit Kalçık, Mustafa Ozan Gürsoy, Sinan Cerşit, Mehmet Ali Astarcıoğlu, Süleyman Karakoyun, Mehmet Özkan

Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: The best treatment option in bioprosthetic valve thrombosis (BVT) beyond 3 months after valve replacement surgery has not been established. We aimed to evaluate the underlying causes and the treatment options in patients with late BVT

Materials and Method: We analyzed the patients with definite BVT assessed by transesophageal echocardiography (TEE) between 2005-2014 in a single center. The treatment options included unfractionated heparin (UFH) infusion for small (<10 mm) thrombi for a maximum of 28 days, thrombolytic therapy (TT) for large thrombi (≥10 mm), and surgery for large thrombi in whom TT was contraindicated. The TT protocol was slow infusion (6-hours) of low dose (25 mg) tissue plasminogen activator without bolus. The predisposing factors to thromboembolism and TEE features as well as the treatment success and adverse events were evaluated.

Results: 7 patients [median age 45 (range 29-64) years, all female] had late mitral BVT. The median time elapsed since valve surgery was 42 (range 4-252) months. Atrial fibrillation was present in 2 (28.6%), a history of cerebral emolism in 3 (42.8%), diabetes in 1 (14.3%) and hypertension in 2 (28.6%) patients. The median NYHA was 2 (range 2-4). One patient was current aspirin user (100 mg per day). TEE revealed small non-obstructive BVT in 2, large non-obstructive BVT in 2 and obstructive BVT in 3 patients. One of the obstructive BVT patients had a recent oral contraceptive use, the second one had a homozygot MTHFR mutation with elevated homosistein levels, and the third one had protein S deficiency with decreased activity. Any coagulopathy was not identifiable in patients with non-obstructive BVT. Two obstructive BVT patients suffered from recent cerebral embolism and had excessive thrombus burden (median 0.9 cm^2, range 0.8-1). Patients with non-obstructive BVT were free of embolic phenomona and had less thrombus burden (median 0.18 cm^2, range 0.05-0.8 cm^2). Four patients (2 obstructive, 2 non-obstructive BVT) underwent TT with complete lysis in all. UFH was succesful in 1 patient with obstructive BVT who had contraindication to TT, and failed in another with nonobstructive BVT. One patient underwent surgery due to degenerated bioprotshesis together with non-obstructive thrombosis.

Discussion and Conclusion: Hypercoagulability may precipitate late BVT with a high thrombus burden. TT appears as an effective treatment option in patients with BVT with a large thrombi, unless contraindicated. Surgery may be favoured in patients with degenerated bioprostheses. UFH may be reasonable for smaller thrombi, however outcomes should be evaluated in a larger cohort.

Valve diseases

OP-093

Clinical, hematological and echocardiographic assessment of aortic paravalvular leaks

Mustafa Ozan Gürsoy[1], Macit Kalçık[2], Mehmet Özkan[3], Tayyar Gökdeniz[4], Mehmet Ali Astarcıoğlu[5], Mahmut Yesin[3], Süleyman Karakoyun[4], Sabahattin Gündüz[3], Altuğ Tuncer[3], Cengiz Köksal[3]

[1]İzmir Gaziemir State Hospital, İzmir
[2]Çorum İskilip State Hospital, Çorum
[3]Kartal Koşuyolu Education and Research Hospital, İstanbul
[4]Kafkas University Faculty of Medicine, Kars
[5]Evliya Çelebi Training and Research Hospital, Kütahya

Introduction: Paravalvular leakage (PVL) is an essential complication of heart valve surgery and echocardiography is central to imaging modalities. Herein, hematological, echocardiographic and clinical characteristics of the patients with aortic PVLs are presented.

Materials and Method: Seventy-eight aortic PVL patients underwent transthoracic and transesophageal (TEE) echocardiographic examination. One patient was excluded due to poor echocardiographic window. Clinical, echocardiographic and laboratory findings were recorded.

Results: Of 77 patients, 21 (27.3%) had mild, 33 (42.8%) had moderate and 23 (29.9%) had severe aortic PVL. Nineteen patients had more than one PVL (total PVLs: 98). The mean PVL width and length measured by TEE were 2.9±0.9 and 6.2±2.6 cm, respectively. Moderate-to-severe PVLs were more frequent between the noncoronary and the left coronary sinus annuluses, especially adjacent to the left main coronary artery (LMCA) ostium. Seventeen patients (22.1%) had moderate-to-severe hemolysis and had higher incidence of multiple PVLs compared to those with no or mild hemolysis. The patients with moderate-to-severe PVLs had decreased lymphocyte levels (1.9±0.6 and 1.5±0.7, respectively; p:0.03) and increased neutrophil/lymphocyte ratio (2.7±2.1 and 4.2±3.7; respectively; p:0.009) at admission compared to those with mild PVL. Percutaneous closure was performed in 5 patients. Eleven patients underwent surgical repair and the localizations of PVLs were in accordance with echocardiographic findings.

Discussion and Conclusion: Moderate-to-severe aortic PVLs occur more frequently between noncoronary sinus and left coronary sinus annulus, especially adjacent to LMCA ostium, where special care is taken by surgeons to avoid deep sutures, probably making this region prone to injury. Furthermore, moderate-to-severe aortic PVL is associated with increased novel inflammatory biomarkers including neutrophil/lymphocyte ratio.

Valve diseases

OP-094

HLA class I and class II polymorphism in mitral chordae tendineae rupture

Mehmet Bülent Vatan, Aysel Kalaycı Yiğin, Ramazan Akdemir, Mustafa Tarık Ağaç, Mehmet Akif Çakar, Ersan Tatlı, Murat Aksoy, Harun Kılıç, Hüseyin Gündüz, Keziban Karacan

Sakarya University Faculty of Medicine, Sakarya

Introduction: Mitral chordae tendinea rupture (MCTR) is a progresive condition that frequently results in severe mitral regurgitation. Understanding the pathogenesis and identification of individual susceptibility to MCTR is essential for risk modification. HLA antigens were shown to be expressed on valvular tissues The aim of the present study was to evaluate the significance of polymorphisms in HLA class I and class II genes in patients with MCTR.

Materials and Method: Twenty-one patients with MCTR and thirty age and sex matched controls were enrolled in the study. HLA alleles were analysed using sequence specific primer-polymerase chain reaction and nucleotide sequencing.

Results: As compared with controls, patients with MCTR had an increased frequency of HLA B-7 haplotype and a decreased frequency of HLA A-32 haplotype. The frequencies of HLA class II alleles were not significantly different between MCTR patients and controls.

Discussion and Conclusion: In this first study of HLA genetic susceptibility to MCTR, HLA A-32 was more common in controls while HLA B-7 was more common among MCTR cases suggesting a disease susceptibility association. Numerous studies have suggested that genetic susceptibility to RHD is linked to HLA class I and class II alleles. In these studies; some HLA alleles were proposed as susceptibility markers to development of rheumatic valvular heart disease and mitral valve prolapse, conversely a protective role of some HLA alleles were reported. Recently HLA-B7 was reported in various studies to be associated with valvular heart disease. Based on the above observations of genetic polymorphism in HLA alleles in patients with RHD and MVP which are predisposing factors for MCTR, we intended to investigate HLA allele frequency in patients with MCTR. Further studies including greater number of patients are needed to confirm these findings.

Table 1. Demographic and clinical characteristics

Parameters	Total (N=51)	MCTR group (N=21)	Control group (N=30)	P value
Age (mean,SD)	52±16	57±16	49±16	0.93
Sex (male, n, %)	34 (66.6%)	15 (71.4%)	19 (63.3%)	0.28
Hypertension (n, %)	22 (43.1%)	8 (9.1%)	14 (12.9%)	0.54
Diabetes mellitus (n, %)	4 (7.8%)	1 (4.7%)	3 (10%)	0.63
Coronary artery disease (n, %)	4(7.8%)	1(4.7%)	3(10%)	0.63

Table 2. Allele distribution for HLA Class I and Class II

Allele	MCTR group (N=21)	Control group (N=30)	P value
A1	3	4	0.923
A2	8	11	0.917
A3	7	6	0.282
A32	1	9	**0.034**
B7	4	0	**0.024**

Valve diseases

OP-095

Changing trends in infective endocarditis

Zafer Aydın[1], Ümit Yaşar Sinan[2], Murat Başkurt[3], Ahmet Yıldız[2], Sinan Üner[2], Mehmet Serdar Küçükoğlu[4]

[1]Balıkesir State Hospital, Balıkesir
[2]İstanbul University Institute of Cardiology, İstanbul
[3]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul
[4]İstanbul University, İstanbul Medical Faculty, İstanbul

Introduction: The epidemiologic profile of infective endocarditis has changed substantially over the past few years, especially in industrialized countries. We aimed to determine the clinical and demographic data of infective endocarditis (IE) during a ten year period between 2001 and 2010 and compare it to the data obtained from previous two decades to understand trends in infective endocarditis (IE).

Materials and Method: Patients hospitalised and diagnosed as IE between 2001 and 2010 were analyzed retrospectively. Age, gender, predisposing factors, symptoms, duration of symptoms, physical and laborotory findings, microbiological and echocardiographic data, treatment and, complications including death were recorded. The results were compared with data from our institution gathered during the periods between 1978-1992 (n:88) and 1992-2001 (n:66).

Results: Fifty-six patients (26 female, 30 male, mean age 51,7+16,5 years) were hospitalized between 2001 and 2010. Fever was the most encountered symptom. The patients were significantly older than the previous years, (51.7 vs 32.3 and 34.4 p<0.001) There were less patients with rheumatic (10 vs 58 and 32; p:0.04) and more patients with degenerative (5 vs 0 and 0; p:0.01) and prosthetic valvular disease (24 vs 13 and 18; p:0.07). As causative agents Viridans Streptococci (p:0,01), coagulase negative staphyococci (p:0,03) and enterococci (p:0,04) were more prevalent. Number of culture negative IE cases had decreased (p<0,01). Fourteen patients (11 because of cardiovascular causes) had died during the first year of IE. The reasons for deaths included congestive heart failure (42%), embolic phenomena (21%), surgery (14%). Mortality was higher in patients with prosthetic valve endocarditis (p<0.007), and aortic valve endocarditis. Mortality was significantly reduced in patients treated surgically (p:0,007). Female gender, presence of third heart sound, pulmonary rales and large mobile vegetation detected by echocardiography were predictors of mortality.

Discussion and Conclusion: Predisposing factors for IE seems to be changing from rheumatic to prosthetic valvular disease and staphylococci has got the lead from streptococci as the causative agent. The mortality rate for IE is still very high despite the developements in diagnosis, and treatment.

Valve diseases

OP-096

The relationship between epicardial fat thickness and the presence of left atrial thrombus in mitral stenosis patients

Ender Özal[1], Erdal Belen[2], Hamdi Püşüroğlu[3]

[1]Pendik State Hospital, İstanbul
[2]Okmeydanı Training and Researc Hospital, İstanbul
[3]Mehmet Akif Ersoy Chest and Cardiovascular Surgery Education and Research Hospital, İstanbul

Introduction: Rheumatic mitral valve stenosis (RMVS) can lead to left atrial (LA) thrombus development due to stasis and further emboli related complications. However, LA stasis alone is not sufficient enough to explain thrombus formation. Epicardiac adipose tissue is a component of visceral fat that releases prothrombotic substances and is associated with many cardiovascular diseases. Our aim in this study is to examine the relationship between LA thrombus presence and epicardial adipose tissue thickness (EFT).

Materials and Method: 312 consecutive RMVS patients with mitral valve area of less than 2 cm^2 were included in this cross-sectional study. Patients were divided into two groups, those with and those without LA thrombus as determined by transthoracic and transesophageal echocardiography. Routine biochemical analysis and electrocardiography examinations were carried out. EFT was measured using transthoracic echocardiography.

Results: LA thrombus was determined in 84 (26.9%) RMVS patients, No significant difference in terms of age, gender, body mass index were found between the groups with and without LA thrombus. In echocardiographic examinations, higher mean gradient and left atrial diameter as well as lower mitral valve area was determined in the group with thrombus (p<0.001). In those with LA thrombus, higher c-reactive protein and EFT values were determined (p<0.001). There was significant correlation between EFT and MVA, CRP, LAV, LAAPD, mean gradient (p<0.001). In multivariate regression analysis, it was determined that the relationship between LA thrombus and EFT (OR: 59.5 95% CI: 12.1-290.10, p<0.001).

Discussion and Conclusion: Transthoracic echocardiography, routinely used in patients with RMVS, can measure EFT to determine patients who are under risk for thrombus.

Interventional cardiology / Structural heart and valve diseases

OP-097

Safety and efficacy of transient ulnar artery compression on acute radial artery occlusion in the short-term after transradial catheterization

İsmayil Goyushov, Özgür Ulaş Özcan, Sadettin Deniz Kumbasar, Cansın Tulunay Kaya, Hüseyin Goksuluk, Gürbey Söğüt

Ankara University, Faculty of Medicine, Ankara

Introduction: The aim of this study was to investigate the effect of transient ulnar compression on radial artery occlusion (RAO) in the short-term after transradial coronary intervention.

Materials and Method: Two hundred and ten patients who met the inclusion criteria were enrolled in our study. All of the patients were assessed for radial and ulnar artery patency by Doppler ultrasonography before the procedure. After the radial sheath removal, hemostasis was obtained by compression and application of gauze bandage for 10 minutes. Two minute ulnar compression was performed twice in 5 minute intervals in the compression group (n=140). The conventional compression of the radial artery was performed in 71 patients in the control group. Four hours after the procedure, two-dimensional and Doppler sonograms were performed in both groups to assess for RAO, radial artery peak systolic flow, radial artery diameter and hematoma.

Results: RAO was observed in 5 patients (7.1%) in the control group, and 3 patients (2.1%) in the compression group (p=0.07). After the procedure, the diameter of the proximal radial artery was increased statistically significantly in both groups (p<0.05). Proximal peak systolic flow velocity was significantly decreased in the compression group (p<0.05). The diameter of the vessel distal to the puncture point was significantly increased in both groups (p<0.05). An increase in the vessel diameter in the control group was more evident. Major adverse vascular events, which included a combination of RAO, hand ischemia and hematoma were significantly decreased (p=0.02) in the compression group.

Discussion and Conclusion: Transient, the short term ulnar compression provided a clinical favor with a trend toward a lower rate of RAO after TRA.

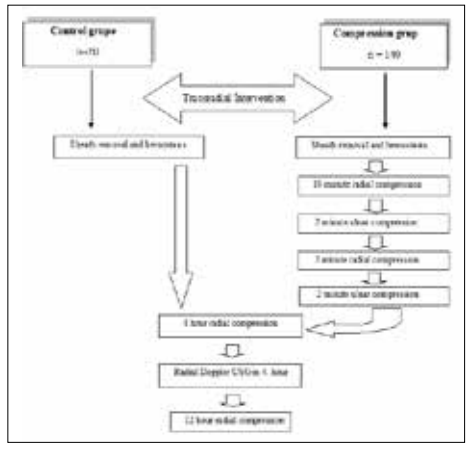


Figure 1. Study protocol

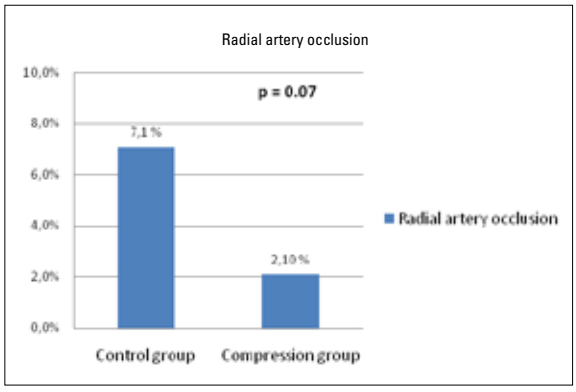


Figure 2. Radial artery occlusion

Interventional cardiology / Peripheral vascular and carotid

OP-098

Effects of carotid stenting on nocturnal non-dipping phenomenon

Erkan Köklü, İsa Öner Yüksel, Şakir Arslan, Selçuk Küçükseymen, Nermin Bayar, Görkem Kuş, Zehra Erkal, Göksel Cağırcı

Antalya Education and Research Hospital, Antalya

Introduction: It is well-known that nondipper blood pressure pattern is associated with an increased cardiovascular risk in hypertensive patients. The aim of this study is to observe whether carotid artery stent (CAS) procedure returns non-dipper blood pressure pattern to dipper pattern in hypertensive patients.
Materials and Method: Ambulatory blood pressure monitorization was performed in 152 hypertensive patients who underwent CAS procedure 1 day before, and 1 day and 1 year after the procedure. Blood pressure monitorization of patients was classified as dipper and non-dipper. Blood pressure parameters 1 year after CAS procedure were compared with pre-procedure parameters.
Results: According to ambulatory blood pressure monitorization results 1 year after CAS procedure, 78 patients (64%) who had non-dipper pattern at first, transformed into dipper pattern and 44 patients (36%) remained to be non-dippers. Moreover, 1 year after CAS procedure, 18 patients (60%) who had dipper pattern at first transformed into non-dipper pattern and 12 patients (40%) remained as dippers. When blood pressure follow-up values at 1 year after CAS procedure were compared with blood pressure readings before the procedure, 78 patients (51%) who were non-dipper before the procedure transformed into dipper pattern (p=<0.01) while 44 patients (29%) with non-dipper pattern remained to be non-dippers (p=0.01). Twelve patients (7.9%) who had dipper pattern remained to have dipper pattern (p=0.768). Eighteen patients who had dipper pattern (12%) transformed into non-dipper pattern after the procedure (p<0.01). The total number of non-dipper pattern patients before CAS procedure was 80.3% (122 patients) while this percentage dropped to 40.8% (62 patients) after the CAS procedure (p<0.01).
Discussion and Conclusion: During 1 year follow-up after CAS procedure, non-dipper blood pressure pattern transforms into dipper pattern. This result might be attributed to the contributory effect of CAS procedure to long-term cardiovascular protection.

Table 1. Blood pressure patterns before and after CAS

The blood pressure pattern before CAS process	The blood pressure pattern after CAS process	Day-night percentage change of mean blood pressure (%) Before CAS / After CAS	% Rate (n)	P value
Nondipper	Dipper	-6.9 ± 1.6 / -12.9 ± 2.3	51 (78)	< 0.01
Nondipper	Nondipper	-6.1 ± 1.8 / -7.3 ± 2.2	29 (44)	0.01
Dipper	Dipper	-12.5 ± 1.9 / -12.3 ± 2.2	7.9 (12)	0.768
Dipper	Nondipper	-13.0 ± 4.9 / -7.1 ± 1.5	12 (18)	< 0.01

CAS: Carotid artery stent procedure

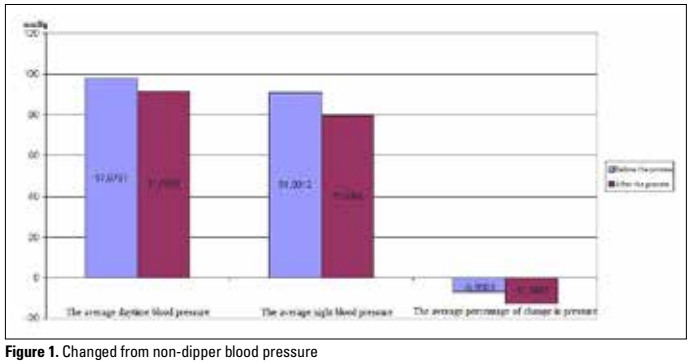


Figure 1. Changed from non-dipper blood pressure

Interventional cardiology / Peripheral vascular and carotid

OP-099

1-year results of primary stenting for TASC II D lesions of the superficial femoral and popliteal arteries

Mehmet Ali Astarcıoğlu[1], Celal Kilit[1], Taner Şen[1], Macit Kalçık[2], Mahmut Yesin[2], Süleyman Karakoyun[2], Basri Amasyalı[1]

[1]Dumlupınar University, Kütahya Evliya Çelebi Training and Research Hospital, Kütahya
[2]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul
3Kafkas University Faculty of Medicine, Kars

Introduction: This study aimed to evaluate the safety and the efficacy of primary stenting to treat The Trans-Atlantic Inter-Society Consensus II (TASC) D femoropopliteal lesions.
Materials and Method: Consecutive patients with Rutherford stage 3 to 6 due to TASC D femoropopliteal lesions were treated with a self-expanding nitinol stent. Endpoints of interest included primary and secondary patency, target lesion revascularization, in-stent restenosis, major adverse cardiovascular events, Rutherford class improvement and change in walking capacity at 1 year.
Results: A total of 53 patients (57 lesions) were treated with a self-expanding nitinol stent and final procedural success was 90.5%. The median length of the treated segment was 330±96 mm. The mean number of the stents was 2.1±0.9. At 1 year, primary and secondary patency rates were 63.9% and 82.1%, respectively. Major adverse cardiovascular events occured in 11 patients (22.9%), and significant benefits were observed in Rutherford class and walking distance (both p<0.001).
Discussion and Conclusion: Primary implantation of self expanding nitinol stents for the treatment of TASC D femoropopliteal lesions appears to be safe and effective, especially in patients who have multiple comorbidities and high risk for surgical bypass.

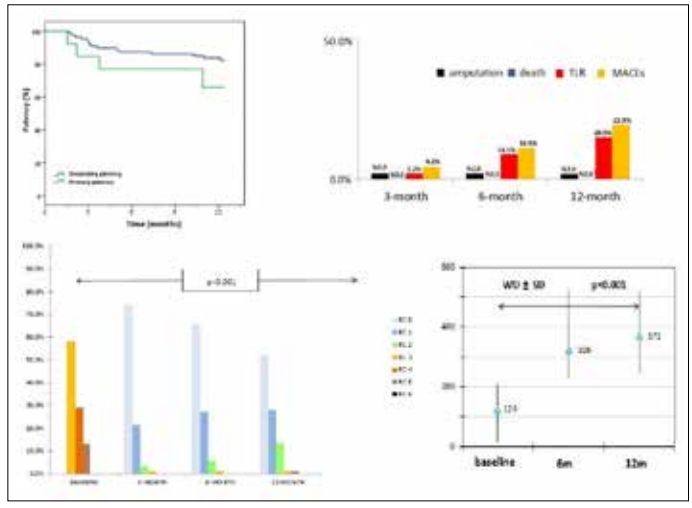
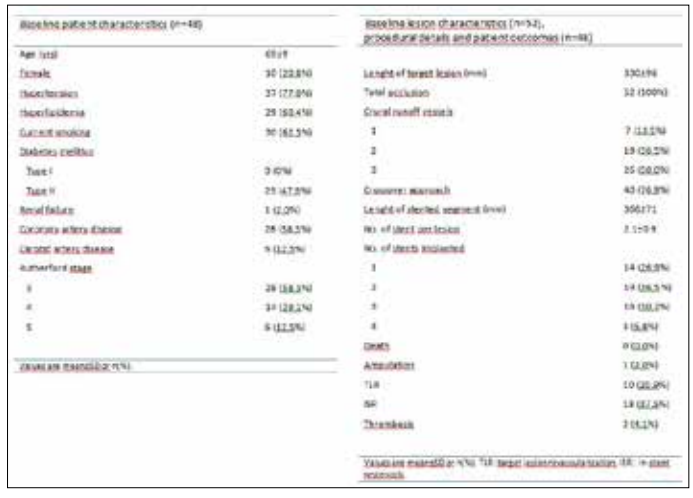


Figure 1. MACEs, Rutherford class and walking distance

Table 1. Baseline and procedural charecteristics



Interventional cardiology / Peripheral vascular and carotid

OP-100

Intracardiac foreign body (guide wire) left after the insertion of the central venous catheter

Mehmed Asim Kulić, Nermir Granov, Nihad Kukavica

Clinic For Cardiac Surgery/Institut For Heart Diseases/University Clinical Center Sarajevo

Introduction: In some report the complication rate of central venous cannulation may be as high as 12%.(1,2) Seldinger technique of the CVC insertion means introduction of the catheter over the previously positioned guide wire.
Materials and Method: Case: We report 42 years old male patient, with inoperable pancreatic cancer, icteric, cachectic, dehydrated, with fragile peripheral veins. He was admitted at Oncology department in poor condition which demanded fast intervention for rehydratation, ABS and mineral correction. During the failed insertion of the Central venous catheter, the guide wire left behind in the great veins, partly in the right atrium ending in the hepatic veins Figure 1. Patient was transferred to Cath lab and in absence of the snare or other conventional retrieval devices decision was made to use modified technique implying the use of the tourniquet, which Cardiac surgeons use for snaring tobacco sutures in Cardiac surgery Figure 2.
Results: Under the fluoroscopy tourniquet was introduced through right subclavian vein. Soon as guide wire was hooked and fixed by tourniquet Figure 3. The residual guide wire was extirpated Figure 4. and through the same situs in the right subclavian vein the new Central venous catheter was inserted Figure 5.
Discussion and Conclusion: Insertion of the Central venous catheter (CVC) through the internal jugular vein is routine procedure and our professionals conduct it on the daily basis. In very rare occasions complications may occur. In this report we would like to demonstrate the way we have managed extirpation of the lost guide wire in absence of the conventional retrieval devices.Conclusion: Closer attention during the insertion of the central venous catheter or insertion under the supervision of the seniors may reduce occurrence of the entrapped guide wires.

Figure 1. Guide wire placed in the JVI

Figure 2. Extripation of corpus allineum

Interventional cardiology / Peripheral vascular and carotid

OP-101

Serum endocan level and the severity of peripheral arterial disease

Dursun Cayan Akkoyun, Aydın Akyüz, Nejat Altıntaş, Seref Alpsoy, Murat Aydın, Hasan Değirmenci, Niyazi Güler

Namık Kemal University Faculty of Medicine, Tekirdağ

Introduction: Endocan is mainly secreted by vascular endothelium cells, epithelial cells lining renal distal tubules, bronchi, and lung submucosal glands. Endocan might have the key role in endothelium-dependent pathological disorders. We investigated the relationship between peripheral arterial disease (PAD) and serum endocan levels.
Materials and Method: We included 40 patients diagnosed with PAD and 40 individuals as a control group. The subjects had undergone peripheral angiography and confirmed that they had PAD, formed the patient group however subjects confirmed no-PAD formed, the control group.
Results: There was a significant difference in serum endocan levels between the control group and the PAD group (4.02 (6.35) ng/L vs 3.27 (4.56) ng/L, p<0.001). There was significant correlation between serum endocan level and the severity of PAD.
Discussion and Conclusion: Endocan, a new biomarker of endothelial pathology, is significantly increased in patients with PAD.

Interventional cardiology / Peripheral vascular and carotid

OP-102

Percutaneous endovascular therapy for symptomatic chronic total occlusion of the left subclavian artery: initial and mid-term results of 16 patients

Alptuğ Tokatlı[1], Mehmet Akif Çakar[2], Ersan Tatlı[2], Mehmet Bülent Vatan[2], Murat Aksoy[2], Mustafa Tarık Ağaç[2], Harun Kılıç[2], Hüseyin Gündüz[2], Ramazan Akdemir[2]

[1]Gölcük Military Hospital, Kocaeli
[2]Sakarya Training and Research Hospital, Sakarya

Introduction: Percutaneous endovascular therapy is an accepted and preferred procedure for symptomatic subclavian artery disease. However, technical feasibility, effectiveness and reliability of treating chronic total occlusion of subclavian artery with this approach is uncertain. The aim of this study was to evaluate the initial and mid-term results of endovascular therapy in patients with symptomatic chronic total occlusion of left subclavian artery.
Materials and Method: Between January 2010 and February 2015 sixteen patients (10 male; mean age of 56±13) underwent balloon angioplasty and stenting for chronic total occlusion of left subclavian artery. 6 patients (38%) had arm claudication, 8 patients (50%) had vertebrobasilar insufficiency and 2 patients (12%) had coronary steal.
Results: A total of 18 stents were implanted to 15 patients. Only in one patient central luminal passage was not achieved because of subintimal position of guide wire resulting in a 94% procedural success rate. There were no procedure related complications. The pre-procedural systolic blood pressure difference between the upper extremities ranged from 25 to 60 mmHg, with a mean of 37±13 mmHg. The post-procedural difference ranged from 5 to 38 mmHg with a mean of 11±9 mmHg, and the improvement was statistically significant. The outpatient follow-up revealed one asymptomatic restenosis at 6 month. The patency rate at 6 month was 93%.
Discussion and Conclusion: Balloon angioplasty and stenting in chronic total occlusion of left subclavian artery is a safe and effective treatment with good acute success rate and mid-term patency. Prospective randomized studies in a larger population would provide more precise results.

Figure 1. Angiography image showing ballon angioplasty

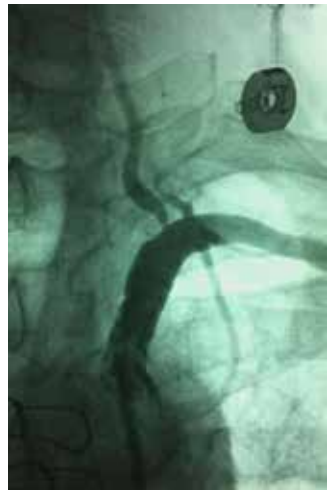


Figure 2. Post-angioplasty control image with stent

Interventional cardiology / Coronary

OP-103

Acute effects of intracoronary tirofiban on no-reflow phenomena in patients with ST-segment elevated myocardial infarction undergoing primary PCI

Mahmut Akpek[1], Ömer Şahin[2], Bahadir Şarlı[2], Ahmet Oğuz Baktır[2], Hayrettin Sağlam[3], Serkan Ürkmez[4], Ali Ergin[4], Abdurrahman Oğuzhan[4], Hüseyin Arınç[2], Mehmet G Kaya[4]

[1]Adnan Menderes University, Faculty of Medicine, Aydın
[2]Kayseri Training and Research Hospital, Kayseri
[3]Kayseri State Hospital, Kayseri
[4]Erciyes University Faculty of Medicine, Kayseri

Introduction: We evaluated the acute effect of intracoronary administration of tirofiban on no-reflow phenomenon in patients with ST-segment elevated myocardial infarction undergoing primary percutaneous coronary intervention.
Materials and Method: Consecutive patients (n=162) were randomized into 2 groups based on whether intracoronary tirofiban was administered.
Results: After stent implantation, if the TIMI flow was <3 in spite of treatment, patients were considered as no-reflow and randomized to the tirofiban or placebo group. Intracoronary tirofiban (25 µg/kg) or %0.9 isotonic saline solution as the placebo was administered via the guiding catheter to the IRA. To evaluate the acute effects of tirofiban on coronary no-reflow phenomena, a bolus dose of tirofiban was administered directly in the intracoronary root in the tirofiban group. %0.9 isotonic saline solution was administered directly in the intracoronary root as placebo in placebo group. Ten minutes later, cine angiography was performed again and TIMI flow grade was recorded in both groups. Recorded angiograms were evaluated by 2 independent blinded cardiologists who were not treating physicians. The TIMI flow grade was based on consensus. After the administration of intracoronary tirofiban, TIMI flow grade significantly increased (p<.001) and successful reperfusion was achieved in 26 (32%) patients. In the placebo group, however, after the administration of intracoronary placebo the TIMI flow grade did not change (p=.070), and successful reperfusion was achieved only in 8 (10%) patients. In-hospital major adverse cardiac events (MACE) were significantly lower in the tirofiban group (36% vs 19%, p=.013).
Discussion and Conclusion: Intracoronary administration of tirofiban significantly improves TIMI flow grade and is associated with a lower in-hospital rate of MACE.

Anatol J Cardiol 2015; 15 (Suppl 1): 1-104

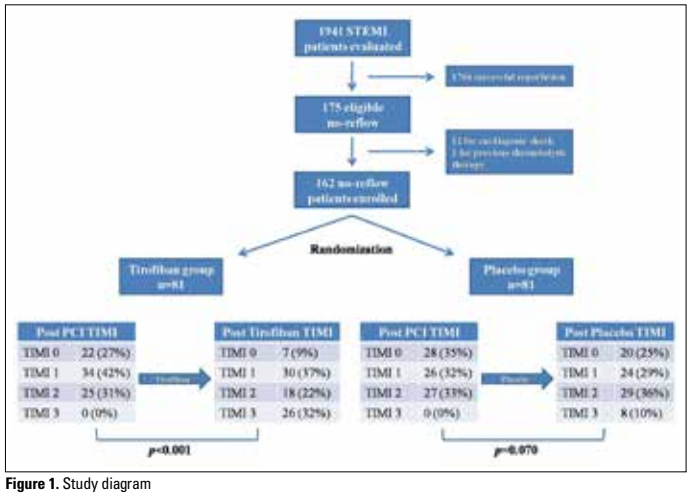


Figure 1. Study diagram

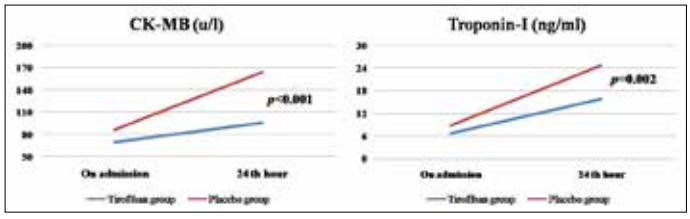


Figure 2. CK-MB and Troponin-I levels of study population

Interventional cardiology / Coronary

OP-104

Unusual vascular and hemorrhagic complications associated with radial artery access: a single center experience

Ersan Tatlı[1], Ali Buturak[2], Akif Çakar[1], Bülent Vatan[1], Aleks Değirmencioğlu[2], Tarık Ağaç[1], Harun Kılıç[1], Hüseyin Gündüz[1], Ramazan Akdemir[1]

[1]Sakarya University Faculty of Medicine, Sakarya
[2]Acıbadem University Faculty of Medicine, İstanbul

Introduction: Transradial access provides lower vascular access site complication rates compared with transfemoral access. However, there is lack of data concerning the incidence and treatment strategies of hemorrhagic complications following a TRC in the literature. We aimed to present our experience regarding the vascular hemorrhagic complications and specific treatment strategies in patients who underwent transradial coronary procedure (TRC).
Materials and Method: 10324 patients (2652 patients with percutaneous coronary intervention and 7672 patients with a diagnostic transradial coronary angiography) who underwent a TRC from February 2010 to December 2014 were reviewed to identify cases of hemorrhagic complications associated with radial artery access.
Results: The observed incidence was 0.44% (45 patients) for all hemorrhagic complications. Of these 45 patients; 32 patients (0.31%) presented with large hematoma (>6 cm), 8 patients (0.08%) presented with perforation, 4 patients (0.04%) presented with arteriovenous fistula (AVF), and only 1 case (0.009%) presented with radial artery pseudoaneurysm. 41 of 45 patients were managed with mechanical compression. Surgery was performed in only 3 cases; a patient with a brachial artery perforation leading to compartment syndrome, a patient with AVF resulting in limb ischemia, and a patient with radial artery pseudoaneurysm. A right internal mammarian artery perforation resulting in huge breast hematoma was treated via endovascular graft stent implantation.
Discussion and Conclusion: Hemorrhagic vascular complications are rarely seen during TRC. However, majority of these complications could be managed conservatively without a requirement for surgical reconstruction.

Interventional cardiology / Coronary

OP-105

Comparison of the long-term clinical outcomes between zotarolimus-eluting and paclitaxel-eluting stents in patients with small coronary artery disease

Betül Balaban Koçaş, Kadriye Orta Kılıçkesmez, Ahmet Yıldız, Uğur Coşkun, Murat Ersanlı, Alev Arat Özkan, Tevfik Gürmen

İstanbul University Institute of Cardiology, İstanbul

Introduction: Although drug eluting stents (DES) have significantly reduced the risk of restenosis and target lesion revascularization (TLR) compared to bare metal stents; small vessel diameter continues to be a significant predictor of stent thrombosis, angiographic restenosis and TLR after DES implantation. The use of zotarolimus-eluting stents (ZES) or paclitaxel-eluting stents (PES) have demonstrated better event free survival rates in patients with small vessel disease. However, it remains unclear whether differences exist in the safety and efficacy between ZES and PES groups. The aim of our study was to compare the long term clinical outcomes between ZES and PES in patients with small coronary artery disease.
Materials and Method: Patients treated with ZES or PES in small coronary artery lesions (≤2.5 mm) between November 2004 and December 2011 were retrospectively analysed. Exclusion criterias were as follows; in stent restenosis, aortacoronary bypass graft lesions, STEMI, cardiogenic shock, and <2 years life expectancy. The primary end-point was the composite of major adverse cardiac events (MACE) defined as all cause death, myocardial infarction or TLR. The secondary end points included TLR, target vessel revascularization (TVR), and stent thrombosis at 3 years. Patients were followed for primary and secondary end-points for 3 years by clinical visits or telephone view.
Results: A total of 265 patients were included in this study. 185 patients with 211 lesions treated with ZES and 80 patients with 100 lesions treated with PES. The baseline demographic and clinical features between two groups were similar except hypercholesterolemia which was more frequent (n=69 (37.3%) vs n=17 (21.3%), p=0.01) in ZES group compared to PES group. Angiographic and procedural characteristics as follows: the average number of stents (1.03 ±0.18 vs 1.08 ±0.3, p=0.14) implanted per patients was similar in both ZES and PES groups. The mean stent diameter was smaller (2.44±0.10 vs 2.47±0.07, p=0.02) but the total stent length per lesion was longer (23.54±4.8 vs 21.54±5.5, p=0.001) in ZES and PES groups, respectively. Angiographic success was high in both groups. Postprocedure diameter stenosis was comparable with two devices.During follow-up, MACE occured in 8 patients (10%) in PES group and in 7 patients (3.8%) in ZES group (p=0.07) (Figure 1). The overall rate of cardiac death at 3 years trended lower for ZES compared with PES, however, this difference was not reaching statistical significance (p=0.07). TLR (3.2% vs 2.5%, p=1.00), TVR (5.4% vs 10.0%, p=0.17), stent thrombosis (0.5% vs 2,5%, p=0.21) and myocardial infarction (2.2% vs 2.5%, p=1.00) rates at 3 years were also similar between ZES and PES groups, respectively.
Discussion and Conclusion: In this study, we demonstrated that in small coronary artery disease ZES and PES were associated with similar clinical effectiveness over the entire follow-up period with no significant differences observed in the incidence of clinical events.

Interventional cardiology / Coronary

OP-106

The prognosis of moderate in stent restenosis detected at third month control coronary angiography after stent implantation

Hamidullah Haqmal, Uygar Çağdaş Yüksel, Cengiz Öztürk, Mustafa Demir, Ali Osman Yıldırım, Atila İyisoy

Gülhane Military Medical Academy (GMMA) Ankara, Ankara

Introduction: Stent restenosis is a yet unsolved problem, so there were few reports of prospective randomized clinical studies about comparing the efficacy of third month control angiographic results to detect the prognosis of moderate ISR after BMS implantation. The aim of this study was to evaluate the prognosis of moderate ISR and compare the sixth and third month control coronary angiographic results after bare metal stent (BMS) implantation.
Materials and Method: This study is a retrospectivet study included patients undergone bare metal stent implantation in coronary angiography (CAG) laboratory in our centre. 248 patients who had procedural success of coronary stenting with BMS due to of any indication of percutanous intervention (PCI) were enrolled and moderate degree ISR in the 3th month angiographic follow-up from January 2012 to march 2013 were determined. The baseline characteristics, angiographic and procedural parameters of these patients were determined. Diagnosis of severity of in-stent restenosis was done by two blind interventional cardiologists.
Results: >70% ISR were accepted as severe restenosis at third month control angiography. The patients who did not come back were excluded from the study. Patients were grouped into two groups. "No restenosis" (n=188) group consisted of patients having less then 50% restenosis and "moderate restenosis group" consisted of patients having restenosis 50-70% (n=60) based on the results of third month control coronary angiogram. All patients had exercise treadmill test at sixth months. 49 patients (%19.8) had positive test results. 47 of the 49 patients (95.9%) belonged to restenosis group. All of those 49 patients had coronary angiograms and 45 (%91,8) of those patients required revascularization due to severe restenosis at sixth months. Instent restenosis rates were higher in hypertensive and diabetic patients (%54, p<0.005 and %37 p<0.005 respectively). Correlation analysis revealed lesion type, length, target vessel diameter, implanted number of stents were all related with instent restenosis (p<0.005).
Discussion and Conclusion: We found that restenosis detected at third month control coronary angiography frequently progressed to severe restenosis which required reintervention at sixth months. Meticulous follow up is required in such patients to prevent adverse cardiac events. Our study showed the most powerful predictors of angiographic restenosis of bare-metal stents were the post-procedure minimal luminal diameter, presence of diabetes mellitus, hypertension, lesion type, length, target vessel diameter and number of stents. Thus, all patients with these risk factors may need more aggressive risk modification and aggressive angiographic follow-up.

Interventional cardiology / Coronary

OP-107

Serum resistin and leptin levels increase while serum adiponectin level decreases following elective percutaneous coronary interventions

Ali Buturak[1], Aleks Değirmencioğlu[1], Duhan Fatih Bayrak[1], Tuncay Kırış[2], Ali Rıza Demir[3], Hüseyin Karakurt[3], Mehmet Ertürk[3], Özgür Sürgit[3], Selçuk Yazıcı[4], Emrah Bozbeyoğlu[4]

[1]Acıbadem University School of Medicine, İstanbul
[2]İzmir KÇÜ Atatürk Training and Research Hospital, İzmir
[3]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[4]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul

Introduction: Percutaneous coronary intervention (PCI) represents the prevalent revascularization strategy in patients with ischemic coronary artery disease. PCI is associated with periprocedural myocardial injury

(PMI) which is characterized by significant increases in post-PCI troponin levels. There is data regarding the association between pre-PCI increased low density lipoprotein cholesterol levels and PMI following elective PCI in the literature. Therefore,we aimed to evaluate the correlation between pre-and post-PCI serum resistin, leptin and adiponectin and PMI in patients undergoing elective PCI.

Materials and Method: The final study group consisted of 153 patients (60.6±8.2 years old; 55 female and 98 males). Serum high sensitive troponin T (hs cTnT), resistin, leptin and adiponectin concentrations were measured immediately before PCI (pre-PCI) and 12 hours after PCI (post-PCI). Clinical and procedural data were recorded. Elevation of cardiac troponins above the 99th percentile of upper reference limit in the presence of a normal baseline troponin value was defined as PMI (hs cTnT >14 ng/L).

Results: The median pre-PCI hscTnT, resistin, leptin and adiponectin concentrations were 8.6 ng/L, 7.0 µg/L, 13.1 µg /L, 19.0 mg/L, respectively. The serum hscTnT, resistin and leptin concentrations elevated significantly (p<0.001) 12-hours after PCI. While, serum adiponectin concentrations decreased (p<0.001; paired t-test) to 16.1 mg/L 12-h after PCI. Pre-PCI hs cTnT concentrations were positively correlated (r=0.215; p<0.01) to serum pre-PCI concentrations of resistin. There was no significant correlation between serum pre- and post-PCI hs cTnT concentrations and serum pre- and post-PCI leptin or adiponectin concentrations. Serum resistin, leptin and adiponectin concentrations were similar in patients with no PMI and patients with PMI groups.

Discussion and Conclusion: These results show that serum resistin and leptin levels increase while serum adiponectin level decreases following elective PCI. However, our data does not indicate a correlation between PMI and serum resistin, leptin and adiponectin concentrations.

Interventional cardiology / Coronary

OP-108

The value of the clinical Syntax score in predicting long-term prognosis in patients with ST-segment elevation myocardial infarction undergoing PCI

Gökhan Çetinkal, Sait Mesut Doğan, Cüneyt Koçaş, Okay Abacı, Şükrü Arslan, Betül Balaban Koçaş, Osman Şükrü Karaca, Ahmet Büyük, Şadiye Nur Firidin, Ahmet Yıldız

İstanbul University Institute of Cardiology, İstanbul

Introduction: The Clinical SYNTAX Score (CSS) combines anatomical and clinical risk assessment. This study was designed to evaluate CSS as a predictor of prognosis in patients with ST-elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (p-PCI).

Materials and Method: We evaluated 433 patients who were diagnosed with STEMI and underwent p-PCI. CSS was calculated by multiplying the anatomically derived SYNTAX score (Sx) by the modified ACEF (age, creatinine, ejection fraction) score. Patients were divided into tertiles according to the CSS: CSSLOW ≤14 (n=141), 14< CSSMID ≤26 (n=144) and CSSHIGH >26 (n=148). The primary endpoints were defined as all-cause mortality, myocardial infarction (MI), and cerebrovascular events (CVE) over 15 months' follow-up.

Results: Primary endpoints occurred in 9.2% of patients with CSS ≤14, 12.5% of those with 14 <CSS ≤26, and 28.4% of those with CSS >26 (p<0.001). Kaplan–Meier analysis showed that the CSS >26 group had a significantly higher incidence of primary endpoints (p [log-rank] <0.001). CSS >26 was identified as an independent predictor for all-cause mortality, MI, and CVE (odds ratio [OR] 4.58, 95% confidence interval [CI] 1.65–12.73, p=0.004). Receiver operating characteristic analysis found areas under the curve of 0.66, 0.59, and 0.64 for CSS, Sx, and ACEF (p<0.001, 0.01, <0.001, respectively).

Discussion and Conclusion: CSS may be better than Sx score or ACEF for predicting long-term prognosis in patients with STEMI undergoing primary PCI.

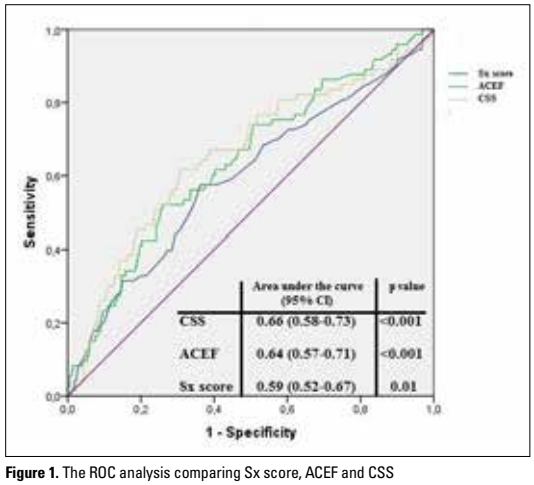


Figure 1. The ROC analysis comparing Sx score, ACEF and CSS

Table 1. Multivariate analysis for the primary end point

	Odds ratio	95 % Confidence interval	p value
Age	0,99	0,97–1,02	0,93
Diabetes mellitus	1,35	0,65–2,8	0,41
Systolic blood pressure	1,02	1,004- 1,026	0,009
EF	1,00	0,96- 1,04	0,99
CSS > 26	4,58	1,65- 12,73	0,004
Creatinin level on admission	1,22	1,00-1,49	0,05

Interventional cardiology / Coronary

OP-109

Predictors of angiographic no-reflow phenomenon in patients who underwent primary percutaneous coronary intervention and long term clinical end-points

Arzu Kalaycı, Erdem Türkyılmaz, Vecih Oduncu, Ali Cevat Tanalp, Can Yücel Karabay, Ayhan Erkol, Atilla Bitigen, Akın İzgi, Cevat Kırma

Kartal Koşuyolu Education and Research Hospital, İstanbul

Introduction: Aim: In this study we aimed to identify the predictors of angiographic no-reflow development in patients who underwent primary percutaneous coronary intervention (p-PCI) and to investigate the long term (median follow-up time 59 months) clinical end-points.

Materials and Method: Study protocol: We retrospectically evaluated 3205 patients (824 females, mean age 58.6) with acute myocardial infarction (STEMI) who admitted within 12 hours of chest pain and treated with p-PCI between January 2006-January 2010. The patients were divided into angiographic no-reflow (final TIMI ≤2 flow) (n=324) and reflow (n=2881) groups.

Results: Results: In multivariate logistic regression analysis; age [Odds ratio (OR) 1.02, 95% confidence interval (CI) 1.00–1.04, p=0.003], Killip class ≥1 (OR 1.99, 95% CI 1.30–3.04, p=0.002), pain to balloon time >4 hr (OR 3.98, 95% CI 2.50–6.32, p<0.001), baseline TIMI ≤1 flow (OR 2.55, 95% CI 1.05–6.22, p=0.038), lesion length ≥15 mm (OR 4.31, 95% CI 2.89–6.41, p<0.001), reference vessel diameter ≥3.5 mm (OR 2.83, 95% CI 1.87–4.27, p<0.001), cut-off occlusion pattern (OR 1.93, 95% CI 1.03–3.62, p=0.04) and SYNTAX score ≥19 (OR 1.76, 95% CI 1.1.23–3.07, p<0.001)] were found as significant predictors for the development of no-reflow phenomenon. In no-reflow patients, in-hospital mortality (10.8% vs 2.9%), heart failure (32.1% vs 8.7%) and severe arrhythmias (9.3% vs 23.1%) were significantly more common (p<0.001, for all). In the long term follow-up, death (33.3% vs 13.4%, p<0.001), advanced heart failure (12.5% vs 5.4%, p<0.001) and stroke (3.5% vs 1.7%, p=0.035) rates were significantly higher in the no-reflow group.

Discussion and Conclusion: Conclusion: The no-reflow predictors that were identified in our study might be usefull in the determination of the patients who could benefit from aggressive pharmaco-invasive therapy. Development of no-reflow is associated to both in-hospital and long term very high morbidity and mortality rates.

Heart failure

OP-110

A holostic model to predict 1-year mortality of HF-rEF patients from data acquired during admission for acute heart failure

Kurtuluş Karaüzüm[1], Dilek Ural 1, Canan Baydemir[1], İrem Yılmaz[2], Güliz Kozdağ[1], Onur Argan[3], Serdar Bozyel[4], Müjdat Aktaş[1], Umut Çelikyurt[1], Ayşen Ağaçdiken Ağır[4]

[1]Kocaeli University Faculty of Medicine, Kocaeli
[2]Yalvaç State Hospital, Isparta
[3]Kocaeli State Hospital, Kocaeli
[4]Kocaeli Derince Training and Research Hospital, Kocaeli

Introduction: Prognostic risk stratification in heart failure is important for identifying patients with a higher mortality and selecting appropriate candidates for device therapy or heart transplantation. However, current risk prediction models are only moderately successful and have C-statistics around 0.66 for predicting mortality. The aim of this study was to establish a 1-year mortality prediction model by integrating data obtained from bedside evaluation, laboratory biomarkers and echocardiographic examination in HF-rEF patients admitted with acute decompansation.

Materials and Method: The study group consisted of 670 acutely decompansated HF-rEF patients (65% male, mean age 65±11 years) followed for at least 1 year (mean follow-up duration 4.7±2.8 years). All of the variables were evaluated with logistic regression analysis and their relative risks were calculated in a stepwise method to built a continuous points-based risk stratification model.

Results: Using data obtained during hospitalization, 19 parameters were identified to be related with 1-year mortality. The risk model was developed among them, 14 variables with a C-index >0.60 (age, NYHA functional class IV, history of cardiopulmonary ressusitation or non-invasive/invasive mechanical ventilatory support, resting respiratory rate, hepatomegaly, CKD-EPI, albumin, tri-iodothyronine, CRP, left and right ventricular EF, E/E', restrictive filling pattern and inability to use beta-blockers) were. Global risk of 1-year mortality was calculated by the sum of the points of each variables. In ROC analysis, the C-statistics of the final model was 0.77 (95%CI 0.71-0.84, p<0.001) for predicting 1-year mortality.

Discussion and Conclusion: A holostic model combining clinical, laboratory and echocardiographic findings as the sum of continuous points is superior to risk models using solely clinical and/or laboratory data or dichotomous variables and may improve risk stratification in HF-rEF patients.

Heart failure

OP-111

The effect of angiotensin II type 2 receptor agonist C21 treatment on Doxorubicin induced heart failure

Necip Ermiş, Onural Özhan, Zeynep Ulutaş, Hakan Parlakpınar

İnönü University Faculty of Medicine, Malatya

Introduction: In heart failure, most of deleterious effect of renin-angiotensin system's on cardiovascular system is carried out by angiotensin (AT) II type 1 receptors. However angiotensin II type 2 receptors have a capability to compensate or antagonize these deleterious effects. Up to now, the AT II type 2 receptor agonist effect in heart failure has not been studied. To test these potential beneficial effects, we planned a

study to evaluate angiotensin II type 2 receptor agonist C21 on doxorubicin (DOX)-induced heart failure in the in vivo rat heart.
Materials and Method: Forty eight rats randomized into five groups (n=8) (1) The control group (2) The DOX group (a single dose of 20 mg/kg), (3) The C21 group, (0.3 mg/kg for 21 days), (4) The DOX + Losartan group (following the single dose of DOX, a 21-day regimen of 20mg/kg losartan) and (5) The DOX +Losartan + C21 group (following the single dose of DOX, 0.3 mg /kg C21 and 20 mg/kg losartan for 21 days). The effects of study drugs were evaluated by echocardiography using fetal echocardiography probe (Figure1).
Results: Left ventricle systolic functions were examined by transthoracic echocardiography both at the beginning and at the end. Only DOX administered group showed reduced left ventricle ejection fraction compared to other study groups and before DOX administration (p=0.009, p
Discussion and Conclusion: The application of AT II type 2 receptor agonist C21 may attenuate the deleterious effects of Renin-angiotensin system on heart failure as detected by transtorasic echocardiograph, at least like AT II type 1 antagonist losartan.

Figure 1. Ecocardiographic image of the rat's heart

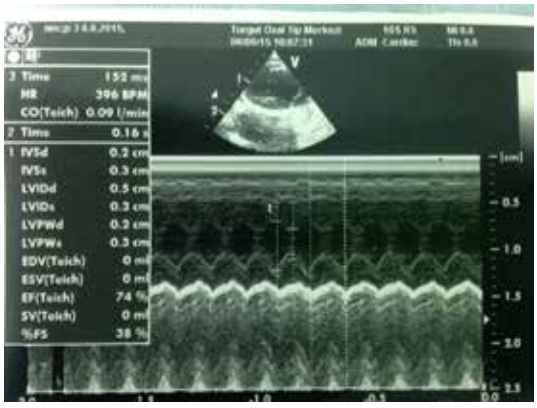


Table 1. M mode echocardiographic measurements

Parameter	Group 1	Group 2	Group 3	Group 4	Group 5
LVEDD (mm) before	4.9 ± .78	4.8 ± .79	4.7± .28	4.8 ± 1.1	5.4 ± .5
LVEDD (mm) after	5.5 ± .76	5.7±.82*	5.1 ± 1.2	4.7±0.71	5.2±.89
LVESD (mm) before	2.6 ± .7	3.0 ±1.1*	2.4 ± .5	2.6 ± .52	3.1 ± .78
LVESD (mm) after	3.4±.9	3.9 ±1.2*	3.0± .75	3.4 ± .52	2.9 ± .6
LV EF (%) before	79.5 ± 8.3	80.8 ± 4.8*	83.1 ± 5.6	81.2 ± 3.2	79.1 ± 9.7
LV EF (%) after	73.6± 12.4	57.2 ± 13.7*,**	73.5±8.5	73.5 ± 6.6	71.1 ± 12.7
Heart rate before (beats per minute)	231 ± 48.8	282 ± 79.6	278 ± 58.4	245 .2 ± 22.7	275± 54.5
Heart rate after (beats per minute)	269 ± 67.8	281 ± 79.6	225.7 ± 23.8	241 ± 60.7	289 ± 78.3

*(p<0.009 between all study grups, **p<0.005 for before and after measurements only in doxorubicine administration group. LVED: Left ventricle enddiastolic volume, LVES: Left ventricle endsystolic volume, LV EF: Left ventricle ejection fraction.

Heart failure

OP-112

Vaccination against flu is associated with better HF management

Hakkı Kaya[1], Osman Beton[2], Hasan Yücel[1], Selda Eraslan[3], Burcu Yağmur[4], Burak Açar[5], Ahmet Çelik[6], Didem Oğuz[7], Mevlüt Demir[8], Kurtuluş Karaüzüm[9], Gürkan Acar[10], İbrahim Sarı[11], Mehmet Birhan Yılmaz[1]

[1]Cumhuriyet University, Faculty of Medicine, Sivas
[2]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[3]Eskişehir Osmangazi University Faculty of Medicine, Eskişehir
[4]Ege University Faculty of Medicine, İzmir
[5]Türkiye Yüksek İhtisas Hospital, Ankara
[6]Mersin University Faculty of Medicine, Mersin
[7]Başkent University Faculty of Medicine, Ankara
[8]Ankara Numune Training and Research Hospital, Ankara
[9]Kocaeli University Faculty of Medicine, Kocaeli
[10]Kahramanmaraş Sütçü İmam University Faculty of Medicine, Kahramanmaraş
[11]Marmara University Faculty of Medicine, İstanbul

Introduction: Vaccination for influenza is recommended in the HF guidelines. However, it remains established whether this is related to better management
Materials and Method: TREAT-HF (Turkish Research Team-Heart Failure) is a network of 16 HF centers in Turkey. Herein, combined cohort of 2013-2014 was evaluated and patients who have flu vaccine (group1) were compared with those who does not have flu vaccine (group2).
Results: Mean age of whole cohort was 60.8±13.8 years. 935 patients responded out of 940 patients to the question of whether they had flu vaccine or not. Of this 935, 339 patients stated that they had flu vaccine, and 596 patients stated that they did not have flu vaccine. Mean EF in group1 and group2 was 32±9% vs. 32±8% (p=0.434). Distribution of NYHA Class (I-II-III-IV) was similar in group1 and group2 (19.1-46.4-30.1-4.3% vs. 11.2-50.4-34-4.5%, respectively, p=0.61). 90.7% of patients in group1 versus 81.1% of patients in group 2 stated that they take their guideline directed medications regularly (p=0.001). Median number of guideline-directed medical therapy (ACEİ or ARB, Beta blocker, MRA, ivabradine) was 3 versus 2 in group 1 and group 2 respectively (p=0.05). 22.1% of patients in group1 versus 14.2% of patients in group 2 had their beta blocker uptitrated to the target dose (p=0.005). Furthermore, 13.5% of patients in group 1 versus 8.6% of patients in group 2 use ivabradine (p=0.035) and as expected patients in group 1 had lower heart rate compared to patients in group 2 (79±15 vs 83±19 bpm respectively, p=0.004). Along with all of these, 93.5% of patients in group1 versus 83.7% of patients in group 2 stated that they keep their medical visits regularly (p=0.001). With regard to nonpharmacological interventions, 61.6% of patients in group 1 versus 50.5% of patients in group 2 stated they keep dietary advices (p=0.008), and along with this, 59.5% of patients in group 1 versus 48.8% of patients in group 2 stated that they take care of salt in their diet (p=0.038). Furthermore, 33.5% of patients in group 1 versus 22.5% of patients in group 2 stated that they exercise (p=0.002), and 66.5% of patients in group 1 versus 41.9% of patients in group 2 stated that they weigh themselves regularly (p<0.001).
Discussion and Conclusion: Flu vaccine is associated with better nonpharmacological and pharmacological management of HF.

Heart failure

OP-113

Heart failure in outpatients with non-valvular atrial fibrillation: results from the RAMSES study

Volkan Doğan[1], Özcan Başaran[1], Ezgi Kalaycıoğlu[2], İsmail Bolat[3], Fatma Özpamuk Karadeniz[4], Mehmet Hamidi[5], Gökhan Aksan[6], Hacı Murat Güneş[7], Adem Tatlısu[8], Zeki Şimşek[9], Şeref Ulucan[10], Tolga Çimen[11], Tolga Sinan Güvenç[12], Cevat Kırma[13], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[3]Fethiye State Hospital, Muğla
[4]Şanlıurfa Balıklıgöl State Hospital, Şanlıurfa
[5]Bandırma State Hospital, Balıkesir
[6]Şişli Etfal Training and Research Hospital, İstanbul
[7]İstanbul Medipol University, İstanbul
[8]Sivas Numune Hospital, Sivas
[9]Kartal Yavuz Selim State Hospital, İstanbul
[10]Mevlana University Faculty of Medicine, Konya
[11]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[12]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[13]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Non-valvular atrial fibrillation (NVAF) and heart failure (HF) have been recognized as the two epidemics of modern cardiovascular medicine. Both conditions frequently coexist because HF is a major risk factor for NVAF. Systemic anticoagulation is routinely recommended for patients with HF and NVAF. In this study, we aim to compare the antithrombotic treatment strategies in NVAF patients with or without history of HF.
Materials and Method: We studied the clinical data of 6264 Turkish patients with NVAF participating in the multicenter RAMSES (ReAl-life Multicenter Survey Evaluating Stroke prevention strategies in Turkey) study. Patients were excluded if they had valve replacement or mitral stenosis. Demographic properties, comorbid diseases (chronic obstructive pulmonary disease, coronary heart disease, hypertension, diabetes mellitus), anticoagulant therapies, history of major bleeding and stroke, CHA_2DS_2VASc and HAS-BLED scores were recorded and compared between patients with and without HF.
Results: Heart failure found to be present in 1386 (22.1%) of patients with NVAF. Patients with HF and NVAF were older and had more comorbid diseases except for hypertension. Non-vitamin K antagonist oral anticoagulants were observed to be less preferred in HF patients. History of major bleeding was more common in patients with HF.
Discussion and Conclusion: Heart failure affects every one-fifth of ambulatory patient with NVAF. Although HF patients had more comorbidities and higher CHA_2DS_2VASc scores oral anticoagulant therapy was less preferred which can be explained by the fear of bleeding.

Table 1. Patient characteristics

	With Heart Failure (n=1386)	Without Heart Failure (n=4878)	P value
Male (%)	751 (54.2)	2014 (45.8)	0.001
Age (mean±SD)	70.9±10.6	69.3±10.7	0.001
Smoker (%)	254 (18.3)	767 (15.7)	0.023
Chronic obstructive pulmonary disease (%)	459 (33.2)	986 (20.3)	0.001
Atrial fibrillation type (%)			0.001
First attack	27 (2)	263 (5.4)	
Paroxysmal	102 (7.4)	754 (15.6)	
Persitant or permanent	1242 (90.6)	3818 (79)	
Coronary heart disease (%)	746 (53.8)	1079 (22.2)	0.001
Hypertension (%)	935 (67.6)	3367(69.1)	0.278
Diabetes mellitus (%)	382 (27.6)	1007 (20.7)	0.001
CHA_2DS_2VASc score (mean±SD)	4.3 ±1.54	3 ±1.49	0.001
HAS-BLED score (mean±SD)	1.96±1.2	1.56±1	0.001
Anticoagulant therapy (%)			0.001
Non-vitamin K antagonist oral anticoagulants	442 (32.1)	1895 (39.1)	
Warfarin	497 (36.1)	1674 (34.5)	
No anticoagulant therapy	438 (31.8)	1277 (26.4)	
History of major bleeding (%)	96 (7)	208 (4.3)	0.001
History of stroke (%)	190 (13.8)	941 (13.2)	0.560

Heart failure

OP-114

The relation between serum sodium levels and clinical outcomes in Turkish patients hospitalized for heart failure: a multi-center observational study

Burçak Kılıçkıran Avcı[1], Murathan Küçük[2], Haldun Müderrisoğlu[3], Mehmet Eren[4], Merih Kutlu[5], Mehmet Birhan Yılmaz[6], Yüksel Çavuşoğlu[7], Zeki Öngen[1]

[1]İstanbul University Cerrahpaşa Faculty of Medicine, İstanbul
[2]Akdeniz University, Faculty of Medicine, Antalya
[3]Başkent University Faculty of Medicine, Ankara
[4]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[5]Karadeniz Technical University Faculty of Medicine, Trabzon
[6]Cumhuriyet University, Faculty of Medicine, Sivas
[7]Eskişehir Osmangazi University Faculty of Medicine, Eskişehir

Introduction: The purpose of the study was to analyze the prevalance of hyponatremia and related one-year outcomes of patients hospitalized for heart failure (HF) with reduced ejection fraction (EF) in Turkish patients.
Materials and Method: A total 500 hospitalized patients with decompensated HF were consecutively included in a web based retrospective registry at 19 participating hospitals. Patients were categorized according to serum sodium level (sNa) on admission day as normonatremic (sNa ≥135 mEq/L) and hyponatremic (sNa <135 mEq/L). Patient characteristics, 1-year all-cause mortality, re-hospitalization rates and the impact of the changes in sNa at the time of discharge to clinical outcomes were examined.
Results: Hyponatremia was observed in 29% of patients. Patients with hyponatremia had lower blood pressures, creatinine clearance and left ventricular EF and higher serum creatinine, BUN levels on admission compared to those with normonatremia. During hospitalization IV inotrope and diuretic use were significantly higher in patients with hyponatremia. Hyponatremia was associated with higher 1-year all-cause mortality (14% vs 2.6% respectively, p<0.001) (figure 1) and re-hospitalization rates (46.9% vs 33.7% respectively, p=0.005). After adjustment for covariates, hyponatremia was independently associated with 1-year all-cause mortality [adjusted HR 4.762, 95% CI 1,941-11,764, p=0.001]. At hospital discharge, only 50.8% of hyponatremic patients were corrected to normonatremia (sNa ≥135 mEq/L). Those with persistent hyponatremia had the highest all-cause mortality (p<0.001) (Figure 2).
Discussion and Conclusion: In this study, it is demonstrated that hyponatremia is relatively common and is associated with increased 1-year all-cause mortality and re-hospitalization rates among Turkish patients hospitalized with decompensated HF with reduced EF. Approximately half of the patients with initial low sNa had persistent hyponatremia at the discharge and these patients had the worst clinical outcomes.

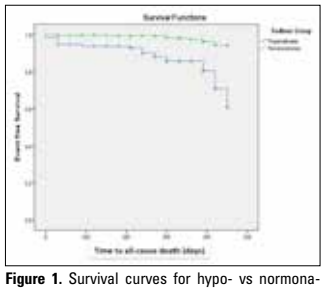


Figure 1. Survival curves for hypo- vs normonatremia

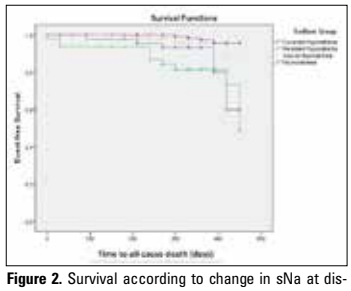


Figure 2. Survival according to change in sNa at discharge

Heart failure

OP-115

Presystolic tricuspid regurgitation is associated with impaired functional capacity and seattle heart failure score among patients with heart failure

Serdar Fidan[1], Muhammet Tellice[1], Anıl Avcı[1], Gökhan Alıcı[1], Birol Özkan[1], Göksel Acar[1], Murat Bülent Rabuş[1], Ali Metin Esen[2]

[1]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul
[2]Memorial Hospital, İstanbul

Introduction: Presystolic (diastolic) tricupid regurgitation (PTR) is an echocardiographic finding that is mainly observed in atrioventricular conduction abnormalities due to positive ventricular-to-atrial pressure gradient occurring during diastole. The prevalence and clinical significance is not known in patients with dilated cardiomyopathy. The aim of our study was to evaluate the relations between presystolic (diastolic) tricuspid regurgitation, functional capacity and Seattle Heart Failure Score among patients with heart failure.
Materials and Method: A total of 69 patients with dilated cardiomyopathy were included into the study. The patients with hist7ory of acute coronary syndrome in last three months, congenital heart disease, primary pulmonary hypertension, mechanical mitral and/or tricuspid valves, rheumatic mitral or tricuspid valve disease, severe pulmonary valve insufficiency, atrioventricular conduction abnormalities, and implantable cardiac devices were excluded from the study. To evaluate exact effect öf PTR on study group, these specified exclusion criterias are determined according to the previous studies showing common causes ofPTR. Laboratory tests and detailed echocardiographic examination including both ventricles were conducted in the same day. Estimated 1and 5 year survival scores were calculated by using the Seattle Heart Failure Model Score (SHFMS).
Results: A total of 69 patients were analysed. The prevalence of PTR was 20% in all patients with dilated cardiomyopathy. Patients with NYHA I or II functional class regarded as mild heart failure (n=34) whereas patients with NYHA III or IV functional class regarded as moderate to severe heart failure (n=35). Calculated 1 year as well as 5-year SHFMS were significantly lower in patients with NYHA class III or IV (p<0.001, p<0.001). Echocardiographic parameters such as E/E', TAPSE, RV FAC, PAPs, PVR and presence of PTR were statistically different between the two groups. PTR was observed only in 1 case in patients with NYHA class I-II whereas the number of cases with PTR was 13 in patients with NYHA class III-IV (p<0.001). Moreover, PTR was an independent predictor for poor funcitonal capacity in multivariate regression analysis (p=0.018). When patients were categorized into two groups whether they had PTR, patients with PTR (n=14) showed significantly impaired SHFMS (p<0,001) and poor functional status (p<0,001) according to the patients without PTR (n=55). There was a remarkable increase in the number of patients with NYHA classes III and IV (6 and 7, respectively) according to the patients with NYHA class I and II (0 and 1, respectively) in the group of PTR. Echocardiographic parameters related to the right ventricle such as TAPSE, RV FAC, RV Sm values were significantly lower in patients allocated to the group of PTR (p=0,047, p<0,01, p<0,01, respectively). RV FAC was identified as an independent predictor for the development of PTR (p<0,001).
Discussion and Conclusion: The prevalence of PTR is not uncommon in patients with dilated cardiomyopathy. It is found to be independently associated with heart failure severity and. Seattle Heart Failure Score. Further studies are needed to clarify the role of PTR in the course of heart failure.

Heart failure

OP-116

Effect of spironolactone on plasma apelin levels in patients with chronic systolic heart failure

Mustafa Topuz[1], Mehmet Çoşgun[1], Atilla Bulut[1], Ömer Şen[1], Ayşe Nur Topuz[2], Murat Çaylı[1]

[1]Adana Numune Training and Research Hospital, Adana
[2]Çukurova University, Faculty of Medicine, Adana

Introduction: Heart failure is a clinical syndrome defined as the inability of the heart to maintain a sufficient pumping activity to meet the body's metabolic demands under normal filling pressure. Studies have shown that patients with CSHF have significantly higher levels of aldosterone secretion than normal patients. When chronically exposed to excess Aldosterone, adipose tissue, especially visceral fat, may display disturbed pro- and anti-inflammatory adipokine profiles. Apelin has been proposed as a novel beneficial adipokine and it exerts the most potent positive inotropic action (among all identified inotropic agent) in normal hearts suggests a role for reduced apelin levels in the pathogenesis or worsening of CSHF. In this study we wonder about the blockage of aldosterone using by spironolactone in HF patients could have any effect on serum Apelin-12 levels.
Materials and Method: Eighty patients were previously diagnosed with CSHF were included. Patients were randomized into two groups according to either receiving mineralocorticoid receptor antagonist (MRA) (spironolactone 25 mg/daily) in addition to standard medical theraphy (SMT) or only SMT in previous six month. Patients has already taken MRA in addition to SMT were served as MRA group and patients has taken only SMT were served as Non-MRA group. Patient's blood samples were collected for measuring of serum Apelin-12 levels.
Results: Total 49 patients (61%) were male and mean age of study patients was 62±10.5 year old. The mean LVEF was 34.2±6.2%. Serum Apelin-12 levels were found significantly higher in MRA group than Non-MRA group (respectively, 4.2±2.6 ng/ml vs 2.3±1.8 ng/ml, p<0.001).
Discussion and Conclusion: According to the current study, apelin which has favorable effect on cardiovascular system and hemodynamic statue is increased by spironolactone theraphy. MRAs should be used for all HF patiens as recommended guidelines also due to leading to increase serum Apelin-12 levels.

Table 1. Baseline laboratuary findings of subjects

	MRA Group (n=40)	Non- MRA Group (n=40)	
	Xx±SS	Xx±SS	P
hsCRP (mg/dL)	1,62±0,78	1,75±0,75	0.474
NT Pro-BNP(ng/dL)	811,4±765,81	872,6±792,03	0.681
Apelin-12 level (ng/ml)	4,2±2,64	2,3±1,81	<0.001
Duration of HF (mean month)	50,3	42,6	0.106
HF, type (ischemic/nonischemic, n)	31/9	26/14	0.217

Interventional cardiology / Coronary

OP-117

The angiographic benefits of diltiazem on coronary artery flow and myocardial perfusion in isolated coronary artery ectasia

Özgür Ulaş Özcan, Yusuf Atmaca, Hüseyin Göksülük, İrem Müge Akbulut, Nil Özyüncü, Çetin Erol

Ankara University, Faculty of Medicine, Ankara

Introduction: Isolated CAE may be associated with stable or unstable coronary events despite absence of epicardial coronary stenosis. Impaired coronary flow dynamics and myocardial perfusion have been demonstrated in stable patients with ectatic coronary arteries. We aimed to assess whether epicardial flow and tissue level perfusion would be improved by diltiazem in myocardial regions subtended by the ectatic coronary arteries among patients with isolated coronary artery ectasia (CAE).
Materials and Method: A total of 60 patients with isolated CAE were identified among 9780 patients who underwent elective coronary angiography. Patients were randomized to 5 mg of intracoronary diltiazem or saline. Coronary blood flow of the microvascular network was assessed by using myocardial blush grade (MBG) technique. The thrombolysis in myocardial infarction (TIMI) flow grade and TIMI frame count (TFC) were used to assess epicardial coronary flow.
Results: MBG (from 2.4 to 2.6, p=0.019), TIMI flow grades (from 2.4 to 2.8, p<0.001) and TFC (from 35.2 to 25.9, p<0.001) were significantly improved after diltiazem, whereas no significant change was noticed after saline (from 2.4 to 2.4, p=0.86 for MBG, from 2.3 to 2.3, p=0.71 for TIMI flow grade and from 34.8 to 33.1, p=0.43 for

TFC). Percent reduction of TFC was significantly greater with diltiazem compared to saline (26±11% after diltiazem vs 5±9% after saline, p<0.001).
Discussion and Conclusion: Diltiazem provided amelioration of the altered coronary flow dynamics, which was suggested as the pathophysiologic influence of CAE. The favorable effects of the diltiazem on myocardial perfusion were observed at both epicardial and tissue levels.

Table 1. Changes in hemodynamic and angiographic parameters

	Diltiazem			Saline		
Parameter	Before injection (n=30) (meanSD)	After injection (n=30) (meanSD)	P	Before injection (n=30) (meanSD)	After injection (n=30) (meanSD)	P
Heart rate beats/min	76.3±10.0	67.5±7.2	<0.001	75.7±9.3	74.2±7.1	0.48
SBP, mmHg	135.8±12.7	125.5±12.1	0.002	133.6±11.0	134.1±10.1	0.85
DBP, mmHg	73.4±6.3	68.2±7.1	0.004	72.9±5.1	73.0±5.3	0.90
MBG	2.4±0.5	2.6±0.3	0.019	2.4±0.7	2.4±0.7	0.86
TIMI flow grades	2.4±0.6	2.8±0.4	<0.001	2.3±0.7	2.3±0.7	0.71
TFC	35.2±8.4	25.9±7.5	<0.001	34.8±7.4	33.1±8.4	0.43

Interventional cardiology / Coronary

OP-118

Percutaneous coronary intervention or bypass surgery in isolated proximal left anterior

Mehmet Timur Selçuk[1], Enis Grbovic[1], Orhan Maden[1], Hatice Selçuk[1], Murat Gül[2], Kevser Balcı[1], Mustafa Balcı[1]

[1]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[2]Van Ercis State Hospital, Van

Introduction: The aim of this study was to assess the 4-year long-term safety and effectiveness of fractional flow reserve (FFR)-guided percutaneous coronary intervention (PCI) and FFR-guided coronary artery bypass graft surgery (CABG) for the treatment of proximal left anterior descending (LAD) lesions.
Materials and Method: The study included 129 consecutive patients with functionally significant (FFR ≤0.80) isolated proximal LAD stenosis s (PCI, 88 patients vs. CABG, 49 patients). Four years, data were obtained with respect to the primary endpoint (death, myocardial infarction, stroke, target vessel revascularization).
Results: Follow-up was conducted for 129 patients at a median time of 47±12 months. There were no significant differences in the primary composite endpoint, death and target vessel revascularization between PCI and CABG groups. However, higher myocardial infarction rate in the PCI group (PCI: #(32%), CABG: #(15%0; p=0.003); higher stroke rate in the CABG group (CABG: %7, PCI %0; p=0.030) was observed.
Discussion and Conclusion: At 4-year follow-up, PCI and CABG in isolated proximal LAD lesions yielded similar long-term outcomes regarding the primary composite clinical endpoint. Myocardial infarction was more frequent in the PCI group, and stroke was more common in the CABG group.

Table 1. Clinical events at follow-up

	FFR-guided CABG	FFR-guided PCI	P value
MI	6 (15%)	28 (32%)	0.003
Death	6 (15%)	7 (8%)	0.345
Stroke	3 (7%)	0 (0%)	0.030
MACEs	0 (0%)	2 (2%)	1.000
TVR	4 (10%)	18 (21%)	0.132
Death/MI	11 (27%)	31 (35%)	0.343
Death/MI/CVA	13 (32%)	31 (35%)	0.695
MI/Death/CVA/TVR	13 (32%)	31 (35%)	0.695
Death/CVA	8 (20%)	7 (8%)	0.057
MI/CVA	9 (22%)	28 (32%)	0.249

Table 2. Baseline clinical characteristics

Variables	CABG (n=41)	PCI (n=88)	P value
Age	63.20±10.94	62.93±7.96	0.877
Female/Male Sex(*n)*	7/34	24/64	0.207
Glucose	116.52±32.19	138.41±75.07	0.410
Creatinine	1.03±0.24	0.91±0.24	0.002
Total Cholesterol	183.34±49.85	189.02±54.36	0.561
LDL Cholesterol	115.02±42.29	116.29±43.04	0.879
HDL Cholesterol	40.88±12.35	40.93±12.35	0.574
Triglycerides	154.29±99.90	153.82±78.32	0.838
Hypertension	22 (54%)	66 (75%)	0.015
Diabetes Mellitus	14 (34%)	41 (47%)	0.183
Smoking Habit	28 (68%)	43 (50%)	0.039

Cardiovascular surgery

OP-119

Evaluation of the relationship between the levels of high-sensitivity C-reactive protein and saphenous vein graft disease

Onur Kadir Uysal[1], Buğra Özkan[2], Durmuş Yıldıray Şahin[2], Mevlüt Koç[2], Kamuran Tekin[2], Murat Çaylı[2]

[1]Kayseri Training and Research Hospital, Kayseri
[2]Adana Numune Training and Research Hospital, Adana

Introduction: In this study, we aimed to evaluate the relationship between the levels of high-sensitivity C-reactive protein (hs-CRP) and saphenous venous graft disease (SVGD).
Materials and Method: A total of 78 patients (54 males, 24 females; mean age 60.4±9.4 years; range 37 to 78 years) with previous history of coronary artery bypass graft (CABG) surgery who underwent coronary angiography based on predetermined objective clinical criteria were included. Risk factors leading to atherosclerosis were questioned and biochemical tests were studied in all patients. A 50% or more stenosis in at least one of the saphenous vein grafts was defined as SVGD. The patients were divided in two groups according to the presence of SVGD (group 1), and the absence of SVGD (group 2).
Results: When we compared the demographic characteristics and laboratory findings of both groups, body mass index (BMI), total cholesterol/high-density lipoprotein (HDL) cholesterol ratio, uric acid (UA) and hs-CRP levels were significantly higher, while HDL cholesterol level was significantly lower in group 1. Multivariate logistic regression analysis showed that BMI, UA and hs-CRP levels were independent predictors of SVGD (hs-CRP OR: 1.522, p<0.01, UA OR: 1.48, p=0.01, BMI OR: 1.31, p=0.04). The ROC analysis demonstrated that a 0.8 mg/dL hs-CRP cut-off value indicated SVGH with a 80% sensitivity and 85% specificity rate.
Discussion and Conclusion: In our study, hs-CRP was found to be the most powerful predictor of SVGD. High-sensitivity-C-reactive protein is a noninvasive, reliable and useful parameter in the prediction and monitoring of SVGD.

Cardiovascular surgery

OP-120

Nebivolol compared with metoprolol for erectile function in males undergoing coronary artery bypass graft

Evren Tecer[1], Mustafa Aldemir[1], İbrahim Keleş[1], Mustafa Karalar[1], Fahri Adalı[1], Mehmet Bilgehan Pektaş[1], Ali İhsan Parlar[2], Osman Tansel Darçın[1]

[1]Afyon Kocatepe University Faculty of Medicine, Afyon
[2]Private Acute Heart Hospital, İzmir

Introduction: The aim of this study was to evaluate the effects of two widely used adrenoceptor beta-blockers, namely nebivolol and metoprolol on erectile function in males undergoing coronary artery bypass grafting.
Materials and Method: Sixty patients scheduled for coronary artery bypass grafting surgery were randomly assigned into two groups: the N group, which received 5 mg of nebivolol orally for 2 weeks before surgery plus 12 weeks after surgery or the M group, which received 50 mg of metoprolol orally for the same period. All patients were evaluated by the erectile function domain of the International Index of Erectile Function (IIEF) at time of admission (before starting beta blocker) and three months after surgery.
Results: In the metoprolol group, the mean IIEF-5 score decreased significantly from a baseline of 15.2±5.8 to 12.9±5.8 (p<0.001), but in the nebivolol group this difference was not statistically significant (from baseline 12.9±5.5 to 12.4±5.5 and p=0.053). For all patients the mean IIEF-5 score decreased significantly from a baseline of 14.0±5.7 to 12.6±5.6 (p<0.001).
Discussion and Conclusion: While the selective β1-blocker metoprolol significantly affects erectile function, the vasodilating selective β1-blocker nebivolol exerts protective effects on erectile function against the disruptive effects of CPB in patients undergoing CABG.

Table 1. Comparison of IIEF-5 scores between two groups

	Preoperative IIEF-5	Postoperative IIEF-5	P-value
All Patients, n=60	14.0±5.7	12.6±5.6	<0.001
Group N, n=30	12.9±5.5	12.4±5.5	0.053
Group M, n=30	15.2±5.8	12.9±5.8	<0.001

Cardiovascular surgery

OP-121

Syntax score predicts postoperative atrial fibrillation in patients undergoing on-pumping isolated coronary surgery

Çetin Geçmen[1], Gamze Babur Güler[2], Emrah Erdoğan[1], Suzan Hatipoğlu[1], Ekrem Güler[2], Fatih Yılmaz[1], Tuba Unkun[1], Murat Çap[1], Ruken B. Bakal[1], Tülay Bayram[1], Rezzan Acar[1], Özkan Candan[1]

[1]Kartal Koşuyolu Education and Research Hospital, İstanbul
[2]İstanbul Medipol University, İstanbul

Introduction: Atrial fibrillation (AF) is the most common arrhythmia following coronary artery bypass graft surgery (CABG). The value of SYNTAX score to predict Postoperative atrial fibrillation (PoAF) has not been clearly addressed. We aimed to evaluate this relationship in patients undergoing isolated CABG.
Materials and Method: A total of 94 isolated on-pump CABG patients, who are in sinus rhythm and older than 18-years old were enrolled in the study. Surgical revascularization was performed in the presence of at least 70% stenosis lesion on at least one epicardial coronary artery including left anterior descending coronary artery (LAD) or at least 50% stenosis on left main coronary artery (LMCA). PoAF was described as irregular, fast oscillations or fibrillatory waves instead of regular P waves at ECG. An AF episode lasting longer than 5 minute was accepted as PoAF. SYNTAX score was calculated from coronary angiographic views before CABG.
Results: Mean age of the 94 (22 female, 72 male) patients enrolled was 62±8 years. The median SYNTAX score of the patients enrolled was 21, [56-5]. PoAF was observed in 31 (33.3%) patients. Univariate logistic regression showed that age, Chronic obstructive pulmonary disease (COPD), red blood cell distribution width (RDW), urea, initial troponin I, peak post-operative troponin I, left atrial diameter and SYNTAX score were significantly associated with the frequency of PoAF following CABG. An independent association was identified with age (β:0.088, p:0,023, OR : 1.092, 95% CI [1.012-1.179]), COPD (β:2.222, p:0,003, OR: 9.228, 95% CI [2.150-39.602]) and SYNTAX score (β:0.130, p:0,002, OR: 1.139, 95% CI [1.050-1.235]).
Discussion and Conclusion: This study showed that SYNTAX score was higher in the post-operative AF group. SYNTAX score might be helpful for the prediction of PoAF.

Congenital heart diseases

OP-122

Pediatric coronary revascularization procedures

Tayyar Sarıoğlu[1], Ahmet Arnaz[2], Yusuf Kenan Yalçınbaş[2], Ersin Erek[1], Emrah Şişli[2], Yasemin Türkekul[2], Arda Saygılı[1], Özlem Saygılı[2], Ayşe Sarıoğlu[2]

[1]Medicine School of Acıbadem University, İstanbul
[2]Acıbadem Bakırköy Hospital, İstanbul

Introduction: Various coronary revascularization procedures are required during repair of some congenital cardiac malformations and ischemic iatrogenic coronary lesions in children. Information regarding this subject is rather limited in the literature. This study aims to report our experience and findings which cover a period of more than 20 years.
Materials and Method: Various coronary revascularization procedures were performed on 28 pediatric patients between 1995 and 2015. Patients' ages ranged from 7 days to 15 years. Coronary artery bypass graft was performed on 8 patients (6 LIMAs and 2 safen veins, 5 of which were life-saving urgent interventions), Takeuchi modifications were performed on 8 patients due to anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA), pericardial tube interposition was performed on 4 patients during coronary translocation interventions, and pericardial patch augmentation was performed on 5 patients. Also, unroofing due to anomalous origin of right or left main coronary, was performed on 4 patients. Patients' main pathologies and coronary surgery procedures are summarized in Figure1.
Results: Three patients (10.7%) died in perioperative and early postoperative period (2 life-saving urgent interventions). Mean follow-up period was 12.5 years (24 months to 20.5 years). Apart from echocardiography, patients were monitored with conventional angiography (8), computed tomography angiography (3), and myocardial scintigraphy (3). No ischemic symptom or death were observed in late period (figure2).
Discussion and Conclusion: In the pediatric age group, coronary procedures are life-saving interventions which require particular care due to the complexity of main pathologies, small anatomic structures, difficulty of surgical techniques and manipulations, and high risk of early period complications. In the late period, patients should be monitored with coronary perfusion scintigraphy, computed tomography, magnetic resonance and conventional angiography in terms of coronary ischemic symptoms.

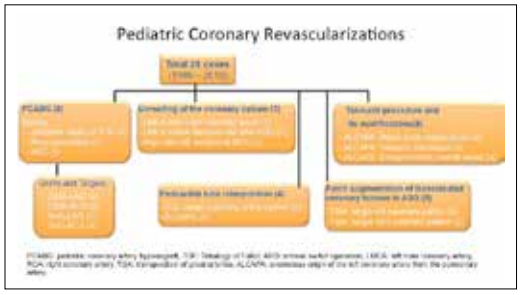


Figure 1. Pediatric coronary revascularization procedures

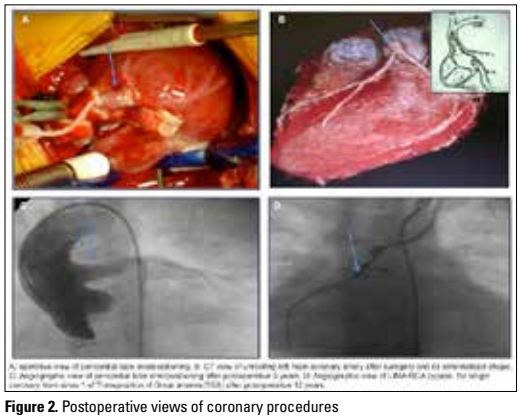


Figure 2. Postoperative views of coronary procedures

Coronary artery disease / Acute coronary syndrome

OP-123

Long – term prognostic significance of the distortion of terminal qrs complex on admission ecg in stemi and correlation with grace score

Ahmet Yılmaz[1], Kenan Demir[1], Ahmet Avcı[1], Nazif Aygül[1], Abdullah Tunçez[1], Recep Karataş[2], Fikret Keleş[3], Mustafa Çelik[4], Bülent Behlül Altunkeser[1]

[1]Selçuk University Selçuklu Faculty of Medicine, Konya
[2]Bayburt State Hospital,Bayburt
[3]Bolu State Hospital, Bolu
[4]Iğdır State Hospital, Iğdır

Introduction: Electrocardiography (ECG) has been used as a reliable and inexpensive tool in both diagnostic and prognostic evaluations of ST-segment elevation myocardial infarction (STEMI). Early risk stratification is important in the management of patients with STEMI. Terminal QRS distortion [grade 3 ischemia (G3I)] defined by Sclarovsky et al. and Birnbaum et al. Previous studies showed that patients with STEMI who have G3I on the admission electrocardiogram have worse prognosis, less benefit from thrombolysis, less benefit from primary percutaneous coronary intervention (pPCI), higher in hospital mortality, larger infarct areas, less myocardial salvage, and poor myocardial and epicardial perfusion when receiving thrombolytic treatment and undergoing pPCI. Our aim in this study is to analyze the admission ECG in STEMI based on distortion of terminal portion of QRS and its correlation to in hospital and 36 month follow up mortality and correlation to GRACE score.
Materials and Method: 216 consecutive patients of STEMI were classified into subjects with distortion of terminal QRS (Group I), and without distortion of terminal QRS (Group II). Terminal QRS distortion is defined as emergence of J point at 50% of the R wave amplitude in leads with qR configuration or absence of the S waves, in leads with Rs configuration in two consecutive leads. Multivariable logistic regression analysis was performed to assess the independent associations between terminal QRS distortion on the admission ECG and in-hospital and 36-month mortality and correlation to GRACE score.
Results: Out of 216 patients of STEMI, 93 (43.0%) had distortion of QRS. There were 22 deaths in hospital (10.1%) and total 57 deaths in 36 months follow up (26.3%). Hospital mortality was found to be significantly more in subjects with distortion than those without (p=0.005). 36 month follow up mortality was found to be significantly more in subjects with distortion (p=0.012). Patients with QRS distortion have higher Killip class and higher GRACE score on admission (p<0.05). Acute heart failure and intra aortic ballon pump insertion rates are significantly higher in subjects with distortion (p<0.05). Also higher creatine (p=0.013), lower ejection fraction (p=0.01) and lower systolic and diastolic blood pressure (p<0.001) levels on admission were found to be significantly more in subjects with distortion. With multiple logistic regression analysis using QRS distortion as a dependent variable and all studied risk factors as independent variables, age and male sex were variables found to be statistically significant (p<0.05)
Discussion and Conclusion: In conclusion, ECG on admission is a simple, cheap, universally available investigation that can predict the in hospital and long term prognosis in STEMI. Grade 3 ischemia was independently related to high mortality rates and high GRACE score. We suggest that this study is the first long term follow up study and a strong correlation with QRS distortion and mortality rates was shown in this study.

Coronary artery disease / Acute coronary syndrome

OP-124

Insulin resistance is significantly associated with higher SYNTAX score in non-diabetic patients with acute myocardial infarction

Ahmet Gündeş, Ahmet Çelik, Emrah Yeşil, Türkay Özcan

Mersin University Faculty of Medicine, Mersin

Introduction: Insulin resistance represents the earliest detectable abnormality in type 2 diabetes.Recent evidence supports a direct proatherogenic effect of IR (insulin resistance) on the coronary vasculature, but the relation between IR and angiographic atherosclerosis in a real-world clinical setting is uncertain. We aimed to investigate the association between SYNTAX score and insulin resistance measured by Homa index in the onset of the myocardial infarction in nondiabetic patients.
Materials and Method: We enrolled 85 non diabetic patients with acute myocardial infarction. Patients were divided into two groups according to their HOMA index. Group 1 included 43 patients and Homa-IR was 1.8. HOMA-IR was calculated by fasting blood glucose (mg/dl) x Fasting insulin (µU/l/405. Blood samples were taken after 12 hours fasting at the intensive coronary care unit follow up.Coronary angiography was performed and SYNTAX score was calculated by SYNTAX score calculator 2.1.1
Results: In both groups, age, sex, hypertension, hyperlipidemia, smoking, family history were similar (p>0.05). Body mass index and waist circumference were statistically significantly higher in patients at group 2 compared to in patients at group 1 Fasting blood glucose(FBG), total cholesterol,HOMA, insulin and HbA1c were significantly higher in patients in Group 2 compared to Group 1 patients (Fig. 2).The mean SYNTAX score of patients in Group 1 was 10.3±5.0 and 16.3±6.7 in patients in Group 2 (p<0.001). There were a significant positive correlation between SYNTAX score and HOMA-IR (r=0.338, p=0.002) (Fig. 1)The patients with IR most likely had left anterior descending artery as culprit lesion (p=0.055). The number of diseased vessels (>50 stenosis) was 1,56±0,7 in Group 1, and 1,98±0,8 in Group 2 (p=0,013).
Discussion and Conclusion: The acute MI patients who had IR without diabetes mellitus had higher SYNTAX scores.HOMA index is significantly associated with SYNTAX score in non-diabetic acute MI patients.

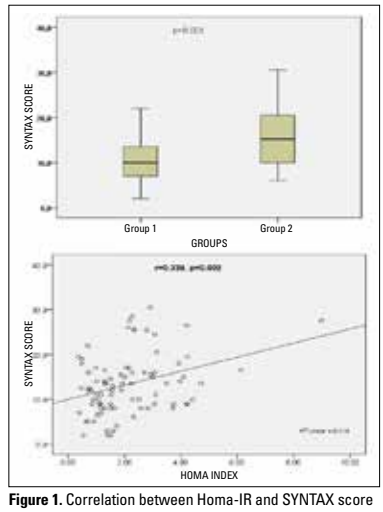


Figure 1. Correlation between Homa-IR and SYNTAX score

Table 1. Clinic characteristics of patients

	Group 1 (n=43)	Group 2 (n=42)	P value
Age(yıl)	56±12	58±11	0,490
Sex(M/F)	35/8	29/13	0,143
Waist circumference (cm)	**97,9±10,7**	**104,2±10,1**	**0,007**
BMI(kg/m2)	**26,9±3,6**	**29,5±3,7**	**0,002**
Hypertansion (%)	27,9	42,8	0,112
Hyperlipidemia(%)	62,8	71,4	0,269
Smoking (%)	58,1	57,1	0,550
Family History(%)	26,6	19	0,322
Heart Rate (dk)	75±10	78±10	0,156
Systolic T. (Mmhg)	123±16	129±17	0,127
Diastolic T.(Mmgh)	79±13	81±12	0,644
Ejection Fr.	47±6	46±7	0,576

	Group 1	Group 2	P value
FBG(mg/dl)	**95,4±11**	**107,3±14**	**<0.001**
T.cholesterol(mg/dl)	**174,9±38**	**191,9±37**	**0,042**
LDL(mg/dl)	115±31	124,3±31	0,182
HDL(mg/dl)	33,9±8	35,3±7	0,400
Triglyceridesmg/dl)	138,1±70	175±112	0,075
HOMA	**1,07±0,3**	**3,19±1,3**	**<0,001**
Insulin (mIU/ml)	**6,8±11**	**13,5±10**	**0,006**
HbA1c	**5.41±0,3**	**5.61±0,3**	**0,021**
Creatin(mg/dl)	0,7±0,1	0,8±0,1	0,354
AST(mg/dl)	64±25	74±40	0,528
ALT(mg/dl)	31±19	40±22	0,375
GGT(mg/dl)	31±15	33±17	0,779
T.Bilirubine(mg/dl)	0,79±0,3	0,76±0,3	0,683
D.Bilirubine(mg/dl)	0,27±0,1	0,28±0,1	0,944
Uric Acid(mg/dl)	5,79±2	5,74±1	0,924
Hemoglobine(mg/dl)	14,1±1,4	13,7±1,9	0,277
CRP(mg/dl)	18,5±12	26,1±21	0,202
Troponin(mg/dl)	21,0±18	21,9±19	0,839

Coronary artery disease / Acute coronary syndrome

OP-125

Procalcitonin as an early predictor of contrast-induced acute kidney injury in patients with acute coronary syndromes underwent percutaneous coronary

Alparslan Kurtul[1], Sani Namık Murat[1], Mikail Yarlıoğlueş[1], Mustafa Duran[1], Adil Hakan Öcek[1], İbrahim Etem Çelik[1], Alparslan Kılıç[1], Cemal Köseoğlu[1], Fatih Öksüz[1], Veysel Özgür Barış[2]

[1]Ankara Training and Research Hospital, Ankara
[2]Ankara University, Faculty of Medicine, Ankara

Introduction: Contrast-induced acute kidney injury (CI-AKI) is a major issue after percutaneous coronary intervention (PCI), especially in the setting of acute coronary syndrome (ACS). CI-AKI is associated with increased mortality and morbidity. Inflammation plays an important role in the pathophysiology of CI-AKI. Procalcitonin (PCT) is introduced as a new marker of inflammation. We sought to examine whether admission PCT levels predict the development of CI-AKI.
Materials and Method: Serum PCT levels were measured at admission. Patients (n=814) were divided two groups: CI-AKI (-) and CI-AKI (+). An increase in serum creatinine of ≥0.5 mg/dl from baseline within 48-72 hours of contrast exposure was defined as CI-AKI.
Results: CI-AKI occurred in 96 patients (11.8%). PCT levels were significantly higher in patients with CI-AKI than in those without [0.11(0.056-0.495) µg/L vs 0.04(0.02-0.078) µg/L; p<0.001]. After multivariable analysis, PCT remained a significant independent predictor of CI-AKI (OR 2.544 95%CI [1.207-5.347]; p=0.014) as well as age, women, white blood cell, hemoglobin, glomerular filtration rate, creatinine kinase-MB, and syntax score.
Discussion and Conclusion: In conclusion, serum PCT levels are independently associated with a risk of CI-AKI in ACS patients underwent urgent PCI.

Coronary artery disease / Acute coronary syndrome

OP-126

Association between serum endoglin level and coronary collateral vessel in patients with acute coronary syndromers

Aydın Akyüz[1], Şeref Alpsoy[1], Dursun Çayan Akkoyun[1], Hasan Değirmenci[2], Kubilay Erselcan[1], Feti Tülübaş[1]

[1]Namık Kemal University Faculty of Medicine, Tekirdağ
[2]Tekirdağ State Hospital, Tekirdağ

Introduction: Previously, endoglin, also known as CD105, was shown to be related to angiogenesis. Hence, we investigated relationship between endoglin levels and the development of coronary collateral circulation (CCC) in patients with acute coronary syndrome.
Materials and Method: We divided the study patients who underwent coronary angiography into a poor collateral group (Group 1, n=45) and a good collateral group (Group 2, n=42), according to Rentrop classification. After baseline charecteristics including age, body mass index, systolic and diastolic blood pressures, smoking, history of hypertension, diabetes mellitus, or a family history of coronary artery disease were recorded, blood samples were taken for analysis of endoglin and other biochemical variables. The Mann-Whitney U test and two independent sample t-test, chi-square test and ANOVA test, Pearson or Spearman correlation tests, receiver–operating characteristics (ROC) curve analysis and multivariate logistic regression analysis were used for istatistical analysis. P values <0.05 were considered significant.
Results: Endoglin levels were significantly higher in the Group 1 than the Group 2 (13.6±3.8 and 10.2±2.9 ng/ml, p<0.001). Serum endoglin levels were negatively correlated with age, C-reactive protein and low density lipoprotein cholesterol levels. The ROC analysis (Area under curve: 0.758, 95% CI, 0.655-0.844; p<0.001) provided a cutoff value of ≤12.6 mg/dL for endoglin to predict good CCC with 85.7% sensitivity and 60% specificity. In multivariate logistic regression analysis, endoglin levels (OR = 0.97; 95% CI, 0.95–0.99; p=0.002) and presence of total occlusion (OR = 2.51; 95% CI, 1.05–5.8; p=0.036) were predictors of good CCC.
Discussion and Conclusion: Lower plasma endoglin levels were associated with better CCC development.

Coronary artery disease / Acute coronary syndrome

OP-127

SIRT1 gene single nucleotide polymorphisms are age dependent changing and associated with premature MI

Sıtkı Küçükbuzcu[1], Aylin Yamaç[1], Mehmet Ertürk 2, Özlem Gök[3], Ahmet Bacaksız[1], Ömer Göktekin[1], Ülkan Kılıç[3]

[1]Bezmialem Vakıf Gureba Training and Research Hospital, İstanbul
[2]Mehmet Akif Ersoy Chest and Cardiovascular Surgery Education and Research Hospital, İstanbul
[3]İstanbul Medipol University, İstanbul

Introduction: SIRT1 protein and its downstream pathways have been shown to be cardioprotective by reducing oxidative stress, promoting DNA stability and improving endothelial function. SIRT1 single nucleotide polymorphisms (SNPs) have been frequently found in patients, who were screened positive for coronary artery disease (CAD) or suffering from myocardial infarction (MI), indicating that genetic variations may influence the cardiovascular disease (CVD) phenotype. The aim of this study was to investigate the association between SIRT1 SNPs, SIRT1- and eNOS- (endothelial nitric oxide synthase) protein expression in young patients under the age of 45 suffering from premature ST-elevation myocardial infarction (STEMI).
Materials and Method: Genotyping of the three SNPs (rs7895833 A > G in the promoter region, rs7069102 C > G in intron 4 and rs2273773 C > T in exon 5), in SIRT1 gene was performed in 108 consecutive patients (87.0% men, mean age 40.74±3.82 years), suffering from ST elevation myocardial infarction (STEMI) at the age of <45 years.
Results: Genotyping of the three SNPs (rs7895833 A > G in the promoter region, rs7069102 C > G in intron 4 and rs2273773 C > T in exon 5), in SIRT1 gene was performed in 108 consecutive patients (87.0% men, mean age 40.74±3.82 years), suffering from ST elevation myocardial infarction (STEMI) at the age of <45 years. The risk for cardiovascular disease was increased by 1.96 times in carriers of CC and CG genotypes compared with carriers of the GG genotype (χ^2: 5.315, p=0.021, OR :, %95 CI: 1.10–3.47) in the whole patient collective. A subgroup analysis, were patients G and rs2273773 C > T with MI risk. SIRT1 protein levels were enhanced and eNOS levels were decreased in patients with MI regardless of the underlying SIRT1 gene variant. Besides SIRT1 protein expression was age-related, increasing with growing age.
Discussion and Conclusion: This is the first study reporting that SIRT1 gene polymorphisms are changing with age and associated with premature MI.

Coronary artery disease / Acute coronary syndrome

OP-128

Value of ST elevation in lead V4R and in lead III greater than lead II predicting right ventricular infarction

Barış Yaylak[1], Erkan Baysal[1], Bernas Altıntaş[1], Hüseyin Ede[2], Şükrü Akyüz[3], Önder Bilge[1], Nuri Cömert[4], Utkan Sevuk[1], Züleyha Karahan[1], Güney Erdoğan[5], Kemal Çevik[1], Rojhat Altındağ[1]

[1]Diyarbakır Training and Research Hospital, Diyarbakır
[2]Bozok University, Faculty of Medicine, Yozgat
[3]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[4]Memorial Antalya Hospital, Antalya
[5]Ordu State Hospital, Ordu

Introduction: Right ventricular (RV) myocardial infarction (MI) occurs in 30% to 50% of patients with acute inferior wall MI (IWMI). The diagnosis of RVMI is often based on clinical findings. Also, among patients with IWMI suffering hypotension, an electrocardiographic diagnosis of concurrent RVMI should be chased. Although predictive value of ST elevation in lead V4R and ST elevation in lead III>II in patients with IWMI is satisfactory, their predictive value for RVMI, in-hospital mortality, and cardiac events in patients with acute IWMI undergoing primary PCI has not been evaluated prospectively. The aim of this study was to compare the roles of ST-elevation in lead V4R and in lead III>II findings on diagnostic accuracy for RVMI and their roles in predicting in-hospital outcomes considering echocardiographic evidences for RVMI among patients with IWMI undergoing primary PCI.
Materials and Method: A total of 180 inferior STEMI patients presented within 12 hours from the symptom onset were included in the study. We assessed the diagnostic accuracy of ST-elevation in lead V4R and in lead III>II (as compared with echocardiographic evidences) to identify right ventricular involvement and theirs prognostic implications for in-hospital mortality and adverse cardiac events.
Results: ST-segment elevation in V4R predicted RVMI with a sensitivity of 90 %, a specificity of 85%, diagnostic accuracy of 87%. ST-elevation in lead III>II predicted RVMI with a sensitivity of 93%, a specificity of %60, a diagnostic accuracy of 76%. ST-elevation in V4R was associated with both in-hospital mortality (odds ratio 3.1, 95% CI 1.10 to 11.10) and cardiac adverse events (odds ratio 4.2, 95% CI 2.85 to 9.64). ST-elevation in lead III>II was not associated with in-hospital mortality (odds ratio 1.3, 95% CI 0.59 to 3.50), but associated with in-hospital cardiac adverse events (odds ratio 2.8, 95% CI 1.5 to 5.4)
Discussion and Conclusion: ST-elevation in lead V4R had same sensitivity with ST-elevation in lead III>II but more specific than ST-elevation in lead III>II in diagnosing RVMI. Also, V4R is a significant predictor of in-hospital mortality and cardiac adverse events. ST-elevation in lead III>II is a predictor of in-hospital cardiac adverse events, but not predictor of in-hospital mortality. Thus, ST-elevation in lead V4R was more accurate screening tool for RV MI.

Hypertension

OP-129

Do we know the cut-off blood pressure levels in arterial hypertension?

Ebru Özpelit, Nezihi Barış, Ahmet Yiğiter, Ali Tezcan, Buse Durak, Rıdvan Mehmet Göktaş, Rojbin Ekinci, Serdar Akkuş, Tuba Ateş, Tuğçe Polat, Zelal Polat

Dokuz Eylul University, Faculty of Medicine, İzmir

Introduction: Arterial hypertension(HT) is one of the most important causes of morbimortality in adulthood. Because of its frequency and underlying causes HT is a public health problem and it should not be perceived as a specific disease of certain medical specialities. Every physician what ever their specialities are, should be aware of certain topics of HT. In this study, we aimed to investigate the awareness of physicians on cut off levels of blood pressures (BP) used in diagnosis and treatment of HT.
Materials and Method: Medical doctors of several branches who work in Dokuz Eylul University (DEU) Hospital full in a questionnaire of 6 question. The first 3 question included the age, sex and medical branch of the physicians. The physicians were also asked to write the cut-off levels of BP used in diagnosis and treatment of HT. The final question was about the source of their information. To evaluate the appropriateness of the answers on BP levels, ESC 2013 HT guideline was used as the reference point. According to this guideline, cut-off level of BP used in diagnosis of HT was 140/90mmHg and the goal of the treatment was defined as BP levels below 140/90 mmHg. The appropriateness of the answers and the factors accsociated with the appropriateness were evaluated.
Results: 623 medical doctor were involved in this survey. Among these, 284 were female and 339 were male. Mean age of the physicians were 36.9±10.6 years. Distribution of the medical specialities were as follows; 116 (18.6%) surgical medicine, 396 (63.6%) internal medicine and 109 (17.5%) basic medical sciences. 411 physician (66.3%) were correct on their knowledge about the diagnostic cut-off level of BP used in HT. The remaining 209 physicians (33.7%) answered this question wrong. Only 8 physician overestimated the level whereas the majority of the doctors underestimated the BP level used in diagnosis of HT. The great majority of the physicians (n=608, 98.2%) were right on their knowledge about goals of the treatment. When we compare the physicians who answered the diagnostic BP level right with ones who answered wrong, there was no difference between groups in respect of sex and medical branch. However correct aswerers were significantly younger than the wrong answerers (36.09±10.7 years vs 38.8±10.3 years p=0.002). The information sources were described as follows: 336 (53.9%) medical education, 118 (18.9%) congress, 65 (10.4%) guidelines, 20 (3.2%) internet, 14 (2.2%) media an the remaining 70 (11.2%) were others.
Discussion and Conclusion: This survey demonstrated a relatively high level of awareness of physicians on BP levels used in diagnosis and treatment of hypertension. However it should be kept in mind that these results are only representetive of a narrow spectrum of the physicians; those who work in DEU university hospital. In order to be generalized, the survey should be conducted on a wider spectrum of doctors.

Hypertension

OP-130

Arterial stiffness parameters are associated with vitamin D deficiency and supplementation in patients with normal cardiac functions

Murat Sünbül[1], Altug Cincin[1], Mehmet Bozbay[1], Ceyhun Mammadov[1], Halil Ataş[1], Ekmel Burak Özşeneł[2], İbrahim Sarı[1], Yelda Başaran[1]

[1]Marmara University Faculty of Medicine, İstanbul
[2]Şişli Etfal Training and Research Hospital, İstanbul

Introduction: Arterial stiffness parameters including pulse wave velocity (PWV) and augmentation index (AIx) are associated with increased risk of cardiovascular disease (CVD). Previous studies have shown that there is a close relationship between vitamin D deficiency and CVD. The aim of the present study is to investigate the effect of vitamin D deficiency and supplementation on arterial stiffness parameters in patients with normal cardiac functions.
Materials and Method: The study population consisted of 45 patients with vitamin D deficiency who have normal cardiac functions (mean age: 42.9±8.4 years, 33 female). Patients were treated with oral administration of vitamin D3. Arterial stiffness parameters were evaluated by using a Mobil-O-Graph arteriograph system, which detected signals from the brachial artery, before and after treatment of those patients.
Results: Vitamin D levels significantly increased after treatment of patients (9.1±4.5 nmol/liter versus 29.5±10.5 nmol/liter, p<0.001). There was no significant difference between conventional echocardiographic parameters before and after treatment. Post-treatment PVW and AIx were significantly lower than baseline measurements (6.4±0.9 m/s versus 6.8±1.0 m/s, p<0.001 and 21.6±12.3% versus 30.4±9.8%, p<0.001, respectively). Baseline vitamin D levels significantly correlated with PWV (r=-0.352, p=0.018). Post-treatment vitamin D levels also significantly correlated with post-treatment PWV (r=-0.442, p=0.002) and AIx (r=-0.419, p=0.004).
Discussion and Conclusion: Vitamin D supplementation provides beneficial effects on arterial stiffness parameters. Arterial stiffness parameters may help the clinician to assess the cardiovascular risk in patients with vitamin D deficiency.

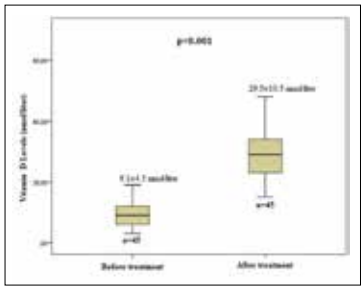


Figure 1. Comparison of vitamin D levels

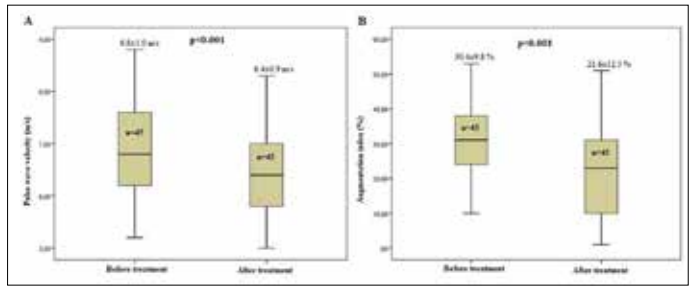


Figure 2. Comparison of PWV and AIx

Hypertension

OP-131

The relationship between 25-OH vitamin D levels and ambulatory arterial stiffness index in newly diagnosed and never-treated hypertensive patients

Özgül Malçok Gürel[1], Ayşe Bilgiç[1], Bora Demirçelik[1], Meltem Özaydın[1], Fadime Bozduman[1], Zübeyde Aytürk[1], Hakkı Yılmaz[2], Aslı Atar[1], Yusuf Selçoki[1], Beyhan Eryonucu[1]

[1]Turgut Özal University, Faculty of Medicine, Ankara
[2]Ankara Oncology Training and Research Hospital, Ankara

Introduction: Vitamin D insufficiency has been shown to be associated with cardiac dysfunction such as cardiac hypertrophy and hypertension in animal studies. Arterial sitffness is a prognostic marker for the cardiovasular disease. Previous studies have demonstrated that 25(OH)D levels were negatively correlated with arterial stiffness index. We aimed to evaluate the relationship between 25(OH)D levels and arterial stiffnes evaluated by a ambulatory arterial stiffness index (AASI) in patients with newly diagnosed and never-treated essential hypertension.
Materials and Method: A total of 123 consecutive patients with newly diagnosed and untreated essential hypertension were included. Patients were divided into two groups with according to 25 (OH) D levels. Vitamin D insufficiency was defined by 25 (OH) D <20 ng/ml. All patients referred for ambulatory blood pressure monitoring. The regression slope of diastolic and systolic blood pressure was computed for each individual on the basis of ABP readings. AASI was was described as one minus the respective regression slope
Results: The mean AASI was significiantly higher in patients with 25(OH)D levels <20 as compared to patients with 25(OH)D levels ≥20 (0.50±0.20 vs 0.34±0.17, p<0.001). In Pearson correlation analysis, AASI had a significantly strong negative correlation with vitamin D levels (r=-0.385, p<0.001). In multivariate logistic regression analysis, vitamin D levels were found as significantly and independently associated with the AASI (β:-0.317, p=0.035).
Discussion and Conclusion: Arterial stiffness measured by AASI in newly diagnosed and untreated patients with essential hypertension were significiantly associated low vitamin D levels.

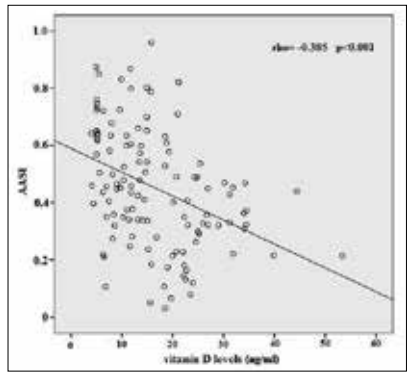


Figure 1. Correlation between AASI and vit D levels

Table 1. Basal characteristics and laboratory parameters

Parameters	25(OH)D levels<20 ng/ml (n=81)	25(OH)D levels≥20 ng/ml (n=42)	p value
Age, years	53.0 ± 14.9	55.8 ± 14.3	0.313
Female, n (%)	71 (82.5)	28 (66.7)	0.067
Hemoglobin, g/dl	14.7 ± 8.0	13.8 ± 1.2	0.477
Platelets, 10^3/mm^3	249 ± 57	248 ± 69	0.935
Creatinine, mg/dl	0.71 ± 0.19	0.76 ± 0.21	0.181
Glucose, mg/dl	97 ± 16	100 ± 16	0.291
Total cholesterol, mg/dl	215.1 ± 48.9	218.3 ± 53.8	0.747
HDL-cholesterol, mg/dl	54.3 ± 16.4	51.8 ± 18.2	0.451
LDL-cholesterol, mg/dl	133.6 ± 43.3	137.8 ± 42.5	0.615
Triglyceride, mg/dl	137.7 ± 88.3	147.2 ± 74.4	0.554
Average day SBP, mmHg	128.0 ± 14.6	125.7 ± 13.1	0.384
Average day DBP,mmHg	76.7 ± 9.6	76.8 ± 8.9	0.991
AASI	0.50 ± 0.20	0.34 ± 0.17	<0.001
Vitamin D level, ng/ml	10.9 ± 4.5	26.5 ± 8.2	<0.001
Parathyroid hormone, pg/ml	75.7 ± 43.0	48.9 ± 32.1	0.067

Hypertension

OP-132

Insulin resistance is a risk factor for resistant hypertension in middle-aged patients

Özgür Ulaş Özcan[1], Sadi Güleç[1], Ahmet Temizhan[2], Aytekin Oğuz[3], Yüksel Altuntaş[4], Kubilay Karşıdağ[5], Pınar Kızılırmak[5]

[1]Ankara University, Faculty of Medicine, Ankara
[2]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[3]İstanbul Medeniyet University Göztepe Training and Research Hospital, İstanbul
[4]Şişli Etfal Training and Research Hospital, İstanbul
[5]İstanbul University, İstanbul

Introduction: Resistant hypertension is significantly associated with cardiovascular and renal complications. Insulin resistance is known to be associated with renin-angiotensin-aldosterone system activation and is a basis for multiple chronic diseases. We aimed to investigate whether insulin resistance is a risk factor for resistant hypertension in a middle-aged population.
Materials and Method: A total of 575 hypertensive, non-diabetic, middle-aged patients were enrolled, of whom 81 (14.1%) treatment resistant hypertension and 494 hypertensive patients had been included in the control group. Insulin resistance was determined by homeostasis model assessment (HOMA) formula: fasting glucose (mmol/L) x fasting insulin (μU/mL)/22.5.
Results: Baseline characteristics of the study groups were demonstrated in table. Multivariable regression model revealed that HOMA-insulin resistance is a risk factor for resistant hypertension (HR: 2.32, 95% CI 1.48-4.14), p=0.02 for resistant hypertension).
Discussion and Conclusion: Insulin resistance is associated with resistant hypertension among middle-aged non-diabetic patients.

Table 1. Baseline characteristics of the study patients

Characteristics	Controlled hypertension (n=494)	Resistant hypertension (n=81)	p
Age, years	52.6±11.6	53.1±10.5	0.12
Mean systolic blood pressure, mmHg	126.4±13.4	164.2±20.8	<0.001
Mean diastolic blood pressure, mmHg	79.0±8.9	98.7±11.9	<0.001
Number of antihypertensive drugs	1.2±0.3	3.4±0.3	<0.01
Fasting blood glucose, mg/dL	96.6±20.1	106.4±16.9	<0.001
Creatinine, mg/dL	0.71±0.11	0.76±0.17	0.08
HOMA-Insulin resistance, n (%)	165(33)	39(48)	0.01

Hypertension

OP-133

Cystatin C and uncontrolled hypertension

Özgür Ulaş Özcan[1], Sadi Güleç[1], Ahmet Temizhan[2], Aytekin Oğuz[3], Yüksel Altuntaş[4], Kubilay Karşıdağ[5], Pınar Kızılırmak[5]

[1]Ankara University, Faculty of Medicine, Ankara
[2]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[3]İstanbul Medeniyet University Göztepe Training and Research Hospital, İstanbul
[4]Şişli Etfal Training and Research Hospital, İstanbul
[5]İstanbul University, İstanbul

Introduction: Increased serum level of cystatin C, a sensitive biomarker for renal function, seems to predict adverse cardiovascular events. We investigated the predictive value of serum cystatin C for control of hypertension in a cross-sectional observational study.
Materials and Method: We screened a total of 1037 adults residing in both rural and urban communities. Individuals were grouped according to the diagnosis and control of hypertension.
Results: Serum cystatin C levels were higher among patients with uncontrolled hypertension than patients with controlled hypertension (0.98±0.23 vs. 0.89±0.19, p=0.001). Although serum creatinine levels were similar between these groups (0.72±0.20 vs. 0.70±0.18, p=0.89). Serum cystatin C levels increased the probability of uncontrolled hypertension independent from confounding factors (OR: 1.48, 95%CI 1.09-5.64, p=0.03).
Discussion and Conclusion: Subtle kidney dysfunction may be detected by using serum cystatin C concentrations among patients with poor blood pressure control and normal serum creatinine levels.

Table 1. Risk predictors of uncontrolled hypertension

Variable	Unadjusted Odds Ratio	95% confidence interval	P	Adjusted Odds Ratio	95% confidence interval	P
Age	1.06	(1.03-1.08)	<0.001	1.05	(1.03-1.08)	<0.001
Male sex	1.12	(0.72-1.76)	0.61	1.28	(0.77-2.13)	0.33
Cystatin C	5.90	(1.87-18.6)	0.002	1.48	(1.09-5.64)	0.03
Creatinine	1.27	(0.42-3.85)	0.67			
Diabetes mellitus	1.57	(0.91-2.70)	0.11			
Active smoking	1.85	(1.13-3.03)	0.02	1.51	(0.89-2.56)	0.13
Duration of hypertension	1.17	(0.86-1.97)	0.56			

Pulmonary hypertension / Pulmonary vascular disease

OP-134

Which hemodynamic variable is the best for predicting long term outcome in pulmonary arterial hypertension?

Ebru Özpelit, Bahri Akdeniz, Nezihi Barış, Neryan Özgül

Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Considering the importance of right ventricular-arterial coupling in PAH, some new hemodynamic parameters have been described. Pulmonary arterial capacitance (PACap) is one of these parameters. In this study we aimed to investigate the prognostic values of standard and new hemodynamic variables in predicting survival in PAH patient.
Materials and Method: In a prospective study of 103 consecutive patients with PAH, clinical, and catheteterization parameters were recorded at initial diagnosis. Catheterization parameters included standart parameters as well as PACap. PACap was calculated by stroke volume (SV) divided by pulmonary artery pulse pressure (PAPP). At the end of follow-up, patients were stratified according to vital status; Group 1(patients dead; n=35) and group 2 (patients alive; n=68). The hemodynamic variables were compared between two groups.
Results: In a mean follow-up of 39.2±23.8 months, 35 deaths occurred. Right atrial pressure and PAPP were significantly higher, whereas CO, SV and PACap were significantly lower in group 1 compared to group 2.(Table 1). Cardiac output, SV, PAPP and PACap were significantly correlated with eachother as expected. So we included PACap and RAP on multivariate regression analyses and showed that the PACap were the only independent predictor of death among various hemodynamic variables in PAH patients (HR: 0,316 p:0,026 95% CI: 0,115-0,872).
Discussion and Conclusion: Among several hemodynamic variables PACap seems to be the best in predicting survival in PAH patients.

Table 1. Comparison of hemodynamic variables between groups

	Patients dead (n=35)	Patients alive (n=68)	P value
sPAP (mmHg)	85.1± 20.3	77.9 ± 26.2	0,173
PVR (Woods)	8,5 (10.1)	7.4 (5.9)	0,075
RAP (mmHg)	11.7 ±6.0	8.2 ± 3.7	**0,002**
PAPP (mmHg)	56.7 ±16.1	48.0 ± 19.0	**0,033**
PACap (ml/mmHg)	1. 0.44	1.48 ± 0.78	**0,010**
CO (ml/min)	4.6± 1.6	5.5 ± 1.9	**0,046**
SV (ml)	53.5 ±19.1	65.3 ± 25.6	**0,050**

Pulmonary hypertension / Pulmonary vascular disease

OP-135

The relation between platelet-to-lymphocyte ratio and pulmonary embolism severity index in acute pulmonary embolism

Harun Kundi, Ahmet Balun, Hülya Çiçekçioğlu, Mustafa Çetin, Emrullah Kızıltunç, Zehra Güven Çetin, Candan Mansuroğlu, Ender Örnek

Ankara Numune Training and Research Hospital, Ankara

Introduction: In this study, we aimed to investigate the value of the platelet-to-lymphocyte ratio (PLR) for predicting disease severity based on simplified Pulmonary Embolism Severity Index (sPESI), as well as in-hospital mortality in patients with acute pulmonary embolism (APE).
Materials and Method: Our hospital's electronic patient database was searched for the patients with ICD-9 code I26, and eligible 646 patients were included in the study.
Results: Univariate logistic regression analysis showed that PLR, pulmonary artery systolic pressure, right ventricular dysfunction, D-dimer level, and white blood cell, lymphocyte, platelet and neutrophil counts were significantly correlated with a high sPESI score in patients with APE. In-hospital mortality rate was significantly higher in the patients with a PLR ≥149 (p<0.001).
Discussion and Conclusion: To the best of our knowledge, this is the first study in the literature showing that a high PLR is independently associated with a high risk of mortality in patients with APE. We suppose that PLR can be used as a predictor of mortality in APE patients as a readily available and inexpensive marker.

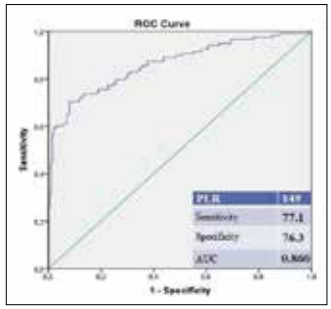


Figure 1. ROC curve analysis for prediction high risk sPESI

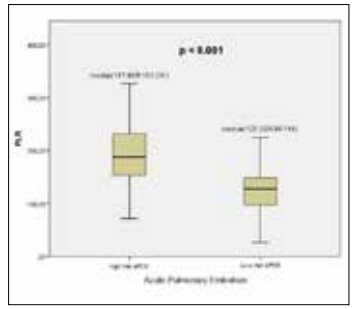


Figure 2. Graph showing a significant difference for PLR

Pulmonary hypertension / Pulmonary vascular disease

OP-136

A simple and valuable echocardiographic parameter for predicting prognosis in pulmonary arterial hypertension; RVOT maximal systolic velocity

Ebru Özpelit, Bahri Akdeniz, Nezihi Barış, Erkan Alpaslan

Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Right ventricular outflow tract maximal systolic velocity (RVOT Vmax) may reflect pulmonary flow and cardiac output, which are important predictors in PAH. In this study we aimed to identify prognostic value of this simple echocardiographic parameter in predicting long term outcome in PAH patients.
Materials and Method: We assigned 123 consecutive patients, under the regular follow up at our PAH center. In this cohord, functional class (FC), 6 minute walking distance (6MWD), BNP, TAPSE, right ventricular annular systolic velocity (RV S), RV Tei index, right atrial area (RAA), RV fractional area change (RFAC), RVOT Vmax and hemodynamic parameters were recorded at initial diagnosis. All patients were followed up periodically with 3 months intervals. The prognostic values of these parameters were analyzed by Cox regression model.
Results: In a mean follow-up of 36 months, 35 deaths occurred. In univariate analyses, baseline FC, BNP, 6DWD, TAPSE and RVOT Vmax were found to be siginificantly associated with death. In multivariate analysis, the independent predictors of death were identified as 6MWD and RVOT Vmax. (Table 1). Focusing on this promising parameter we identified a cut-off for RVOT Vmax in predicting mortality by ROC curve analysis, which was 82.5 cm/sec. Area under the curve for RVOT Vmax was 0.67 (95% CI, 0.52-0.77; p=0.02) and RVOT Vmax at initial diagnosis predicted mortality with a sensitivity of 67% and a specificity of 63%.
Discussion and Conclusion: This study indicated the importance of RVOT Vmax for predicting survival in patients with PAH. This simple, easily measured echocardiographic parameter may be considered as an important surrogate marker in our clinical practice in PAH patients.

Table 1

	Multivariate analysis of parameters in predicting mortality		
	HR	P value	%95 CI
FC	1,627	0,541	0,341-7,763
BNP	1,000	0,362	1,000-1,001
6MWD	0,995	**0,020**	0,991-0,999
TAPSE	0,938	0,177	0,854-1,030
RVOT Vmax	0,983	**0,05**	0,944-0,999

Pulmonary hypertension / Pulmonary vascular disease

OP-137

Assessment of the diagnostic value of copeptin in patients with acute pulmonary embolism

Ali Kemal Kalkan[1], Derya Öztürk[1], Mehmet Ertürk[1], Mehmet Emin Kalkan[2], Hüseyin Altuğ Çakmak[3], Ender Öner[1], Fatih Uzun[1], Ömer Taşbulak[1], Turab Yakışan[1], Ahmet Çelik[4]

[1]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[2]Kartal Kosuyolu Training and Research Hospital, Istanbul
[3]Rize Kackar Government Hospital, Rize
[4]Mersin University, School of Medicine, Mersin

Introduction: Acute pulmonary embolism (APE) is a common disease which is associated with high mortality and morbidity. Circulating level of copeptin, which was demonstrated to be elevated in heart failure, acute myocardial infarction and pulmonary arterial hypertension, was reported to be an independent predictor of poor outcome in recent studies. The aim of the present study was to investigate the clinical utility of copeptin in the diagnosis of APE.
Materials and Method: A total of 90 consecutive patients, who admitted to emergency service for acute chest pain and/or dyspnea and underwent pulmonary computerized tomography (CT) angiography due to suspicion of APE, were included in this prospective study. The patients diagnosed with APE were defined as APE (+) group and the remaining individuals with normal pulmonary CT angiography result defined as APE (-) group.
Results: Copeptin levels (7.76±4.4 vs. 3.81±1.34 ng/dl; p<0.001) were higher in the APE (+) group as compared to the APE (-) group. A receiver operating characteristic curve (ROC) analysis indicated that copeptin levels >4.84 had a 68.1% sensitivity and 83.7% specificity for predicting APE (AUC: 0.836, 95% CI: 0.755-0.917; p<0.001). Moreover, copeptin was significantly positively correlated with brain-natriuretic peptide (r=0.434, p<0.001), D-dimer (r=0.315, p=0.003), right to left ventricle ratio (r=0.329, p=0.024), and troponin I (r=0.300, p=0.004) and inversely correlated with tricuspid annular plane systolic excursion (r=-0.521, p<0.001) and arterial oxygen saturations (r=-0.533; p<0001). Copeptin (OR: 1.836, 95% CI: 1.171-2.878, p=0.008) was found as a significant independent predictor of APE in a multivariate analysis, after adjusting for other risk parameters.
Discussion and Conclusion: This study is the first to demonstrate a diagnostic value of copeptin in patients with APE. Copeptin was found as an independent significant predictor of APE, even after adjustments for various risk parameters. Serum copeptin levels had a strong diagnostic value, with high sensitivity and specificity in differentiating patients with APE from those without it. Copeptin is a promising new biomarker for diagnosis and risk stratification of patients with APE.

Pulmonary hypertension / Pulmonary vascular disease

OP-138

Elevated gamma glutamyl transferase level is associated with the localization of acute pulmonary embolism

Hasan Yücel, Özge Korkmaz, Ali Zorlu, Hakkı Kaya, Sebahattin Göksel, Öcal Berkan, Mehmet Birhan Yılmaz

Cumhuriyet University, Faculty of Medicine, Sivas

Introduction: Acute pulmonary embolism (APE) is a common disease and lead to high morbidity and mortality. The localization of embolism is associated with clinical findings and disease severity. The level of gamma glutamyl transferase (GGT) increases in oxidative stress-related conditions. In this study, we investigated whether GGT levels could predict the localization of APE.
Materials and Method: This study has a retrospective observational cohort design. One hundred twenty-two patients who were diagnosed with APE after computerized tomography-assisted pulmonary angiography were evaluated. Patients were classified into two main groups (proximally and distally located), and subsequently these two main groups were divided into two subgroups as follows: first group (with main pulmonary artery (PA) involvement; n=9); second group (main PA branch involvement; n=71); third group (PA segmental involvement; n=34); fourth group (PA subsegmental involvement; n=8).
Results: The mean age of the patients was 64±13 years (52% females, 48% males). GGT levels on admission, heart rate, oxygen saturation, right ventricular dilatation/hypokinesia, systolic pulmonary artery pressure (sPAP), and CPR requirement had prognostic significance in univariate analysis. The multivariate logistic regression model showed that GGT level on admission (OR = 1.044, 95% CI: 1.011-1.079, p=0.009), and sPAP (OR = 1.063, 95% CI = 1.005-1.124, p=0.033) remained independently associated with proximal PA involvement.
Discussion and Conclusion: For the first time in the literature, the findings revealed a significant association between increased existing embolism load in PA and increased serum GGT levels. This finding will prove useful for treatment planning.

Pulmonary hypertension / Pulmonary vascular disease

OP-139

The prognostic value of change in echocardiographic parameters at follow up in pulmonary arterial hypertension

Ebru Özpelit, Bahri Akdeniz, Nezihi Barış, Can Sevinç

Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Several baseline echocardiographic parameters including presence of pericardial effusion, right atrium area and TAPSE is associated with survival in patients with pulmonary arterial hypertension (PAH). However evaluation of these parameters in the follow up of patients is unclear. We aimed to investigate the additive prognostic value of changes in echocardiographic parameters for predicting survival in patients with PAH.
Materials and Method: In this study; we included 103 consecutive patients with PAH (group 1 and 4) in Dokuz Eylul University Hospital. Several echocardiograhic parameters including tricuspid annular plane systolic excursion (TAPSE), pulmonary artery systolic pressure and right ventricular annular systolic velocity (RV S) were assessed baseline and after 6 months of follow up in addition six minute walking distance (6MWD) and BNP value. The prognostic value of changes in these parameters was assessed by univariate Cox regression analyses.
Results: At the end of this follow-up 35 patients died. Delta changes in BNP, 6MWD, sPAP, and RV S did not predict mortality. However change in TAPSE value according to baseline (delta TAPSE) significantly predicted mortality, a further increase in TAPSE according to baseline indicated a lower mortality. (Table 1) (HR: 0.919 p:0.013 95% CI: 0.859-9.982).
Discussion and Conclusion: The change in TAPSE after treatment seems to predict survival in patients with PAH. We recommend to use this marker for routine outpatient visit in PAH patients.

Table 1. Regression analyses of parameters

	HR	P value	95% CI
DeltaTAPSE	0.919	**0.013**	0.859-0.982
Delta sPAP	0.990	0.417	0.968-1.014
Delta RV S	1.020	0.789	0.885-1.175
DeltaBNP	1.001	0.120	1.000-1.002
Delta 6MWD	1.000	0.859	0.996-1.004

Pulmonary hypertension / Pulmonary vascular disease

OP-140

The correlation of nutritional status with important prognostic factors in pulmonary arterial hypertension

Ebru Özpelit, Bahri Akdeniz, Dilek Sezgin, Can Sevinç, Kemal Can Tertemiz, Nezihi Barış

Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Malnutrition has been shown to be an important prognostic factor in several chronic disease states. However there is only scarce data about the role of nutritional status in pulmonary hypertension (PAH) prognosis. In this study we aimed to evaluate the correlation of nutritional status with well known prognostic factors in PAH.
Materials and Method: Nutritional status of the stable PAH patients who were followed in Dokuz Eylül University PAH clinics were evaluated with a special and validated questionnaire called mini nutritional assessment (MNA). According to some anthropometric measurements, patients' answers about daily food intake

and biochemical measurements, patients' nutritional status were scored. Patients with scores 24-30 were evaluated as normal, 17-23.5 as at risk of malnutrition and <17 as malnutrition. The correlation of MNA score with important prognostic factors of PAH was assessed by Spearman analysis.
Results: According to MNA score, 28 patients had a normal nutritional status, 6 patients were at risk of malnutrition and 3 patients were malnourished. The correlation of MNA scores with functional class(FC), BNP, pulmonary artery systolic pressure (PASP), 6 minute walking distance(6MWD), TAPSE, pulmonary vascular resistance(PVR), cardiac output(CO) and right atrial pressure (RAP) were analyzed. MNA score was found to be inversely correlated with RAP (r=-0.552, p=0.002). There was no significant correlation with MNA score and other prognostic factors. Among biochemical parameters, serum albumin level was also inversely correlated with RAP (r=-0.571 p<0.001) and BNP (r=-0.549 p<0.001).
Discussion and Conclusion: In patients with PAH, right atrial pressure was the only parameter correlated with nutritional status of the patients. This may be explained by the role of hepatic congestion on development of cardiac cachexia.Further studies are needed to establish the effect of nutritional status on long term prognosis of patients with PAH.

Valve diseases

OP-141

DNA repair gene polymorphism and the risk of mitral chordae tendineae rupture

Mehmet Bülent Vatan, Aysel Kalaycı Yiğin, Ramazan Akdemir, Muhammed Necati Murat Aksoy, Mehmet Akif Çakar, Harun Kılıç, Ünal Erkorkmaz, Süleyman Kaleli

Sakarya University Faculty of Medicine, Sakarya

Introduction: The aim of the present study was an evaluation of the significance of polymorphism Lys939Gln in XPC gene, which are key members of the nucleotide excision repair pathway, playing a critical role in cell growth, differentiation, and apoptosis, in patients with Mitral chordae tendinea rupture (MCTR).
Materials and Method: Twenty-one patients with MCTR, and thirty-seven age and sex matched controls, were enrolled in the study. Genotyping of XPC gene Lys939Gln polymorphism was carried out using polymerase chain reaction (PCR)-restriction fragment length polymorphism (RFLP).
Results: The frequencies of the heterozygote genotype (Lys/Gln-AC) and homozygote genotype (Gln/Gln-CC) were significantly different in MCTR as compared to control group, respectively (52.4% vs 43.2%, p=0.049; 38.15 vs 16.2%, p=0.018). The odds ratio for heterozygous and mutant individuals was calculated in the risk status assessment, which is prepared regarding to the normal group. Homozygote variant (Gln/Gln) genotype was significantly associated with increased risk of MCTR (OR = 2.059; 95% CI: 1.097-3.863; p=0.018). Heterozygote variant (Lys/Gln) genotype was also highly significantly associated with increased risk of MCTR (OR = 1.489; 95% CI: 1.041-2.129; p=0.049). The variant allele C was found to be significantly associated with MCTR (OR = 1.481; 95% CI: 1.101-1.992; p=0.011).
Discussion and Conclusion: This study has demonstrated the association of XPC gene Lys939Gln polymorphism with genetic susceptibility to MCTR, homozygote, and heterozygote variant genotype of XPC Lys-939Gln, which is significantly associated with increased risk of MCTR.

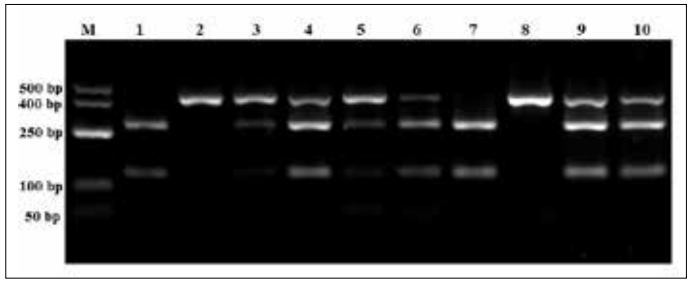


Figure 1. Figure shows the XPC Gene Data

Coronary artery disease / Acute coronary syndrome

OP-142

Evaluation of heart rate variability in patients with coronary artery ectasia and coronary artery disease

Fatma Esin[1], Bekir Serhat Yıldız[2], Emel Özkan[1], Yusuf İzzettin Alihanoğlu[2], İsmail Doğu Kılıç[2], Harun Evrengül[2], Havane Asuman Kaftan[2]

[1]İzmir Atatürk Training and Research Hospital, İzmir
[2]Pamukkale University Faculty of Medicine, Denizli

Introduction: Coronary artery ectasi (CAE) is characterized by an abnormal dilatation of the coronary arteries. It is a variant of coronary artery disease(CAD). Heart rate variablitiy(HRV) refers to change in the heart rate from beat to beat and HRV is decreased in ischemic heart disease regardless of previous myocardial infarction. The aim of this study is comparison of HRV parameters in patients with CAE and CAD.
Materials and Method: The study population consisted of 60 consecutive patients (14 women; mean age 51.6+7.4 years) with CAE, 60 consecutive patients with CA (1 women;mean age 53.6+9.3 years) and 59 healthy individuals (13 women; mean age 52.8+8.1 years). We performed electrocardiograms (ECGs) cardiosis high resolution ECG analyses and routine biochemical tests and evaluated the clinical characteristics. Coronary angiography images were viewed.Time-domain parameters of HRV; SDNN, RMSSD, LF, VLF, HF, the proportion derived by dividing the low and high frequency(LF/HF) and total power (TP)) were evaluated.
Results: Standard deviations of all N-N intervals,were lower in the CAE and CAD groups than in the healty group (140.9+44.4, 96.4+31.2, 181±48.6).There were no statistical differences among groups at RMSSD values. VLF and HF values were significantly decreased in the CAE group as compared to the healty group (225±115 vs 354.1±223, p=0.017; 902±556 vs 1446±1208, p=0.047). TP and HF values were significantly lower (1806.8±770 vs 3219.2+1592, p=0.008; 773±547 vs 1446±1208, p=0.01) and LF and LF/HF values were significantly higher (p=0.01, p=0.047) in the CAD group than in the healthy group. TP values were significantly higher;LF and LF/HF values were lower in the CAE group compared with the CAD group (2955+1566 vs 1806.8±770, p=0.001; 943+538 vs 1922±1402, p=0.001; 1.58±1.2 vs 2.2±1.4, p=0.038).
Discussion and Conclusion: A decrease in vagal modulation or an increase in sympathetic activity of cardiac function assessed by HRV analysis is worse in patients with CAD than patients with CAE.

Table 1. Demographic characteristics of all groups

	CAE (n:60)	CAD (n:60)	Healthy individuals (n:59)	p1	p2	p3	p4
Mean Age (year)	51.6 ± 7.4	53.6 ±9.3	52.8 ± 8.1	0.87	0.9	0.75	0.25
Sex (men)	46(76.6%)	45 (75 %)	46(78%)				0.1
HT	24(40%)	28 (46.7%)	24 (40.6%)	0.085	0.09	0.9	0.1
HLP	30 (50%)	34 (56.7%)	18 (30.5%)	0.1	0.2	0.08	0.196
Family History	12 (20%)	20 (33.3%)	10 (16.6%)				0.423
Smoking	23(38.3%)	33 (55%)	15 (25.4%)		0.74	0.093	0.09
Lenght (cm)	166.5±7.9	168.7±7.45	167.9±8.1				0.5
Weight (kg)	75.4±9.6	75.3±10.5	74.8±12.8				0.981
BMI	27.3±3.5	26.2±4	26.3±4.08				0.53

CAE: Coronary artery ectasia, CAD: Coronary artery disease

p1:CAE-CAD, p2:CAE-normal coronary arteries, p3:CAD-normal coronary arteries, p4: represents significance value of all groups, HT:Hypertension, HLP:Hyperlipidemia, BMI: Body mass index

Table 2. Heart rate variability parameters of all groups

	CAE (n:60)	CAD (n:60)	Normal Coronary Arteries (n:59)	p1	p2	p3	p4
Maximum Heart Rate	126 ± 34	128 ± 26	133 ± 30	0.64	0.087	0.57	0.25
Average Heart Rate	74 ± 13	76 ± 11	78 ± 12	0.72	0.12	0.47	0.1
Minimum Heart Rate	57 ± 12	58 ± 9	55 ± 7	0.96	0.36	0.23	0.42
Arrhythmias	18	30	6	0.037	0.025	0.010	0.001
SDNN	140.9 ± 44.4	96.4 ± 31.2	181 ± 48.6	0.001	0.002	0.001	0.001
RMSSD	34.4 ± 25.5	30.6 ± 23.1	46.1 ± 30	0.86	0.247	0.09	0.07
TP	2955 ± 1566	1806.8±770	3219.2 ± 1592	0.001	0.76	0.008	0.001
VLF	225 ± 115	201 ± 133	354.1 ± 223	0.086	0.017	0.003	0.001
LF/HF	1.58 ± 1.2	2.2 ± 1.4	1.4 ± 0.8	0.038	0.964	0.047	0.049
HF	902 ± 556	773 ± 547	1446 ± 1208	0.82	0.047	0.01	0.006
LF	943 ± 538	1922± 1402	568 ± 301	0.001	0.29	0.001	0.001

CAE: Coronary Artery Ectasia, CAD: Coronary Artery Disease, HRV: Heart rate variability, SDNN: standard deviations of all N-N intervals, RMSSD: the root mean square of the difference in successive N-N intervals, HF: High frequency, LF: Low frequency, VLF: Very low frequency, TP: Total power, p1: CAE-CAD, p2: CAE- Normal coronary artery, p3: CAD-Normal coronary artery, p4: represents significance value of all groups.

Cardiac imaging / Echocardiography

OP-143

Serum Tenascin-C as a predictor of quantitative myocardial fibrosis in dilated cardiomyopathy

Mustafa Kurşun[1], Sanem Nalbantgil[2], Naim Ceylan[2], İnan Mutlu[2], Filiz Özerkan Çakan[2]

[1]Tepecik Training and Research Hospital, İzmir
[2]Ege University Faculty of Medicine, İzmir

Introduction: The extent of myocardial fibrosis in dilated cardiomyopathy (DCM) patients is an important predictor of prognosis. Although endomyocardial biopsy (EMB) is the gold standart technique in the diagnosis of myocardial fibrosis, it has limited significance in detection of global fibrosis. Cardiac magnetic resonance imaging (CMR) can evaluate quantitative myocardial fibrosis non-invasively. Tenascin-C (TN-C) glycoprotein was shown to be a marker of ongoing fibrosis in myocardium in DCM. However, there are limited number of studies assessing the association of TN-C with myocardial fibrosis. Moreover, none of these studies evaluated the myocardial fibrosis quantitatively. In this basis, we planned to detect if serum TN-C levels can be used as a potential marker in predicting quantitative myocardial fibrosis in DCM.
Materials and Method: Serum TN-C levels of 30 DCM patients and 30 controls were measured by ELISA. Additionally, echocardiography was performed in both groups. CMR was performed in DCM patients and images were evaluated by an experienced radiologist in terms of quantitative myocardial fibrosis.
Results: The mean level of serum TN-C was 12.61±8.31 ng/mL and the mean quantitative myocardial fibrosis level was 19.9±23.8% in DCM group. The mean level of serum TN-C was 14.05±5.89 in control group. We observed no correlation between serum TN-C levels and quantitative myocardial fibrosis (r=0,018, p=0,925) and no difference in serum levels of TN-C between DCM group and control group. Also, there was a significant negative correlation between serum TN-C levels and Left Ventricular Ejection Fraction (r=-0,474, p=0,008) and Fractional Shortening (r=-0,480, p=0,007); and a significant positive correlation between serum levels of TN-C and Systolic Pulmonary Arterial Pressure (r = 0,509, p = 0,004), NYHA functional class (r=0,406, p=0,026), pro-BNP levels (r=0,666, p<0,001) and troponin levels (r=0,462, p=0,015).
Discussion and Conclusion: No relationship was detected between serum TN-C and quantitative myocardial fibrosis in DCM patients and no difference was detected in serum levels of TN-C between DCM and control groups. It may be explained as TN-C plays role in ongoing fibrosis, not in chronically fibrotic myocardial tissue. Another explanation is that TN-C may be released to circulation not directly from myocardium, but from hepatic or pulmonary tissue secondary to inflammatory process in myocardium. We also detected that serum TN-C is correlated with worse prognostic factors of DCM. However, we should underline the fact that serum TN-C levels in our study were much lower than those in the literature. In this manner, one should keep in mind that in stable DCM patients under optimal medical therapy, serum TN-C may be in normal ranges even in severe heart failure with worse prognostic factors. This is the first study to investigate the correlation of TN-C with the amount of myocardial fibrosis and to show that serum TN-C is not a useful marker in chronic and stable DCM patients to detect myocardial fibrosis.

Epidemiology

OP-145

Cardiovascular autonomic dysfunction in sarcoidosis; assessed by cardiovascular autonomic function tests

Ekrem Şahan[1], Suzan Şahan[2], Murat Karamanlıoğlu[1], Murat Gül[3], Omaç Tüfekçioğlu[2]

[1]Atatürk Lung Disease and Thorax Surgery Training and Research Hospital, Ankara
[2]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[3]Erciş State Hospital, Van

Introduction: Cardiac autonomic dysfunction (CAuD) is little known in patients with sarcoidosis. Cardiovascular autonomic function tests provide information regarding sympathetic and parasympathetic activity and are noninvasive and relatively simple to perform. The objective of our study was to compare CAuD in patients with sarcoidosis and in healthy controls.
Materials and Method: We analyzed the data from total of 47 patients with sarcoidosis and 47 age and sex matched healthy volunteers participated in this cross sectional study. Evaluation of CAuD was performed via cardiovascular reflex tests. These five tests were 1) beat-to-beat heart rate variation during deep breathing; 2) heart rate response to standing up; 3) heart rate response to the Valsalva maneuver; 4) blood pressure response to standing up; 5) blood pressure response to sustained handgrip. Patients were excluded if they had any of the following conditions: cardiovascular diseases, including hypertension, ischemic heart disease, congestive heart failure, valvular heart disease, cardiomyopathy, arrhythmia; any disease interfering with autonomic nervous system, including diabetes mellitus, renal and liver diseases, porphyria, amyloidosis; any neurological diseases, including polyneuropathy, multiple sclerosis, and Guillain-Barre syndrome; pregnancy; anemia; and thyroid disorders. Patients taking drugs that interfered with the autonomic nervous system, including vasodilators, sedatives, antidepressants, antiepileptic and hypnotic drugs, and antihistamines, anti-arrhythmics, asetil-salisilic acid, diuretics, adrenergic blockers, were also excluded.
Results: The mean age was 38,13 (±7,25) years (range, 27-55 years) in patients with sarcoidosis, and 32 were women. In beat-to-beat heart rate variation during deep breathing, expiration-to-inspiration ratio was abnormal in 9 patients with sarcoidosis (19,1%) but in 2 control patients (4,3%) (p=0,025), and maximum minus minimum heart rate was abnormal in 3 patients with sarcoidosis (6,4%) and in 2 (4,3%) control patients (p=~1,0). In heart rate response to standing up, 3 patients with sarcoidosis had abnormal result (6,4%), 2 patients had abnormal result in healthy group (4,3%). Valsalva ratio was abnormal in 8 patients with sarcoidosis (17,0%) and in 4 control patients with sarcoidosis (8,5%) (p=0,216). Blood pressure response to standing up was abnormal in 9 patients with sarcoidosis (19,1%), abnormal in 3 control patients (p=0,064). Blood pressure response to sustained handgrip was abnormal in one patients with sarcoidosis (2,1%) and 2 control patients (4,3%).
Discussion and Conclusion: Clinicans have come to recognise cardiac sarcoidosis as an uncommon but potentially fatal cndition. We found statistically insignificant differences between cardiovascular autonomic function tests in patients with sarcoidosis and in healthy volunteers. These patients with sacrcoidosis should be followed up carefully due to symptomatic cardiac involvement.

Other

OP-144

Prospective observational comparison of TTR in patients followed by specialized INR outpatient clinic and by the general cardiology outpatient clinic

Salih Kılıç, Elif İlkay Yüce, Evrim Şimşek, Burcu Yağmur, Hatice Soner Kemal, Nuray Memişoğlu Akgül, Cahide Soydaş Çınar, Mehdi Zoghi, Cemil Gürgün

Ege University Faculty of Medicine, İzmir

Introduction: The comparison of target therapeutic range (TTR) period of INR in one-year warfarin users followed in the same centre by educated, single health personnel and by general cardiology outpatient clinic
Materials and Method: One-year individual TTR percentage of INR values in patients followed in our tertiary centre, by specialized INR outpatient clinic (Group A, n=233) and by general cardiology outpatient clinic (Group B, n=148) was calculated by Roosendaal formula. Target INR values for atrial fibrillation (AF) and other reasons for warfarin use was defined as 2-3 and for prosthetic valve as 2.5-3.5.
Results: There was no significant difference between groups in basal characteristics of the patients such as, sex, age, heart failure, hypertension, diabetes mellitus, smoke, renal failure and anti-inflammatory use. The mean age of patients was 62±12.3 years and 43.8% (n=167) were male. All of the patients were using warfarin for a long time and 64.8% for more than 3 years. In Group A warfarin was used for AF more often (59.1%) and Group B the use for AF and prosthetic valve was equal. There was no significant difference between groups in terms of factors effecting on reaching target INR level, such as gender, educational degree, antiplatelet use, advanced age (>75, n=67) and lifestyle. The average number of INR control in a-year was 14.1±3.6 and was similar in both groups. There were no significant difference between HAS-BLED score and CHADS2-VASc2 score of the groups. Group B had high risk of embolism with an average CHADS2-VASc2 score of 3.5, while a relatively low risk of bleeding with an average HAS-BLED score of 2.09±1.3. The average TTR of the whole study group was 62.1±20.7% and there was a significant difference between groups (Group A, 68.8%±15.8% vs. Group 51.6%±23%, p<0.001). Bleeding complications occurred in 93 patients and 26.8% of them (n = 25) had a major bleeding (The Bleeding Academic Research Consortium [BARC 3 and above]) and no significant difference between the groups.
Discussion and Conclusion: Despite tight controls of INR levels, most randomized controlled trials' TTR percentages do not surpass 70%. In real life experiences, these rates fall further. In our study, the real-life experience shows that, while TTR percentage of general outpatient follow-up is 51.6%, it is 68.8% in specialized outpatient follow-up, revealing the importance of specialized clinics. In conclusion, our study shows that with similar INR level controls in a year, specialized outpatient clinics are more effective in reaching TTR rates than general cardiology outpatient clinics.

Interventional cardiology / Coronary

OP-146

Vitamin D deficiency is associated with coronary artery ectasia

İsa Öner Yüksel, Selçuk Küçükseymen, Göksel Çağırcı, Erkan Köklü, Çağın Mustafa Üreyen, Nermin Bayar, Cem Yunus Baş, Görkem Kuş, Murat Esin, Şakir Arslan

Antalya Education and Research Hospital, Antalya

Introduction: Vitamin D deficiency is associated with coronary artery disease and cardiovascular death. Endothelial dysfunction plays a key role in the pathogenesis of coronary artery disease, vitamin D deficiency is associated with endothelial dysfunction.
Materials and Method: 107 patients with vitamin D deficiency and coronary angiography performed and 35 control patients with normal vitamin D levels and coronary angiography performed were included to the study. While 86 men (80.4%) and 21 women (19.6%) with coronary artery ectasia, 22 women (62.9%) and 13 (37.1%) were male in the non-coronary artery ectasia group. While he mean age of 66±6 in ectasia group, the control group was 66±7. While still in ectasia group BMI was 26.3 ± 3.0, 27.1±4.0 in the control group.
Results: While patients without coronary artery ectasia the average vitamin D levels were 23:49±8:29, vitamin D levels in patients with coronary artery ectasia were 15.61±7.73 (p=0.0001). Low vitamin D levels were associated with a significantly increased risk of coronary artery ectasia.
Discussion and Conclusion: In our study, a significant relationship was found between coronary artery ectasia and vitamin D deficiency. Coronary artery ectasia documented by angiographicallyhas been associated with vitamin D deficiency.

Table 1. HCharacteristics of patients

Variables	Patient with coronary artery ectasia	Patient without coronary artery ectasia	P value
Age (years)	66.3 ± 6.7	66.8 ± 7.1	NS
BMI (kg/m²)	26.3 ± 3.0	27.1 ± 4.0	NS
Hs- CRP (mg/L)	3.76 ± 3.2	3.5 ± 2.2	NS
25 (OH) D (ng/ml)	15.61 ± 7.73	23.49 ± 8.29	0.0001

Congenital heart diseases

OP-147

Echocardiographic assessment of right ventricular function in patients with repaired tetralogy of Fallot: parameters related to ejection fraction

Senem Has Hasırcı, Bahar Pirat, Ersin Doğanözü, Emre Özçalık, Haldun Müderrisoğlu

Başkent University Faculty of Medicine, Ankara

Introduction: After surgical repair of tetralogy of Fallot (TOF), right ventricle (RV) dilatation and dysfunction is a major concern, primarily due to pulmonary regurgitation. In these patients, optimal timing of pulmonary valve replacement is uncertain. In this study we aimed to assess RV function in adult patients with repaired TOF using comprehensive echocardiographic techniques.

Materials and Method: Forty-two patients with repaired TOF, and thirty-one age and sex-matched healthy controls were prospectively studied. Two-dimensional echocardiography was used to estimate RV end diastolic diameter, RV end diastolic area, end systolic area and fractional area change (FAC). Tricuspid annular peak systolic excursion (TAPSE) was measured using M-mode echocardiography. Tissue Doppler imaging was used to determine annular RV free wall peak systolic S wave. Peak systolic global RV longitudinal strain was determined using speckle tracking echocardiography. RV end-diastolic and end-systolic volumes and ejection fraction (EF) were assessed by real-time 3-dimensional (3D) echocardiography using an RV volume analysis package.

Results: Mean age of the patients and controls were 22.3±4.2 and 22.9±2.5 years, respectively (p=0.479). FAC was significantly lower in patients than controls (31.7±4.2% and 44.0±3.1%, respectively, p<0.001). RV tissue Doppler S wave of patients and controls were 8.7±3.1 cm/sn and 14.9±1.7 cm/sn, respectively (p<0.001). Peak systolic global longitudinal strain was significantly lower in patients with repaired TOF than controls (-15.8±3.3% and -24.5±3.06% respectively, p<0.001). RVEF with 3D echocardiography was significantly lower in repaired TOF patients when compared with controls (46.5±5.5% and 59.1±2.0%, respectively p<0.001). 3D RVEF was significantly correlated to TAPSE, FAC, RV tissue Doppler S wave and longitudinal peak systolic strain. On multivariate analysis FAC and tissue Doppler S wave were independent parameters related to RV EF.

Discussion and Conclusion: Right ventricular function in patients with repaired TOF is impaired when compared with healthy controls. Fractional area change and tissue Doppler S velocity can be used to predict RVEF determined by 3D echocardiography.

Pulmonary hypertension / Pulmonary vascular diseases

PP-001

Admission creatinine kinase-MB levels in patients with moderate to high risk pulmonary embolism undergoing thrombolytic therapy

Mehmet Bozbay[1], Hüseyin Uyarel[2], Şahin Avşar[1], Ahmet Öz[1], Muhammed Keskin[1], Veysel Ozan Tanık[1], Nijad Bakhshaliyev[1], Berat Arıkan Aydın[1], Seçkin Pehlivanoğlu[1], Mehmet Eren[1]

[1]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[2]Bezmialem University Faculty of Medicine, İstanbul

Introduction: The relationship between creatinine kinase-MB (CKMB) and clinical outcomes in acute coronary syndromes is well known. In the present study, we evaluated the association between admission CKMB levels and prognosis in patients with moderate to high risk pulmonary embolism (PE) undergoing thrombolytic therapy.
Materials and Method: Patients were evaluated according to the pulmonary embolism severity index (PESI) for risk classification. A total of 148 patients (mean age 61.8±15.7, 69 male) with moderate to high risk PE undergoing tissue-Plasminogen Activator therapy enrolled into the study. Patients were divided into two groups according to admission CKMB levels. The high admission CKMB group (n=35) was defined as having a CKMB level >31.5 ıu/l, and the low CKMB group (n=113) was defined as having a CKMB level ≤31.5 ıu/l. The mean follow-up was 30 months.
Results: Admission CKMB levels were positively correlated with PESI score (r=0.462, p<0.001) and negatively correlated with left ventricular ejection fraction (r=-0.2, p=0.03). Patients in the high CKMB group had a higher rate of in-hospital mortality (37.1% vs. 1.8%, p<0.001). In the Receiver Operating Curve analysis, a cut-off value of admission CKMB level 31.5 ıu/l had a sensitivity of 86.7% and a specificity of 83.5% for predicting in-hospital mortality (area under curve = 0.893, 95% CI: 0.805 -0.98, p<0.001). All parameters of PESI and admission CKMB levels were evaluated in multivariate analysis. High admission CKMB level was an independent predictor of in-hospital mortality (odds ratio: 1.076, 95% CI: 1.02-1.35, p=0.007). Long-term mortality was similar in both groups (2.8% vs 7%, p=0.36).
Discussion and Conclusion: Admission CKMB level predicts in-hospital mortality in patients with moderate to high risk PE undergoing thrombolytic therapy.

Pulmonary hypertension / Pulmonary vascular diseases

PP-002

The incidence and predictors of asymptomatic pulmonary embolism in patients with atrial fibrillation

Gamze Babur Güler[1], Ekrem Güler[1], Tuğba Akıncı[1], Özlem Soğukpınar[2], Suzan H. Akpınar[3], Hacı Murat Güneş[1], Gültekin Günhan Demir[4], Çetin Geçmen[4], Cengiz Erol[1], Fethi Kılıçaslan[1]

[1]İstanbul Medipol University, İstanbul
[2]Süreyyapaşa Chest Disease and Chest Surgery Training and Research Hospital, İstanbul
[3]Ersoy Hospital, İstanbul
[4]Kartal Koşuyolu Education and Research Hospital, İstanbul

Introduction: Pulmonary embolism (PE) is a life threatening clinical entity and has a wide clinical spectrum ranging from asymptomatic patients to cases presenting with cardiac arrest. It is still not clear if right atrial emboli in atrial fibrillation (AF) resulted in PE or the PE clinic in the patients increases right sided pressures causing AF. In this study, we investigated the incidence and predictors of asymptomatic PE in patients undergoing AF ablation.
Materials and Method: We included patients with persistant/paroxysmal AF who had three-dimensional left atrial and pulmonary venous computed tomography (CT) angiographic scan to guide the ablation procedure. Patients with previous or symptomatic PE or venous thromboembolism (VTE) diagnosis, chronic pulmonary disease, pulmonary hypertension, interatrial septal defect or increased right heart pressures detected with echocardiography, history of stroke, TIA or coagulopathy, history of cancer and inapropriate contrast for the evaluation of pulmonary arterial tree during CT scan were excluded. The evaluation of images were conducted in a double-blind manner by a radiologist and pneumatologist. PE was defined as present or absent by using the Modified Miller score.
Results: A total of 93 patients who underwent AF ablation procedure were evaluated for enrollment. One patient had a mass compatible with cancer detected in the CT scan, 2 patients had a history of malignant disease, 1 patient had deep vein thrombosis in lower extremity, 1 patient had a history of PE, 1 patient gave a history of long distance travel and dyspnea when he was questioned again, 6 patients had a history of stroke /TIA, in 10 patients the contrast in the pulmonary arteries wasn't sufficient for evaluation. Finally, 71 patients aged 53±13 years were included. Median Miller index determined by the first observer was 0,[10-0] and first observer reported definite pulmonary embolism in 14.1% patients, suspected pulmonary embolism in 14.1% patients. Second observer reported a median Miller index of 0,[12-0], definite pulmonary embolism 8.5%, suspected pulmonary embolism 16.9%. Univariate logistic regression showed that age, CHA_2DS_2-VASc Score, diabetes mellitus and pulmonary artery diameter were significantly associated with PE. Two different multivariate models were used to test PE predictors because we cannot use the CHA_2DS_2-VASc score components and the score by itself in the same analysis.CHA_2DS_2-VASc score (10.72 with a p-value of 0.0047) was the only statistically significant predictor for PE in multivariate analysis.
Discussion and Conclusion: This study determined the incidence of asymptomatic PE in AF patients and showed that increasing CHA_2DS_2-VASc score is associated with asymptomatic PE. Since patients with high CHA_2DS_2-VASc score are already anticoagulated the result does not change clinical practice but it is noteworthy in terms of cause-effect relationship between AF and PE.

Pulmonary hypertension / Pulmonary vascular diseases

PP-003

Comparison between D-dimer and troponin I for prediction of right ventricular dysfunction in patients with acute pulmonary embolism

Selçuk Yazıcı[1], Recep Hacı[1], Okan Uzun[1], Şükrü Akyüz[1], Sait Terzi[1], Ali Buturak[2], Zeynep Antep[1], Kemal Yeşilçimen[1], Tuncay Kırış[3]

[1]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[2]Acıbadem University, İstanbul
[3]İzmir KÇÜ Atatürk Training and Research Hospital, İzmir

Introduction: The latest researches demonstrated that d-dimer which is used in diagnosing the patients with acute pulmonary embolism has also importance in showing prognosis of the disease. However the data regarding the relation between d-dimer levels and right ventricular dysfunction (RVD) is limited. In the present study we investigated predictability of RVD with D-dimer levels and compared with cardiac troponin I.
Materials and Method: We retrospectively analyzed the data of patients for which acute pulmonary embolism diagnosis was verified by pulmonary MDCT angiography. 87 patients who had troponin I, d-dimer values and MDCT images included in this study. RVD was evaluated by MDCT images and defined when RV/LV ratio is >1. Troponin and D-dimer levels were compared between patients with and without RVD. Sensitivity, specificity, positive and negative predictive values were calculated for prediction of RVD
Results: The mean age of patients was 68 (51% female). RVD was defined in 60% of the patients. There was no statistically significant difference between demographic characteristics of patients with and without RVD. Troponin I and d-dimer levels were higher in RVD group (0.39 vs. 0.07, p<0.0001 and 3459 vs. 2102, p=0.005 respectively). In ROC analysis AUC were 0.74 for troponin I and 0.68 for d-dimer. Sensitivity, specificity, positive and negative predictive values were 82%, 48%, 70% and 65% for troponin I; 61%, 62%, 71% and 52% for d-dimer respectively.
Discussion and Conclusion: D-dimer levels are significantly higher in patients with acute acute pulmonary embolism and RVD than patients without RVD. RVD occurrence prediction in patients with acute pulmonary embolism can be done sensitively by troponin I, but more specificly by d-dimer.

Pulmonary hypertension / Pulmonary vascular diseases

PP-004

Prognostic impact of serum creatinine and its change patterns in patients with intermediate-high risk pulmonary embolism

Şahin Avşar[1], Mehmet Bozbay[1], Ahmet Öz[1], Nijad Bakhshaliyev[1], Muhammed Keskin[1], Ahmet Murat[1], Adnan Kaya[2], Mert İlker Hayıroğlu[1], Ahmet Okan Uzun[1], Mehmet Eren[1]

[1]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[2]Şanlıurfa Suruç State Hospital, Şanlıurfa

Introduction: An appropriate assessment of the prognosis in patients with PE may guide decision making in terms of the intensity of the initial treatment during acute phase, duration of treatment and intensity of follow-up control visits in the long term. Primer reperfusion treatment, especially systemic thrombolytic, is the treatment choice for patients with high-risk PE. Systemic thrombolytic therapy, given as primary reperfusion therapy, can prevent potentially life-threatening hemodynamic decompensation or collapse in intermediate-high risk PE patients, but this benefit is counterbalanced by a high risk of haemorrhagic stroke or major non-intracranial bleeding.
Materials and Method: Patients were evaluated according to the pulmonary embolism severity index (PESI) for risk classification. Patients who exhibit evidence of both RV dysfunction(by echocardiography) and elevated cardiac biomarker levels in the circulation (a positive cardiac troponin test) were classified into an intermediate-high –risk category. A total of 230 patients (mean age 59.5±21.4, 124 male) was retrospectively enrolled in the study. Patients were divided into two groups according to admission creatinine level increases more than 0.3 mg/dl within 48 hours during in-hospital stay (group 1 n=23) (stage 1 acute kidney injury according to the AKIN criteria for changes in creatinine) or unchanged (group 2 n=207), (stable or decreased). The primary outcome was in-hospital death, hemodynamic decompensation or collapse.
Results: Patients in the group 1(creatinine increased) had a higher rate of in-hospital mortality (17.3% vs 2.89%, p=0.001). Elevated dynamic changes of serum creatinine level (>0.3 mg/dl) and pulmonary embolism severity index parameters were evaluated with multivariate analysis. Elevated dynamic changes of serum creatinine level (>0.3 mg/dl) was an independent predictor of in-hospital mortality (odds ratio: 4.52, %95 CI: 1.11-18.05, p=0.03). Also in group 1 patients: minor bleeding, asystole, hypotension, cardiogenic shock, need for inotropic drugs and mechanical ventilation was found to be more than in group 2 patients. Finally, the rate of hospitalization was found to be higher in group 1 patients.
Discussion and Conclusion: In intermediate-high risk PE patients, daily creatinine value and its dynamic change can predict hemodynamic decompensation, collapse and death. Finally to define acute kidney injury by using daily creatinine value may be used to determine the patients who can benefit from systemic thrombolytic therapy without increased bleeding complications.

Pulmonary hypertension / Pulmonary vascular diseases

PP-005

Galectin-3 levels in pulmonary hypertension

Ümit Yaşar Sinan[1], İsmail Polat Canbolat[2], Ayşem Kaya[1], Semiramis Özyılmaz[1], Mehmet Serdar Küçükoğlu[1]

[1]İstanbul University Institute of Cardiology, İstanbul
[2]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul

Introduction: Galectin-3 is a protein member of the lectin family encoded by the LGAL S3 gene. This protein has been shown to be involved in the following biological processes cell adhesion, cell activation and

chemoattraction, cell growth and differentiation, cell cycle, and apoptosis. Elevated Galectin-3 levels has been associated with decompansated heart failure (HF) which is a complex mechanical and neurohormonal syndrome. We aimed to assess the relationship between Galectin 3 level and clinical severity of pulmonary artery hypertension (PAH).
Materials and Method: We evaluated 34 patients with PAH (12 patients with idiopathic PAH and 22 patients with Eisenmenger syndrome) and 24 sex and age matched controls. Simultaneously, serum N-terminal pro-brain type natriuretic peptide (NT-ProBNP) levels, 6 minute walking test (6MWT), World Health Organization functional capacity (WHO-FC) and tricuspid annular plane systolic excursion (TAPSE) were obtained at the same visit and used as the severity indicator of PAH.
Results: Mean age of the patients was 41,44±13,98. 27 patients were female (79%). 24 patients with WHO-FC 2 and 10 patients with WHO-FC 3 were included in the study. Patients with PAH had significantly higher Galectin-3 levels compared with controls (13,87±6,18 U/mL vs 10,41±1,89 U/mL p=0,01). There was no difference between IPAH and Eisenmenger group when Galectin-3 levels were compared (p=0,684). Galectin-3 levels were related with NT-ProBNP, 6MWT, and WHO-FC (p=0,01; p=0,01; p=0,02) but there was no correlation between TAPSE and Galectin-3 levels.
Discussion and Conclusion: Galectin-3 levels are elevated at PAH patients and also correlated with NT-ProBNP, 6MWT and WHO-FC. There is a need large scale study to demonstrate the relationship.

Pulmonary hypertension / Pulmonary vascular diseases

PP-006

Dynamic changes of serum creatinine level predicts in-hospital mortality in patients with acute pulmonary embolism

Şahin Avşar[1], Mehmet Bozbay[1], Hüseyin Uyarel[2], Nijad Bakhshaliyev[1], Ahmet Öz[1], Veysel Ozan Tanık[1], Muhammed Keskin[1], Kemal Yeşilçimen[1], Seçkin Pehlivanoğlu[1], Mehmet Eren[1]

[1]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[2]Bezmialem University Faculty of Medicine, İstanbul

Introduction: The relationship between serum creatinine level and in-hospital mortality is well known in cardiovascular diseases. The aim of this study was to evaluate dynamic changes of serum creatinine levels and in-hospital mortality of patients with acute pulmonary embolism (APE).
Materials and Method: A total of 266 patients (mean age 63.3±16.0, 120 male) with APE enrolled in the study. Serum creatinine levels available in 252 patients and dynamic changes of creatinine levels were noted. Patients were divided into two groups according to dynamic changes of serum creatinine levels. Patients with increase of serum creatinine level more than 0.3 mg/dl within 48 hours during in-hospital stay(AKIN criteria for acute kidney injury) was enrolled in group 1 (n=30) and increase of creatinine level less than 0.3 mg/dl or no changes of creatinine level was enrolled in group 2 (n=222).
Results: In-hospital mortality rate was 10.7%. Patients in the group 1 had a higher rate of in-hospital mortality (26.6% vs 8.5%, p=0.003). Elevated dynamic changes of serum creatinine level (>0.3 mg/dl) and pulmonary embolism severity index parameters evaluated multivariate analysis. Elevated dynamic changes of serum creatinine level (>0.3mg/dl) was an independent predictor of in-hospital mortality (odds ratio: 4.52, %95 CI: 1.11-18.05, p=0.03).
Discussion and Conclusion: Elevated dynamic change of serum creatinine level more than 0.3 mg/dl within 48 hours during in-hospital stay predicts in-hospital mortality in patients with APE.

Pulmonary hypertension / Pulmonary vascular diseases

PP-007

Speckle tracking 2D strain and serum ghrelin levels in pulmonary arterial hypertension patients

Serkan Ünlü, Burak Sezenöz, Gülten Taçoy, Sedat Türkoğlu, Atiye Çengel

Gazi University Faculty of Medicine, Ankara

Introduction: Pulmonary hypertension (PH) leads to right ventricular (RV) remodeling and dysfunction. Regardless of etiology, clinical deterioration and mortality are strongly associated with RV dysfunction in PH patients. Assessment of right ventricular (RV) function with echocardiography has become more of an important issue in predicting outcome and treatment decisions of PH patients. Ghrelin is a peptide mostly secreted from gaster, which has various effects in cardiovascular system.Idiopathic PAH patients have increased ghrelin levels in plasma, however effect of ghrelin is not elited in other forms of PH. Ghrelin would play a role in PH pathogenesis, and there is no data showing relationship between echocardiographic assessment of right heart and the levels of ghrelin in PH patients. We tried to figure out ghrelin levels in PH patients and its correlation with RV function.
Materials and Method: 20 PAH patients (40±17 yo,18 female) with different etiologies (3 systemic disease, 2 idiopathic, 12 congenital, 3 chronic thromboembolic PH) and a matched control group with 20 normal people were included. Plasma ghrelin levels were studied. RV dimensions, fractional area change (FAC), segmental (LS) and global longitudinal strain (GLS) as well as left ventricular ejection fraction (LV EF) and LV LS and GLS were measured. To examine the association between ghrelin and RV assessment methods, correlation coefficient was used.
Results: The serum ghrelin levels were showing a trend to be higher in the PAH group (1020±480 pg/ml vs 860±240 pg/ml; p=0.059), however, the difference would not be found statistically important due to few number of patients. PH patients had similar LV EF, RV FAC and TAPSE (59±10% vs. 62±9%, 32±10% vs. 40±9%, 17±3,7 mm vs 19±3,1 mm, all P=NS, respectively), however, PH group had lower RV GLS (-16.3± 4.1% vs.-25.9±4.5%, p<0.001) RV free-wall LS (-16.3± 7.1% vs.-20.0± 5.0%, p<0.001) and LV GLS (-15.3±7.1% vs.-25.0± 5.0%, p<0.001) and higher PH (75±16 vs. 19±3 mmHg, p<0.001). There was also a positive correlation between serum ghrelin level and RV GLS (r=0.5 p<0.049).
Discussion and Conclusion: RV dysfunction plays an important role for survival and clinical stability of PAH patients. With conventional echocardiography methods we found that PAH patients had similar RV function with control group, however with the integration of deformation imaging parameters we can see that RV function in PAH patients is impaired. Serum ghrelin levels also could be used to predict RV impairment, but it should be validated with large volume prospective studies.

Lipid / Preventive cardiology

PP-008

The association between carotid intima-media thickness and nonalcoholic steatohepatosis in presence of metabolic syndrome

Cemal Kemaloğlu[1], Didem Melek Kemaloğlu[2], Zehra Erkal[3]

[1]Akdeniz University, Faculty of Medicine, Antalya
[2]Antalya Atatürk State Hospital, Antalya
[3]Antalya Education and Research Hospital, Antalya

Introduction: NAFLD is strongly assosiated with metabolic disorders and because of this an association between NAFLD and cardiovascular risk is not a surprise however, whether NAFLD has a direct impact on atherosclerosis independent of other metabolic risk factors is unclear. We aimed to investigate of this direct impact, if there is.
Materials and Method: The total number of subjects involved in this study was 103, who presented for any reason to our clinic between 1 May 2009 and 1 May 2010. The inclusion criteria was an ultrasonographic determinant of hepatosteatosis (grade II, II-III or III) without precense of a coronary or peripheric artery disease. Patients observed as groups that metabolic syndrome positive and negative by the inclusion criterias based on the presence of insulin resistance. 50 healty people, at similar ranges of age and sex, made the control group. Basal demographic characteristics of patients and control group are determinated and their lipid profils, serum fasting glukoz and insulin levels are measured. Carotis intima media thickness of all patients and control group measured by the high resolution B-mode carotis ultrasonography.
Results: Carotid intima media thickness levels in NAFLD groups (with or without metabolic syndrome) were significantly higher than those in control group (mean max c-imt levels: in the MS(+) group is 0.869 mm, in the MS(-) group is 0.831 mm, in control group is 0.724 mm, p<0.001). The mean max. c-imt levels were significantly higher in the NAFLD group with metabolic syndrome than those in the group without metabolic syndrome (p:0.19). HOMA-IR levels were increased in the group with metabolic ayndrome than those in the group without metabolic syndrome, with statistical difference (p:0.001). The patients with NAFLD and without metabolic syndrome observed as groups that HOMA-IR positive (n = 21, 43.8%) and HOMA-IR negative (n=27, 56.3%), there was no difference in c-imt levels between HOMA-IR positive and negative groups (p:0.254). This data showed that there was no association between increased c-imt levels in metabolic syndrome negative group and insulin resistance.
Discussion and Conclusion: Finally data from this study give rise to thought that NAFLD was significantly associated with an increased risk of carotid atherosclerosis and atherosclerotic heart diseases, independent from other metabolic risk factors. By the addition of other metabolic risk factors, the effect of NAFLD on atherosclerosis increase and the role of inflammation seems more significantly. Along with the belief that data from this study will help to improve clinical outcomes, we esteem that these data should be supported by large scale prospective studies.

Lipid / Preventive cardiology

PP-009

The severity of nonalcoholic fatty liver disease is associated with increased frequency of fragmented QRS complex

İsmail Gürbak[1], Ali Rıza Akyüz[1], Mustafa Tarık Ağaç[3], Muslihittin Emre Erkuş[4]

[1]Akçaabat Haçkalı Baba Devlet Hospital, Trabzon
[2]Sakarya University Faculty of Medicine, Sakarya
[3]Harran University Faculty of Medicine, Şanlıurfa

Introduction: Non-alcoholic fatty liver disease (NAFLD) is associated with cardiovascular disease independently of conventional risk factors. It is as a risk factor not only for atherosclerotic cardiovascular disease, but also for early changes in cardiac structure and function. The association between presence of fragmentation of QRS complexes (fQRS) and myocardial fibrosis has been suggested in various heart disease which is a prognostic marker of cardiovascular events and mortality. The main aim is this study whether fQRS is associated with NAFLD.
Materials and Method: A total of 1047 subjects underwent abdominal ultrasonograpghic examination were performed. All patients were evaluated for the presence and degree of hepatic steatosis. After exclusion, final population of 234 patients, of whom 131 had some degree of hepatosteatosis were included in the study analysis. Fragmented QRS was assessed using a 12-lead electrocardiogram.
Results: There were 103 subjects without NAFLD, 79 subjects with grade 1 NAFLD, 52 subjects with grade 2 and grade 3. Increasing the NAFLD grade was associated increasing frequency of fQRS (absence NAFLD: 29%, grade 1 NAFLD: 39%, grade 2 and 3 NAFLD: 67%, p<0.001). Binary logistic regression analysis was performed to find the independent factors associated with frequency of fQRS (Table 1). NAFLD (OR: 2.325; 95% CI, 1.274-4.246, p=0.006), presence of diabetes mellitus (OR: 3.395; 95% CI, 1.363-8.457, p=0.009) and waist circumference were (OR: 1.016; 95% CI, 1.002-1.030, p=0.028) found to be independently associated with presence of fQRS.
Discussion and Conclusion: Severity of NAFLD on ultrasound was associated with frequency of fQRS on routin surface ECG.

Table 1. Binary logistic regression analysis showing indepe

	f QRS (-) n=139	f QRS (+) n=95	OR (95% CI)	p
NAFLD, n (%)	64 (46 %)	66 (69 %)	2.325 (1.274-4.246	0.006
DM, n (%)	9 (6.5 %)	20 (21 %)	3.395 (1.363-8.457)	0.009
Waist circumferase (cm)*	96 (86-110)	104 (96-120)	1.016 (1.002-1.030)	0.028

The covariates included waist circumference, creatinine, uric acid, smoking status, presence of DM, NAFLD, HT and hyperlipidemia

Lipid / Preventive cardiology

PP-010

Evaluation of mediterranean diet adherence in patients with a history of coronary revascularization

Meryem Kara[1], Burak Açar[1], Cengiz Burak[1], Fatih Bayraktar[1], Esra Gücük İpek[1], Ümit Güray[2], Burcu Demirkan[1], Yeşim Güray[1]

[1]Türkiye Yüksek İhtisas Hospital, Ankara
[2]Ankara Numune Training and Research Hospital, Ankara

Introduction: Lifestyle modification is an important component of the secondary prevention strategies; and a healthy diet is one of the cornerstones in management of the coronary heart disease. We aimed to investigate the dietary habits of the patients with history of coronary revascularization and characteristics of the ones with good adherance.
Materials and Method: We included outpatients who had a history of coronary revascularization at least 6 months prior to enrollment. Each participant filled out a questionnaire to collect the data of demographics and clinical characteristics. Alternate MedDiet score was calculated to evaluate the Mediterranean style dietary adherence. Alternate MedDiet was originally based on 14-item questionnaire; we adjusted it to for the relevant population (max 13 points).
Results: We enrolled 202 consecutive outpatients (age 61.3±11.2 years, 73% males). The median duration after revascularization was 60 months. A total of 104 (51%) patients had previous percutaneous coronary intervention (PCI), 67 (33%) had coronary by-pass graft surgery (CABG), and 31 (15%) had both of the revascularization procedures. The median MedDiet score was 6. Patients were stratified into two subgroups (MedDiet score ≥7 vs. <0.0001, OR = 12.45, 95% CI: 3.67-42.23), NYHA class (p<0.0001, OR = 4.77, 95% CI: 2.38-9.54), and revascularization with CAGB+PCI (p=0.003, OR = 3.9, 95% CI: 1.6-9.5) were independent predictors of good MedDiet scores.
Discussion and Conclusion: The adherence rate to a healthy diet was low in patients with previous coronary revascularization. High education level, history of combined (CABG+PCI).

Lipid / Preventive cardiology

PP-011

Vascular risk age and pulce wave velocity: can they be used in daily practice?

Lale Tokgözoğlu, Serkan Asil, Hikmet Yorgun, Ozan Ünlü, Giray Kabakcı, Kudret Aytemir, Necla Özer

Hacettepe University Faculty of Medicine, Ankara

Introduction: Systematic Coronary Risk Evaluation (SCORE) estimates 10-year risk of fatal cardiovascular disease (CVD) and its application is recommended by European guidelines. Absolute risk of CVD (particularly fatal CVD), independent of risk factors, is relatively low in younger people. Expressing the risk as their "risk age" may aid the understanding of the risk and facilitate implementation of necessary life style changes. Risk age of the patients with CVD risk factors defined by SCORE risk charts but low absolute risks for fatal CVD due to their young age will be calculated in this study. The main purpose is to demonstrate a possible correlation of risk age and level of subclinical atherosclerosis which is shown by pulse wave velocity (PWV) device.
Materials and Method: This study was designed as a cross-sectional study. Systematic Coronary Risk Evaluation according to ESC CVD prevention guideline and vascular risk age with corresponding 10-year fatal CVD risk defined by Cuende JI, et al (1) will be calculated for the patients below the age of 50 and without any previous diagnosis of atherosclerotic disease or equivalent. Pulse wave velocity of each patient will be measured non-invasively using PWV device(Mobil-O-Graph, IEM). Statistical analysis was performed using SPSS.
Results: Study population included a total of 300 patients (156 female, 144 male) and the mean age was 35,1±9,5 years. Mean PWV of the entire study population was 6,3±1,3, mean vascular risk age was 44,3±5,5 and the median 10-year risk of fatal cardiovascular disease risk score was 0,4 [0,06-2,74]. These parameters showed statistically different values between male and female patients (p<0,001). A positive correlation was determined between PWV and 10-year risk of fatal cardiovascular disease risk (r=0,613; p<0.001). According to stepwise linear regression analysis, components of SCORE were independent predictors of PWV and were found to explain 58% of the variance in PWV values (p<0,001).
Discussion and Conclusion: Despite their young age, patients with high vascular risk age and therefore a 10-year risk of fatal cardiovascular disease risk were found to have high PWV values. These results show that calculations of vascular risk age might be of use for the assessment of fatal CVD risk in young patients our clinical practice. References 1. Cuende JI, Cuende N, Lagartos JC. How to calculate vascular age with the SCORE project scales: a new method of cardiovascular risk evaluation EHJ(2010) 31, 2351–2358.

Lipid / Preventive cardiology

PP-012

Acute effects of energy drink consumption on endothelial function

Javidan Akhundova,Cansın Tulunay Kaya, Demet Menekşe Gerede, Özgür Ulaş Özcan, Hüseyin Göksülük, Veysel Kutay Vurgun, Nil Özyüncü, Çetin Erol

Ankara University Faculty of Medicine, Ankara

Introduction: Energy drink consumption is increasing especially among adolescents and young adults. Cases of fatal arrtyhmia linked to energy drink consumption have been reported. Vascular effects of energy drinks are not known. This study investigates the effects of energy drinks on endothelial functions in healthy volunteers assessed by flow mediated dilation (FMD) of the brachial artery.
Materials and Method: 30 healthy volunteers (15 male) aging 19 to 46 years were included in the study. Demographic variables, baseline heart rate and blood pressures were recorded. Flow mediated dilation measurements of the brachial artery were performed and recorded per protocol. FMD values were calculated. The volunteers were asked to drink 355 ml of energy drink containing 53,25 mg caffeine after baseline measurements, and all measurements were repeated 60 minutes later. Baseline and post energy drink values were compared.
Results: Systolic blood pressure (p=0,59), diastolic blood pressure (p=0,71), and heart rate values (p=0,056) were similar before and after energy drinks. Baseline arterial diameters (p=0,24) and peak arterial diameters (p=0,79) in hyperemia also did not change after energy drink consumption. There was a 1,58% absolute decrease in FMD levels after energy drink consumption (9,7±4,6 % at baseline vs 8,1±4,7 % after energy drink) but the difference did not reach statistical significance (p=0,176).
Discussion and Conclusion: Energy drinks containing 53,25 mg of caffeine/355 ml did not have any significant influence on blood pressure, heart rate or endothelial functions in healthy volunteers.

Table 1. Baseline and post-energy drink parameters

Parameter	Baseline	Post energy drink	p value
Systolic blood pressure (mmHg)	111±12	114±13	0,59
Diastolic blood pressure (mmHg)	72±8	73±8	0,71
Resting heart rate (beat/min)	73±10	70±10	0,056
Baseline arterial diameter (mm)	3,7±0,7	3,6±0,6	0,24
Peak arterial diameter (mm)	4,1±0,7	4,1±0,7	0,79
Flow mediated dilation (%)	9,7±4,6	8,1±4,7	0,176

Lipid / Preventive cardiology

PP-013

Correlation between breast arterial calcification and the 10-year fatal cardiovascular risk by means of the SCORE risk system

Şeyma Yıldız[1], Ahmet Yıldız[2], Veysel Oktay[2], Okay Abacı[2], Hüseyin Toprak[1], Sinem Aydın[1], Cüneyt Koçaş[2]

[1]Bezmialem Vakıf University, İstanbul
[2]İstanbul University Institute of Cardiology, İstanbul

Introduction: The aim of this study is to investigate the relationship between breast arterial calcification (BAC) on mammography and the 10-year fatal cardiovascular disease (CVD) risk by using SCORE risk system
Materials and Method: A total of 66 women with BAC and 66 age-matched controls without BAC were analyzed. The groups were compared with respect to demographics, clinical, reproductive, laboratory parameters, and 10-year fatal CVD risk
Results: The mean ages of the women in the study was 54.0 years (40-85 years). Hypertension, systolic blood pressure, levels of serum total cholesterol and the calculated SCORE risk were higher in the BAC (+) group than in the BAC (-) group (p=0.04, p=0.031, p=0.046, and p=0.038 respectively). Multivariate analysis showed that none of them was independent factor of BAC on mammograms, only the 10-year fatal CVD risk was close to being statistically significant (OR: 1.17, CI: 0.98-1.38, p=0.06).
Discussion and Conclusion: BAC on mammography was found to be related to the 10-year fatal CVD risk as calculated by the SCORE risk score system. Additional large-scale prospective studies are required to further assess whether BAC can be considered a useful screening tool for CVD risk prediction in women who screened for breast cancer by mammography.

Figure 1. Breast arterial calcification on mammography

Anatol J Cardiol 2015; 15 (Suppl 1): 1-104

Lipid / Preventive cardiology

PP-014

Peripheral neuropathy development in patients after long term statin use

Özge Copkıran, Hakan Tıkız

Celal Bayar University, Faculty of Medicine, Manisa

Introduction: Statins; are considered to be first-line drugs used for lowering low-density lipoprotein cholesterol levels which is an independent risk factor for cardiovascular disease and one of the leading causes of death around the World. As one of the commonly used drugs, side effects of statins can not be ignored. The aim of the study was to determine the peripheral neuropathy side effect on patients who were prescribed statins in Celal Bayar University Department of Cardiology Out-patient clinic and have been using the drug for more than a year.

Materials and Method: The study group was selected from non-drug users who has been prescribed statins on indication and had none of the exclusion criteria. Statin users were grouped as atorvastatin and rosuvastatin users, depending on the dosage and length of drug use. All groups were neurologically examined by Celal Bayar University Physical therapy and rehabilitation clinic and ENMG tests were performed. All patients went through advanced physical examination. Polyneuropathy was graded according to the findings.

Results: There was no significant difference in terms of age and sex between study and control groups, on the other hand male population was found to be dominant in both groups. Incidence of peripheral neuropathy was found to be statistically significantly higher in long term statin users (p<0,01). Between the atorvastatin users polyneuropathy was diagnosed in 23 of the patients and 11 patients did not show any signs. On the other hand among the rosuvastatin users polyneuropathy was diagnosed in 10 of the patients and 6 patients did not show any signs. There was no statistically significant difference between two groups (p=0,720). Neurological findings of atorvastatin patients who has been using the drug less than a year showed 1 mild, 1 moderate polyneuropathy and 4 patients were healthy. Among the patients who has been using the drugs between 1 to 5 years; 3 patients were normal and 13 patients showed mild polyneuropathy. Among the patients who has been using the drug for more then while 5 patients did not show any signs of pathology, 7 patients were diagnosed with polyneuropathy. There was a statistically significant difference in polyneuropathy incidence according to the time interval of atorvastatin use (p=0.03).

Discussion and Conclusion: Our study results support the argument that long term use of statins cause peripheral neuropathy. Physical examination findings of the patients who were diagnosed with neuropathy were also correlated with ENMG results. In patients with chronic statin use; in case of prickling, numbness, pain, trembling of the hand and feet, instability during walking, muscle weakness, atrophy and autonomic findings peripheral neuropathy should be kept in mind and these patients should be further evaluated. When diagnosis of polyneuropathy depending on statin use is suspected, change of treatment regime or lowering of the drug dose should be considered.

Lipid / Preventive cardiology

PP-015

Specific clinics for follow-up in coronary artery disease

Salih Kılıç, Evrim Şimşek, Hatice Soner Kemal, Elif İlkay Yüce, Cemil Gürgün, Meral Kayıkçıoğlu, Cüneyt Türkoğlu

Ege University Faculty of Medicine, İzmir

Introduction: The beneficial effects of statin treatment in the early stages and maintenance therapy of ST-elevation myocardial infarction (STEMI) has been shown in multiple studies. Recent guidelines emphasize the importance of strict LDL-C control for secondary prevention in coronary artery disease (CAD). Also, preventive guidelines focus on patient education and regular follow-up in order to achieve target the recommended LDL-C levels of ≤70mg/dL in CAD. The aim of this study is to evaluate if there is a difference in achieving LDL-C goals as recommended by guidelines ≤70mg/dL in STEMI patients in our tertiary center,by comparing results of standard outpatient clinic follow-up and results of a single physician strategy with a more constructed approach.

Materials and Method: Consecutive 123 patients admitted between 2010-2014 with diagnosis of STEMI, treated with thrombolytic therapy were included. Group-A consisted of 64 patients followed by standard outpatient clinic and Group-B consisted of 59 patients, followed by a single physician. All patients had at least three visits and patients were educated on lifestyle changes for CAD.

Results: The mean age was 55±10 (77% male) and median follow-up was 6,2 months.Age, gender, diabetes, hypertension, hyperlipidemia, family history, renal failure, and LDL-C levels (Group-A 124±35 mg/dL, Group-B 129±37 mg/dL) were similar in both groups. There was a significant difference in last visit with regard to LDL-C levels and number of patients who reached treatment goal between groups (Group-A 105±35mg/dL vs. Group-B 92±41mg/dL, p<0.01,Group-A 6/64, Group-B 20/59, p<0.01 respectively). There was a significant difference in terms of change in the value of LDL-C between groups (Group A-10.2 ±34 % vs. Group B -27±28%, p<0.01).

Discussion and Conclusion: Guidelines suggest intensive statin therapy in early and long-term follow-up of patient with CAD. In-hospital early initiated intensive statin therapy is important for long term patient's compliance. However, interruption in drug use and difficulties in adapting to lifestyle changes are common problems. Regular follow-up to maintain target LDL-C levels and patient education have great importance. The importance of regular follow-up of CAD patients by a single physician with a more constructed approach including the education of the patients in achieving target LDL-C levels are demonstrated in this study.

Lipid / Preventive cardiology

PP-016

Do vitamin D levels effect atherogenic index of plasma?

Derya Baykız[1], Betül Ekiz Bilir[1], Neslihan Soysal Atile[1], Bülent Bilir[2]

[1]Tekirdağ State Hospital, Tekirdağ
[2]Namık Kemal University Faculty of Medicine, Tekirdağ

Introduction: Vitamin D deficiency has been associated with the development of such comorbidities as insulin resistance, type 2 diabetes mellitus, obesity, dyslipidemia and atherosclerosis. Recently; atherogenic index of plasma (AIP) which is calculated as the logarithm of the ratio of plasma level of triglycerides (TG) to the level of high density lipoprotein (HDL)-cholesterol (log [TG/HDL-C]) has been used as a significant predictor of atherosclerosis. The aim of this study is to evaluate the associations between vitamin D (25(OH) D) plasma levels and the AIP.

Materials and Method: Two hundred and fifty two patients (mean ages 45,8±12,9) who admitted to our hospital between September 2014 and April 2015 were retrospectively reviewed. Plasma concentrations of 25(OH) D, TG and HDL levels and body mass index (BMI) levels were recorded. The patients who had diabetes, hypertension, cardiovascular diseases, cancer or chronic inflammatory disease, or patients who were on drug treatment of vitamin D were excluded from the study.

Results: Our study results showed that there was a positive correlation between body mass index and AIP (p=0,000). Negative correlation was found between BMI and vitamin D (p=0,000). There was no statistically significant correlation between AIP and vitamin D (p=0,118).

Discussion and Conclusion: Our study results confirm the results of other studies that obese individuals with higher BMI have a higher risk of vitamin D deficiency and higher BMI is associated with an increased risk of atherogenic dyslipidemia. However, no significant correlation between vitamin D levels and AIP was found. New prospective studies are needed to support these findings.

Coronary artery disease / Acute coronary syndrome

PP-017

Red cell distribution width is associated with acute myocardial infarction in young patients

Onur Kadir Uysal[1], Mehmet Balli[2], Buğra Özkan[2], Durmuş Yıldıray Şahin[2], Murat Çaylı[2]

[1]Kayseri Training and Research Hospital, Kayseri
[2]Adana Numune Training and Research Hospital, Adana

Introduction: There are few studies about predictors of ST elevation myocardial infarction (STEMI) in young patients. High red cell distribution width (RDW) levels were associated with adverse outcomes in patients with STEMI. We aimed to investigate the relationship between RDW and STEMI in young patients.

Materials and Method: This study included 370 patients who presented to our hospital with STEMI (Group 1; 198 young patients,

Results: Compared with Group 3, Group 1 had a significantly higher value of RDW (Group 1 RDW 14.1±1.1%, Group 3 RDW 13.4±0.9 p1<0.01). Value of RDW was similar both of Group 2 and 4 (Group 2 RDW 13.7±1.2, Group 4 RDW 13.5±0.9 p2=0.1). Variables found to be statistically significant in univariate analysis between Group 1 and 3 were entered into multivariate logistic regression analysis. After multivariate analysis, high levels of RDW were independent predictors of STEMI in young patients (OR: 0.337, p<0.01) together with gender (OR: 3.725, p<0.01), history of hyperlipidemia (OR: 25.172, p<0.01) and high density lipoprotein cholesterol (OR: 1.088, p<0.01).

Discussion and Conclusion: High levels of RDW were associated with STEMI in young patients. We think that RDW is a widely available marker with no additional costs, in contrast to other novel markers of cardiovascular risk.

Coronary artery disease / Acute coronary syndrome

PP-018

The effects of benfotiamin in experimental acute myocardial infarction

Tolga Çakmak[1], Mustafa Necati Dağlı[2], Tuncay Kuloğlu[2], Mehmet Ali Kobat[2]

[1]Erciş State Hospital, Van
[2]Fırat University Faculty of Medicine, Elazığ

Introduction: Myocardial Infarction (MI) is a group of disease that causes the most deaths in cardiovascular diseases. Isoproterenol (ISO) is a -adrenergic agent, which is commonly used for induction of experimental acute myocardial infarction model. Benfotiamine is a fat-soluble form of vitamin B1 and is known to have antioxidant effects. In this study, we aimed to investigate the effects of Benfotiamine, which has antioxidant properties on heart tissues of rats with ISO-induced acute myocardial infarction.

Materials and Method: Twenty-four 8-week-old male Wistar rats were used in this study. Animals were divided into 4 different groups (6 animals /group). The control group (Group I) received no treatment during the 14 days. The Benfotiamine group (Group II) received oral Benfotiamine at a dose of 70 mg/kg/day. The MI group (Group III) and MI + Benfotiamine group (Group IV) received intraperitoneal isoproterenol at a dose of 150 mg / kg 2 times with 24-hour interval. MI + Benfotiamine group was given oral 70mg/kg/day Benfotiamine, while MI group received no treatment. At the end of the study, all rats were decapitated, and heart tissues were removed under anesthesia. Heart tissues were examined immunohistochemically by Haematoxylin & Eosin, Masson's trichrome, Bax and Caspase-3 and TUNEL staining.

Results: Immunohistochemical staining revealed a marked increase in Bax and Caspase-3 immunoreactivity in MI group compared to control and Benfotiamine groups and decrease was observed in MI + Benfotiamine group. TUNEL staining revealed increased apoptotic cells in MI group compared to the control and Benfotiamine groups and a decrease was observed in MI + Benfotiamine group.

Discussion and Conclusion: In conclusion, we observed protective effects of Benfotiamine against cellular changes in experimental acute myocardial infarction and so Benfotiamine may be a useful agent to challenge MI associated complications.

Coronary artery disease / Acute coronary syndrome

PP-019

The retrospective evaluation of the efficacy and safety of clopidogrel reloading dose who undergo percutaneous coronary intervention

Mustafa Beyazıt Alkan[1], Burcu Zihni[2], Murat Bilgin[3], Ahmet Sayın[4], İlker Gül[5], Bekir Serhat Yıldız[6], Cüneyt Türkoğlu[7]

[1]Acıpayam State Hospital, Denizli
[2]Isparta State Hospital, Isparta
[3]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[4]Tepecik Training and Research Hospital, İzmir
[5]Şifa University Hospital, İzmir
[6]Pamukkale University Faculty of Medicine, Denizli
[7]Ege University Faculty of Medicine, İzmir

Introduction: Clopidogrel has became standart treatment for patients undergoing percutaneous coronary intervention (PCI) for stable angina or acute coronary syndrome. Parallel to the increase of patients with coronary artery disease the use of anti-platelet drugs has increased too. In addition, due to drug eluting stent (DES) implantation, in the year following the treatment of acute myocardial infarction (AMI), PCI procedures or because of other anti-thrombotic events, chronic clopidogrel usage has increased before PCI. The aim of this study is to evaluate 30 days of clinical efficacy and safety (death, AMI, target vessel revascularization (TVR), MACE, stent thrombosis, and hemorrhage/vascular complication rates) of different doses of clopidogrel reloading therapy after PCI in patients receiving clopidogrel, regardless of whether there is clopidogrel resistance.
Materials and Method: Patients taking clopidogrel therapy (75mg/day) longer than 24 hours and patients who underwent coronary angiography (CAG) between 01 December 2009-30 June 2011 at Ege University, department of Cardiology were included. 1941 patient files which CAG was performed were scanned. 183 of these patients were suitable for the study and analyzed with their 30 days of follow up information after PCI. Patients were divided into two groups according to loading doses of clopidogrel after PCI. Patients were evaluated regarding the 30 days of outcome (death, AMI, TVR, MACE, stent thrombosis, and hemorrhage/vascular complication rates) after PCI.
Results: Patients were divided into 2 groups according to the given clopidogrel reloading dose after PCI (≤150 mg:group 1, ≥300 mg: group 2). No significant difference was detected between the groups regarding the 30 days end-point for death (%0 vs %1, p:0.53), death or AMI (%1.2 vs %1.0, p:0.72), TVR (%1.2 vs %0, p:0.47), and MACE (%2.3 vs %1.0, p:0.45). Major bleeding, cerebral bleeding or death causing bleeding wasn't detected.
Discussion and Conclusion: In this study we evaluated the 30 days of clinical efficacy and safety of different doses of clopidogrel reloading therapy after PCI in patients under the treatment of clopidogrel. No difference in terms of clinicl efficacy and safety events detected in patients under the treatment of clopidogrel who received low doses and high doses of clopidogrel reloding threapy after PCI, while ignoring clopidogrel resistance.

Coronary artery disease / Acute coronary syndrome

PP-020

The prognostic value of mean platelet volume to platelet count ratio (MPV/Plt) in ST-segment elevation myocardial infarction

İsmail Bolat[1], Özgür Akgül[2], Hüseyin Altuğ Çakmak[3], Hamdi Püşüroğlu[2], Umut Somuncu[2], Sinem Özbay Özyilmaz[2], Vesile Örnek[2], Mehmet Ertürk[2], Mehmet Gül[2]

[1]Fethiye Government Hospital,Muğla
[2]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[3]Rize Kaçkar Government Hospital, Rize

Introduction: Mean platelet volume to platelet count ratio (MPV/Plt) has been demonstrated to be a good indicator of long-term mortality in patients with non-ST-segment elevation myocardial infarction (NSTEMI). However, the prognostic value of MPV/Plt in STEMI is not reported. The aim of this study was to determine whether the MPV/Plt ratio on admission has any predictive value for major adverse cardiac events including short-and long-term mortality in patients with STEMI who underwent primary percutaneous coronary angioplasty (PCI).
Materials and Method: In this prospective study, 470 consecutive patients, who were diagnosed with an STEMI and underwent primary PCI were enrolled. The patients were divided into three tertiles based on the MPV/Plt ratio on admission. The first tertile (n=149) was defined as MPV/Plt ratio ≤0.029, second tertile (n=154) 0.029-0.038, and third tertile (n=159) ≥0.038. Primary clinical outcomes consisted of the sum of cardiovascular (CV) mortality, non-fatal re-infarction and stroke. Secondary clinical outcomes were CV mortality, non-fatal re-infarction, target-vessel revascularization (TVR), stroke, and advanced heart failure.
Results: There was no difference between study groups regarding the primary (p>0.05) and the secondary outcomes (p>0.05) except one-year non-fatal re-infarction rate, which was found to be significantly higher in the highest MPV/Plt ratio group (p=0.045). Age, Killip class > 1, and left ventricular ejection fraction were found to be independent predictors of long-term CV mortality in multivariate analysis (hazard ratios (95% confidence interval) 1.089 (1.051–1.128), 0.327 (0.113–0.948), and 0.838 (0.787–0.892); p=0.001, p=0.04, and p < 0.001, respectively).
Discussion and Conclusion: While the MPV/Plt ratio was demonstrated to be associated with one-year non-fatal re-infarction, it was not related to in-hospital, one-month, and one-year cardiovascular mortality in patients with STEMI who underwent primary PCI.

Coronary artery disease / Acute coronary syndrome

PP-021

Association of the zwolle score with fragmented QRS complex: a combined prognostic tool for primary angioplasty in STEMI

Ahmet Karakurt[1], Abdülmelik Yıldız[2], Serdar Başbuğ[1]

[1]Kafkas University Faculty of Medicine, Kars
[2]Medical Park Hospital Bahçelievler, İstanbul

Introduction: Zwolle score is a risk assessment system in primary percutaneous coronary intervention (PCI) with ST segment elevation myocardial infarction (STEMI). Fragmented QRS (fQRS) complex is an electrocardiographic parameter associated with an increased cardiac morbidity and mortality. We aimed to introduce the prognostic value of simultaneously calculated fQRS and Zwolle scores as a new scoring system in primary PCI of the STEMI patients.
Materials and Method: Two hundred seventy-eight STEMI patient treated with primary PCI were retrospectively analyzed. Patients with a Zwolle score >3 were classified as high risk (HighZs) whereas the values
Results: Wider QRS complex and higher Creatin Kinase-MB (CK-MB) and leukocyte count were detected in LowZs+fQRS group compared with LowZs+nonfQRS. Ejection fraction measurements were lower, and Killip scores of <1 were more frequent. Fragmented QRS was more frequently determined in anterior localization and left anterior descendent coronary artery lesions. Number of diseased vessels was significantly higher (p<0.004).
Discussion and Conclusion: Clinically, lowZs with fQRS was associated with high MACE ratio. Thus, utilization of Zwolle score along with the fragmented QRS is prognostically significant in primary PCI patients admitted with STEMI.

Coronary artery disease / Acute coronary syndrome

PP-022

The use of glomerular filtration rate alteration ratio in addition to CHADS2VASC score as a new predictive parameter for mortality in non-ST Elevation

Tuncay Kırış[1], Selçuk Yazıcı[2], Zeki Yüksel Günaydın[3], Ali Buturak[4], Osman Bektaş[3], Gönül Zeren[5], Uğur Kocabaş[1], Abdullah Doğan[1]

[1]İzmir KÇÜ Atatürk Training and Research Hospital, İzmir
[2]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[3]Ordu University Faculty of Medicine, Ordu
[4]Acıbadem University Faculty of Medicine, İstanbul
[5]Ordu State Hospital, Ordu

Introduction: Renal dysfunction is a predictor of adverse clinical events in patients with non-ST elevation myocardial infarction (NSTEMI). We evaluated the role of addition of change ratio in glomerular filtration rate (C-GFR) to CHA2DS2VASC score in predicting mortality for NSTEMI patients
Materials and Method: 457 consecutive patients with NSTEMI were prospectively enrolled. The addition of C-GFR to CHA2DS2VASC score was defined as novel CHA2DS2-VASC-CGFR score. GRACE and CHA2DS2-VASC-CGFR score were calculated for all the patients. The patients were divided into two groups: patients with CHA2DS2-VASC-CGFR score ≥3 (Group I) and those with CHA2DS2-VASC-CGFR score <3 (Group II). Total mortality at the end of the first year was considered as a primary end point
Results: Group I had higher incidences of diabetes mellitus, hypertension, heart failure and female gender (each p<0.05). Group I was older (p<0.05) and had a higher incidence of multi-vessel disease compared with Group II (p<0.05). At 12-month follow-up, total mortality was higher in group I than group II (Long rank, p=0.001) (Figure 1). The predictive value of CHA2DS2-VASC-CGFR score was similar to GRACE score according to receiver operating characteristics analysis [AUC: 0.70 (95% CI: 0,628-0,766) vs 0.69 (95% CI: 0.631-0.760), p=0.4, respectively, figure 2].
Discussion and Conclusion: CHA2DS2-VASC-CGFR score may be used as a novel marker in predicting mortality in patients with NSTEMI.

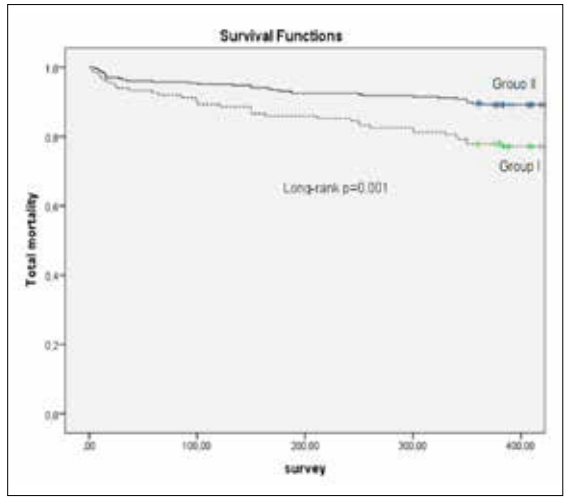


Figure 1. Meier survival plots of Group I and II

Coronary artery disease / Acute coronary syndrome

PP-023

The relationship between obstructive coronary heart disease and serum 25OH-vitamin D, MGP, fetuin-A, ADMA levels

Özge Copkıran[1], Uğur Taşkın[2], Ece Onur[1], Gönül Dinç Horasan[1], Canan Tıkız[1], Arzu Oran[1], Hakan Tıkız[1]

[1]Celal Bayar University, Faculty of Medicine, Manisa
[2]Akşehir Devlet Hastanesi, Konya

Introduction: The aim of the study is to compare 25OH-vitamin D, Matrix Gla Protein (MGP), Fetuin-A, Asymmetric dimethylarginine status with obstructive coronary artery disease.
Materials and Method: In this study 80 cases were enrolled and were chosen from the cases who had coronary angioraphy process in our clinic. The study population consisted of group 1: normal coronary arteries cases (n=40) and group 2: obstructive coronary artery disease (≥%70 occlusion of at least one coronary artery) cases (n=40).
Results: The male cases were significanty more in group 2 (p<0,001). The cases of group 1 were significantly younger than the cases of group 2 (p<0,001). Mean concentrations of MGP in group 2 (2082,79±329,75 pg/ml) were significantly higher than group 1 (1853,42±285,82 pg/ml) independent of gender status between the groups (p=0,001). Also in diabetic cases, blood MGP levels were higher than non-diabetic cases (p < 0,05). After this finding, blood MGP levels for non-diabetic cases between group 1 and group 2 were studied and in group 2 blood MGP levels were significantly stil higher than group 1's (p<0,05). This meant blood MGP levels were higher in group 2, independent from diabet status. Mean concentrations of Fetuin-A in group 2 (60,54±28,61 ng/ml) were significantly lower than group 1 (78,61±20,45ng/ml) independent of gender between the groups (p=0,002). Mean concentrations of 25OH-vitamin D were deficient or insufficient in majority of the population (%85 of the population) and were not significantly different between group 1 (20,27±12,65 ng/ml) and group 2 (20,64±7,32 ng/ml) (p>0,05). Also mean concentrations of ADMA were not significantly different between group 1 (0,099±0,053 umol/l) and group 2 (0,089±0,051 umol/l) (p>0,05).
Discussion and Conclusion: As a result of our study MGP and Fetuin-A were determined that these variables may be the markers of obstructive coronary artery disease. After this study we had a hope for approaching to diagnosis of obstructive coronary artery disease with simple blood tests but more studies with higher population are needed for comprehensive determination of these findings.

Coronary artery disease / Acute coronary syndrome

PP-024

Non-O blood groups can be a prognostic marker of in-hospital and long-term major adverse cardiovascular events in patients with STEMI

Mehmet Serkan Çetin, Elif Hande Özcan Çetin, Fazil Arısoy, Kadir Ocak, Emek Ediboğlu, Serkan Topaloğlu, Ahmet Temizhan

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: Recent studies have suggested ABO blood type locus as an inherited predictor of thrombosis, cardiovascular risk factors, myocardial infarction. However, there is scarce data about the impact of non-O blood groups on prognosis in patients with ST-elevation myocardial infarction (STEMI). On the grounds, we aimed to evaluate the prognostic importance of non-O blood groups in patients with STEMI undergoing primary percutaneous coronary intervention (pPCI)
Materials and Method: 1835 consecutive patients who admitted with acute STEMI between 2010 and 2015 were included and followed-up for median 35.6 months.
Results: The prevalence of hyperlipidemia, total cholesterol, LDL, peak CKMB, the prevalence of no-reflow and hospitalization duration were higher in patients with non-O blood groups. Gensini score did not differ between groups. During the in-hospital and long-term follow-up period, MACE, the prevalence of stent thrombosis, non-fatal MI, and mortality were higher in non-O blood groups. In multivariate logistic regression analysis, non-O blood groups were demonstrated as independent predictors of in-hospital (OR: 2.085 %CI: 1.328-3.274 p=0.001) and long term MACE (OR: 2.257 %CI: 1.325-3.759 p<0.001). Kaplan-Meier analysis according to the long-term MACE free survival revealed the higher occurrence of MACE in non-O blood group compared with O blood group (p<0.001, Chi-square: 22.810).
Discussion and Conclusion: Non-O blood groups were determined as significant prognostic indicators of short- and long-term cardiovascular adverse events and mortality in patients with STEMI undergoing pPCI. In conjunction with other prognostic factors, evaluation of this parameter may utilize the risk categorisation and tailoring the individual therapy and follow-up in STEMI patient population.

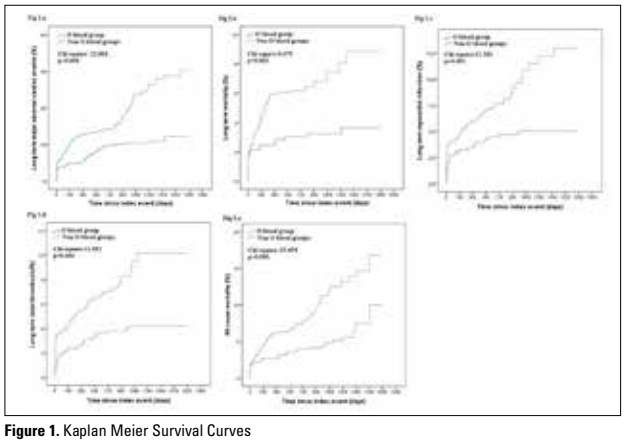


Figure 1. Kaplan Meier Survival Curves

Coronary artery disease / Acute coronary syndrome

PP-025

Thrombophilic state in young patients with first ST-elevation myocardial infarction

Abdullah Doğan[1], Fatih Kahraman[2], İsmail Barkın Işık[2], Mehmet Özaydın[2], Fatih Aksoy[3], Yasin Türker[2], Doğan Erdoğan[2], Ercan Varol[2]

[1]İzmir Katip Çelebi Universty Medical School, İzmir
[2]Süleyman Demirel University Faculty of Medicine, Isparta
[3]Dinar State Hospital, Afyon

Introduction: Although hypercoagulable states are most often associated with venous thromboses, its relation to arterial thromboses is still under debate because of conflicting data. It is unclear whether thrombophilic state may lead to ST-elevation myocardial infarction (STEMI) in young patients. Thus, we investigated the thrombophilic state in STEMI patients aged below 45 years.
Materials and Method: This study included 58 consecutive young patients with first STEMI who were aged ≤45 years and gender- and MI location matched 32 patients with first STEMI aged between 45 and 60 years. Baseline, clinical and epidemiological characteristics, and angiographic data were recorded. Thrombophilic analyses included fibrinogen, D-dimer and homocysteine levels, activities of protein C, protein S, antithrombin-III (AT-III) and activated protein C resistance (APCR) with the factor V Leiden mutation.
Results: Majority of patients were male (95% vs 91%, p=0.66) and had anterior wall MI (48% vs 47%). There were no significant difference in atherosclerosis risk factors including positive family history, diabetes, hypertension, hyperlipidemia and smoking in the two groups. Fibrinogen, D-dimer and uric acid levels were comparable in two groups. There was also no significant difference in AT-III, protein C and protein S levels between two groups. Compared with older STEMI group, APCR (1.46±0.67 vs 1.11±0.37, p=0.04) and homocysteine levels (18.8±12.8 vs 13.6±4.5 µmol/l, p=0.046) were higher in the young STEMI group.
Discussion and Conclusion: Our findings suggest that high levels of APCR and homocysteine may have a causative role in the pathogenesis of STEMI in young patients aged below 45 years. However, a large-scale study is needed for validation of this result in clinical practice.

Cardiac imaging / Echocardiography

PP-026

The evaluation of myocardial functions of patients in the early stage of acute ischemic stroke by using standard and speckle tracking echocardiography

Emrah Ermiş[1], Selami Demirelli[1], Serdar Fırtına[2], Mustafa Ceylan[1], Emrah İpek[1], Ahmet Yalçın[1], Ömer Faruk Bayraktutan[1], Bingül Dilekçi Şahin[1], Ahmet Kızıltunç[3]

[1]Erzurum Regional Training and Research Hospital, Erzurum
[2]Maraşal Çakmak Military Hospital, Erzurum
[3]Erzurum Atatürk University, Erzurum

Introduction: In this study we aimed to evaluate the relationship between myocardial dysfunction and non-hemorrhagic stroke in its early stage. The objective is to show the association of National Institutes of Health stroke scale (NIHSS) score and stroke infarct volume with echocardiographic parameters by using standard and speckle tracking echocardiography (STE).
Materials and Method: The study included 29 patients with acute ischemic stroke (AIS). Patient's NIHSS scores were calculated, stroke localization and stroke infarct volumes were recorded from the cranial diffusion magnetic resonance imaging (MRI). Troponin levels and, if present, ischemic electrocardiographic (ECG) changes at admission were recorded. Within 48 hours of admission, heart rate (HR) and blood pressure (BP) were also measured and cardiac evaluation with standard and STE was performed.
Results: A statistically significant (p=0.011) improvement in NIHSS scores of patients was observed and there was also a slight increase in infarct volumes during the 10th day control (p=0.906). A mild increase was observed in the control ejection fraction (EF) parameter measured by standart echocardiography (53.2% and 55.8%, at admission and on the 10th day, respectively, p = 0.482). Longitudinal global strain (GLS) and global systolic strain rate (GLSrS) values measured by STE showed statistically significant improvement (GLS; p=0.003, GLSrS; p=0.001, respectively).

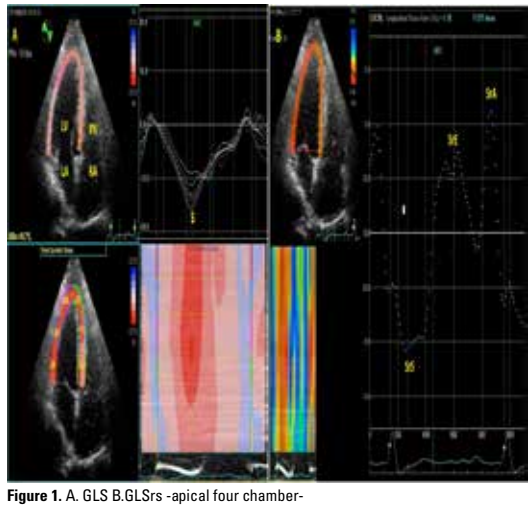


Figure 1. A. GLS B.GLSrs -apical four chamber-

Discussion and Conclusion: During the early stages of AIS, the EF of patients increased slightly without reaching statistical significance, however, GLS and GLSrS values evaluated by STE showed significant improvement. As a result, we can conclude that strain values measured by STE, a new and sensitive method compared to the standard echocardiography, can demonstrate the improvement in systolic functions.

Table 1. Standard and STE parameters

Parameters	Basale Mean±SD	10th day Mean±SD	*P*-value
GLS %	-16.41±1.24	-18.76±1.96	**0.003**
GLSrS 1/sec	-0.85±0.08	-1.14±0.16	**0.001**

Cardiac imaging / Echocardiography

PP-027

Factors affecting the change in agatson score in patients evaluated by consequtive multislice coronary CT angiographies

Mustafa Aytek Şimşek[1], Ayça Türer[1], Olcay Özveren[1], Zekeriya Küçükdurmaz[1], Yusuf Sinan Aydın[2], Muzaffer Murat Değertekin[1]

[1]Yeditepe University Faculty of Medicine, İstanbul
[2]Fatih Sultan Mehmet Training and Research Hospital, İstanbul

Introduction: Multislice coronary CT angiography is a well established and widely utilized non invasive diagnostic tool in patients with intermediate risk for coronary artery disease. In our study we aimed to define factors affecting the change in Agatson score in a population evaluated by consequtive multislice coronary CT angiographies.
Materials and Method: 440 patients who had multislice coronary CT angiography evaluation more than once in at least 12 month period were screened. 14 patients were excluded due to lack of demographical data, 300 patients with coronary stent or coronary artery by pass surgery were excluded due to inability of Agatson score calculation. Data of 126 patients were included in the analysis. Demographical data (age, gender), cardiovascular risk factors (hypertension, diabetes, hyperlipidemia, cigarette smoking and family history of premature cardiovascular disease); initial, final and change in Agatson scores of all patients were recorded. Statistical analysis was performed. For all results, p values below 0,05 were considered significant.
Results: Mean age was 53.21±10.82. 103 patients were male (81.7%), 57 patients (45.2%) had hypertension, 63 patients (50%) had hyperlipidemia, 24 patients (19%) had diabetes, 53 patients (42,1%) were smokers and 52 patients (42.1%9 had family history of premature cardiovascular disease. Mean period between coronary CT angiographies was 39.39±18.42 months. Mean initial and final Agatson scores were 76.21±215.26 and 133.21±331.62 respectively. Mean change in initial and final Agatson scores was 63.20±148.68. 63 patients (50%) had zero initial Agatson score. Hypertension, diabetes and age were significantly correlated with initial Agatson score (p:0.01; p:0.08; p:0.00 respectively), final Agatson score (p:0.01; p:0.09; p:0.00 respectively) and change in Agatson score (p:0.01; p:0.018; p:0.019 respectively). Hyperlipidemia was significantly related with initial Agatson score (p:0.039). Multivariate analysis revealed that age and male gender were independently correlated with initial Agatson score (p:0.038 and p:0.00 respectively, CI: 0.95) final Agatson score (p:0.00 and p:0.007 respectively CI: 0.95) and change in Agatson score (p:0.01 and p:0.03 respectively, CI: 0.95).
Discussion and Conclusion: In this study we demonstrated the relationship between classical cardiovascular risk factors, demographical features and Agatson score in a population with consequtive coronary CT angiography evaluations. Our study signifies the importance of overall cardiovascular risk profile and relationship of its components. Lack of survival and cardiovascular outcome data and data concerning the effect of treatment on Agatson score were limitations of our study.

Cardiac imaging / Echocardiography

PP-028

Subclinical LV systolic dysfunction in patients with chronic obstructive pulmonary disease

Betül Cengiz Elçioğlu[1], Sadettin Kamat[2], Selen Yurdakul[3], Şükrü Taylan Şahin[3], Altemur Sarper[1], Pınar Yıldız[2], Saide Aytekin[1]

[1]Florence Nightingale Hospital, İstanbul
[2]Yedikule Thoracic Diseases and Surgery, Education and Research Hospital, İstanbul
[3]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul

Introduction: Patients with chronic obstructive pulmonary disease (COPD) can have left ventricular (LV) systolic dysfunction due to several reasons. We investigated subclinical LV systolic dysfunction in patients with COPD, and its correlation with the severity of airway obstruction, identified by GOLD classification
Materials and Method: We studied 52 patients with COPD and 29 age and sex-matched controls, without any cardiac disease and with preserved LV EF. Conventional echocardiography and speckle tracking echocardiography(STE) based strain imaging were performed to analyze sub-clinical LV systolic function. All patients underwent spirometry.
Results: Conventional echocardiographic measurements (LV end diastolic diameter, LV end systolic diameter, LV EF) were similar between the groups. LV longitudinal peak systolic strain (14.76±2.69% to 20.27±1.41%, p=0.0001) and strain rate (0.75±0.25 1/s to 1.31±0.41 1/s, p=0.0001) were significantly impaired in patients, compared to controls, demonstrating sub-clinical ventricular systolic dysfunction. Significant positive correlation was obtained between LV strain/strain rate and spirometry parameters (FEV 1, FEV%, FEV 1/ FVC, PEF %) (r=0.78/0,68, p=0.0001; r=0,83/0.70, p=0.0001); r=0.74/0.55, p=0.0001; r=0.72/0.65, p=0.0001, respectively). Also there was significant negative correlation between LV strain/strain rate and GOLD classification (r=-0.80/ -0.69, p=0.0001, respectively).
Discussion and Conclusion: COPD can effect systolic functions in patients without known CAD. STE is a technique which provides additional information for detailed evaluation of subtle changes in LV myocardial contractility, significantly associated with the severity of the disease in COPD patients.

Cardiac imaging / Echocardiography

PP-029

The association between the serum ferritin level, tissue Doppler echocardiography, and cardiac T2* MRI in patients with beta thalassemia major

İsa Öner Yüksel[1], Erkan Köklü[1], Erdal Kurtoğlu[1], Şakir Arslan[1], Göksel Çağırcı[1], Volkan Karakuş[2], Görkem Kuş[1], Selçuk Küçükseymen[1]

[1]Antalya Education and Research Hospital, Antalya
[2]Muğla Sıtkı Koçman Faculty of Medicine, Muğla

Introduction: Iron-mediated cardiomyopathy is the major complication of beta thalassemia major (TM); therefore, early diagnosis, risk stratification, and treatment of beta TM patients are clinically important. The aim of this study was to determine the association between the serum ferritin level, tissue Doppler imaging (TDI) echocardiography, cardiac magnetic resonance T2* (CMR T2*), and heart rate recovery (HRR) in patients with beta TM.
Materials and Method: The study included 57 beta TM patients with a mean age of 25±7 years. The serum ferritin level, conventional and TDI echocardiography, HRR, and CMR T2* were determined in all patients. CMR T2* findings were categorized as normal myocardium (T2* >20 ms), and myocardial involvement (T2* ≤20 ms). HRR values at 1-5 min (HRR1-5) were recorded. HRR was calculated by subtracting the heart rate at each time point from the heart rate at peak exercise.
Results: Based on CMR T2*, abnormal myocardial iron load (T2* ≤20 ms) was observed in 35% of the patients; all patients with mean T2* was 27.5±13.8 ms. There was a significant negative correlation between the serum ferritin level and the cardiac T2* MRI findings (r=–0.343, p=0.009) (Table 1). A similar result was found in the negative correlation between serum ferritin and all heart rate recovery values. There was a significant positive correlation between HRR1, HRR2, and HRR3 values, and CMR T2* (T2* HRR1: r=0.512, p=0.0001; T2* HRR2: r = 0.484, p=0.0001; T2* HRR3: r = 0.474, p=0.0001 respectively) (Figure 1).
Discussion and Conclusion: The serum ferritin level and tissue TDI can be used to predict the presence of myocardial iron load in beta TM patients. Moreover, HRR can also aid prediction of the presence of myocardial iron load in these patients; therefore, HRR can be used to screen beta TM patients. Additional research is needed to further delineate the correlation between HRR and CMR T2*, as well as the clinical use of HRR as a predictive marker in beta TM patients.

Table 1. Serum ferritin levels according to T2*MRI findings

Ferritin level (ng/mL)	<1000	1000-2000	>2000	Total
Normal T2* MRI	16 (43.2%)	8 (21.7%)	13 (35.1%)	37 (100%)
Abnormal T2* MRI	2 (10%)	2 (10%)	16 (80%)	20 (100%)
Total	18	10	29	57

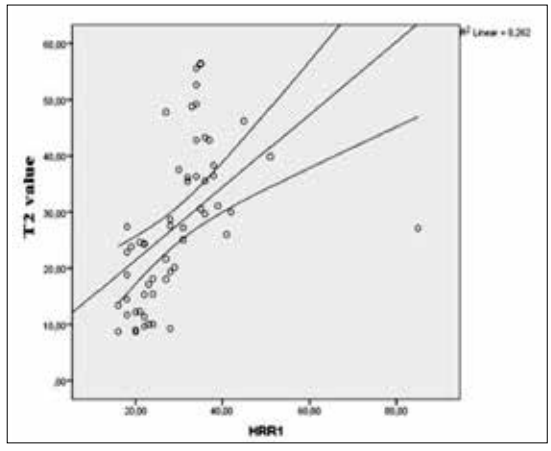


Figure 1. The correlation between cardiac T2* and HRR1

Cardiac imaging / Echocardiography

PP-30

Treatment effect on cardiac function in patients with acromegaly

Evrim Şimşek[1], Banu Şarer Yürekli[1], Nilüfer Özdemir Kutbay[1], Şefa Ökten[2], Ilgın Yıldırım Şimşir[1], Füsun Saygılı[1], Hatice Soner Kemal[1], Cahide Soydaş Çınar[1], Cemil Gürgün[1]

[1]Ege University Faculty of Medicine, İzmir
[2]Yüksekova State Hospital, Hakkari

Introduction: Cardiovascular mortality and morbidity is increased in patients with acromegaly. Besides the increase in known cardiovascular risk factors, chronic GH and IGF-1 exposure has been shown to cause cardiomyopathy. There are limited numbers of studies showing subclinical cardiac effects of acromegaly and treatment effect on cardiac functions in acromegaly patients with normal left ventricular ejection fraction (LVEF). There are no echocardiography and myocardial deformation studies to determine subclinical cardiac effects of treatment.
Materials and Method: Nineteen patients with disease under control with drug treatment or operation

(Group I) and 29 patients with uncontrolled disease (Group II) who were all being followed by Ege University Faculty of Medicine endocrinology clinic were included. Thirty healthy subjects without known disease served as control group (Group III). A single cardiologist performed off-line analysis of myocardial deformation -strain and strain rate- after echocardiographic records were obtained in line with the recommendations of the guidelines.
Results: There was no difference in age, gender and body surface area (BSA) between 48 patients with acromegaly and 30 healthy subjects, while BSA was higher in patients with uncontrolled disease. None of the patients had symptomatic heart failure. LVEF was 67.2%, 62.7% and 58.3% in healthy subjects (group III), group I and II, respectively and the differences were statistically significant (p<0.001). In group I, 26% of patients had increased LV mass and 34.5% in group II, when corrected to BSA (p<0.001). In group I and II, concentric remodelling was mostly observed (68.4%, 58.6%, respectively) and 34.5% of patients in group II had concentric hypertrophy. Global longitudinal strain and strain rate values were -20.66%, -1.16 in Group I, -16.96%, -0.96 in group II and -19.1%, -1.007 in group III. Group II patients with uncontrolled disease had the worst strain and strain rate values (Group II vs. group I strain p<0.001, group II vs. group III strain p=0.008). Strain and strain rate values of group I patients with disease under control were similar to normal subjects.
Discussion and Conclusion: Our study is the first study to evaluate the effects of treatment on myocardial deformation in acromegaly patients. There was a decrease in myocardial deformation parameters, which can be regarded as subclinical cardiomyopathy in patients with acromegaly when compared to healthy subjects. Improvement in deformation parameters is achieved with treatment and similar values to healthy subjects can be reached.

Cardiac imaging / Echocardiography

PP-031

The association between pulmonary artery stiffness and left ventricle diastolic dysfunction and aortic stiffness in obstructive sleep apnea syndrome

İbrahim Halil Altıparmak[1], Muslihittin Emre Erkuş[1], Mustafa Polat[2], Zafer Hasan Sak[1], Funda Yalçın[1], Özgür Günebakmaz[1], Yusuf Sezen[1], Zekeriya Kaya[1], Recep Demirbağ[1]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Gaziantep Şehitkamil State Hospital, Gaziantep

Introduction: Obstructive sleep apnea syndrome (OSAS) is a common clinical condition characterized with intermittent apnea and hypoxia, oxidative stress, and systemic inflammation. The syndrome affects both pulmonary vascular bed and cardiovascular system including heart functions. We aimed to investigate the association between pulmonary artery stiffness and left ventricle diastolic dysfunction and aortic stiffness in non-diabetic and non-hypertensive patients with moderate or severe OSAS.
Materials and Method: Study participants consisted of the patients who underwent polysomnography at the sleep laboratory and of whom the diagnosis of OSAS was established. Patients with OSAS were categorized according to apnea hypopnea index (AHI, event/hour) as follows: normal with AHI 15. A total of 66 non-diabetic, non-hypertensive and non-smoker volunteers were enrolled in this study. OSAS group consisted of 31 participants with moderate and severe OSAS; also control group consisted of 35 healthy subjects without OSAS. Echocardiographic assessment was performed in all participants, and pulmonary artery stiffness (PAS) was calculated by the formula; PAS (kHz/s) =maximal frequency shift/acceleration time.
Results: Both groups were similar with regard to the clinical and demographic variables (all of p>0.05). Left ventricle ejection fraction, diastolic and systolic diameters and wall thickness were similar in two groups (all of p>0.05). Mitral E/A, deceleration time of E wave and Tissue Doppler E'/A' in OSAS group were significantly lower than control (0.9±0.2 vs 1.3±0.3, 132±28 vs 155±26, and 0.9±0.3 vs 1.6±0.6, respectively, all of p<0.001). E/E' ratio, left atrial volume and PAS in OSAS group were significantly higher than control group (6.9±2.7 vs 5.4±2.1, 32±8 vs 26±6, all of p<0.01). While aortic stiffness index considerably increased in OSAS group (12.2±5.0 vs 3.6±1.1, p<0.001), aortic distensibility and aortic strain significantly decreased in OSAS group compared with control.
Discussion and Conclusion: Increased PAS may be an indicator for left ventricular diastolic dysfunction and aortic stiffness in non-diabetic and non-hypertensive patients with moderate or severe OSAS.

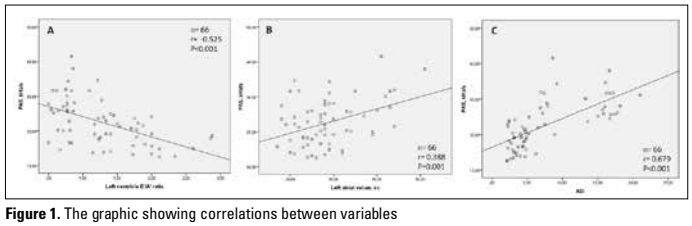


Figure 1. The graphic showing correlations between variables

Cardiac imaging / Echocardiography

PP-032

Epicardial adipose tissue thickness can be used to predict major adverse cardiac events

Aslı Tanındı, Aycan Fahri Erkan, Berkay Ekici

Ufuk University Faculty of Medicine, Ankara

Introduction: Increase in epicardial adipose tissue (EAT) thickness is associated with subclinical and manifest coronary artery disease. In addition, it is associated with the severity and extent of coronary atherosclerosis. We aimed to investigate if increased EAT thickness is associated with adverse cardiovascular outcomes.
Materials and Method: Two hundred consecutive patients who were admitted with stable angina pectoris, unstable angina pectoris or acute myocardial infarction (MI), and had undergone coronary angiography were included and followed for revascularization, non-fatal MI, hospitalization for heart failure, and cardiovascular death for 26 (5-30) months.
Results: There were significantly more revascularisations, non-fatal MI, and cardiovascular death in patients with an initial EAT thickness >7 mm (p<0.001 for all). Significant predictors of cardiovascular death were identified as an EAT thickness >7 mm (HR: 1.9 95% CI: 0.4-8.3 p:0.039), and diabetes (HR: 3.42 95% CI: 0.7-17.5 p:0.014) in the multivariate Cox regression analysis. Event-free survival for cardiovascular death in EAT ≤7 mm group was 97.9%, whereas it was 90.7% in EAT >7 mm group (p:0.021). In addition, significant predictors of MI were identified as an EAT thickness >7 mm (HR: 2.4 95% CI: 0.6-10.0 p:0.021) and diabetes (HR: 3.4 95% CI: 1.0-11.2 p:0.04). Event-free survival for MI in EAT ≤7 mm group was 96.4%, whereas it was 68.2% in EAT >7 mm group (p:0.001).
Discussion and Conclusion: Increase in EAT thickness independently predicts adverse cardiac events including MI and cardiovascular death.

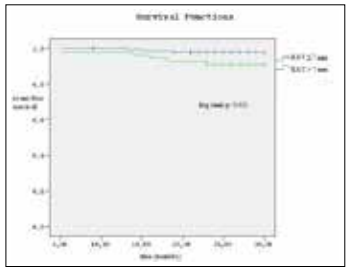


Figure 1. Kaplan-Meier curve for cardiovascular death

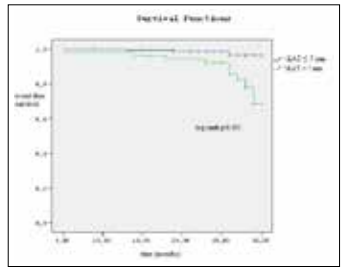


Figure 2. Kaplan-Meier curve for myocardial infarction

Cardiac imaging / Echocardiography

PP-033

Evaluation of trastuzumab-induced early cardiotoxicity using two-dimensional strain echocardiography

Sadık Volkan Emren[1], Selcen Tülüce[2], Fatih Levent[2], Yaşar Yıldız[2], Ahmet Alacacıoğlu[2], Toygar Kalkan[2], Yüksel Küçükzeybek[2], Kamil Tülüce[3]

[1]Afyonkarahisar State Hospital, Afyonkarahisar
[2]İzmir KÇÜ Atatürk Training and Research Hospital, İzmir
[3]İzmir Karşıyaka State Hospital, İzmir

Introduction: Trastuzumab is a chemotherapeutic agent used in the treatment of breast cancer. Trastuzumab therapy has been shown to induce cardiotoxicity during the three to six month period as evidenced by strain echocardiographic examination without any change occurring in the ejection fraction. The present study evaluated the presence of cardiotoxicity using strain echocardiography 1 day and 7 days after the initiation of trastuzumab therapy.
Materials and Method: The patients with breast cancer receiving adjuvant trastuzumab therapy underwent 2-dimensional, tissue Doppler, and strain echocardiographic examination at baseline and 1 day and 7 days after the therapy for the calculation of left ventricular global longitudinal strain (GLS), global circumferential strain (GCS), strain ratio, and other echocardiographic parameters.
Results: A total of 40 patients were evaluated in the study. All patients were females and the mean age was 50±10 years. Of these patients, 97% received anthracycline and 73% received radiotherapy before the initiation of trastuzumab therapy. No change was observed in any of the echocardiographic parameters 1 day after the initiation of trastuzumab therapy (p>0.05). The ejection fraction, tissue Doppler parameters, and GCS values did not show any changes 7 days after the initiation of therapy, whereas significant decreases were observed in GLS value (19.2±4.0% vs. 17.2±3.4; p=0.001) and systolic annular velocity of the lateral left ventricular wall (S' velocity) (10.5±3.2 vs. 8.6±2.2; p=0.002).
Discussion and Conclusion: Trastuzumab therapy is associated with cardiotoxicity as early as 7 days after initiation of the therapy as evidenced by the decreases in left ventricular GLS value and systolic annular velocity of the lateral left ventricular wall.

Cardiac imaging / Echocardiography

PP-034

Assessment of cardiovascular function by flow mediated dilatation and carotid intima media thickness in patients with ankylosing spondylitis

Gül İlayda Berk Bozdoğan, Ayhan Usal, Ali Deniz,Eren Erken, Fatih Yıldız, Mesut Demir

Çukurova University, Faculty of Medicine, Adana

Introduction: The aim of this study was to evaluate the vascular endotelial function and the cardiovascular risk by measurement of flow mediated dilatation, carotid intima media thickness (İMT) and echocardiographic parametres in patients with ankylosing spondylitis (AS) and healthy controls.
Materials and Method: Fifty five AS patients and 36 healthy controls were included in this study. Serum glucose levels, acute phase proteins and lipids were studied. Electrocardiography and echocardiography was performed for AS patiens and healthy controls. Brachial artery flow mediated dilatation (FMD) and carotid IMT assessment were performed ultrasonographically.
Results: The average age was 43±12,0 years (average = 43, min. = 18, max. = 80). Age and sex distribution did not show a statistically significant difference between the AS and control groups. The mean disease duration of patients was 7 (range 1-28) years. Acute phase proteins (sedimentasyon rate and C-Reaktif Protein)

were significantly higher in the patients group. Corrected QT duration (cQT) were significantly higher in the patients group (369,7±29,9 msn vs 386,2±27,7 msn; p=0,012). End diastolic and end sistolic echocardiography mesurements were significantly higher in the patients group. Left ventricular diastolic dysfunction was significantly higher in the patients group. Mitral valve dysfunction was 5,7% in healthy controls and 29% in AS patients (p=0,006). Endothelium dependent FMD was significantly lower in the AS patients (3,47±0,49 vs 3,99±0,73 mm; p=0,0001). Averaged IMT measurements was lower in control groups.

Discussion and Conclusion: This study demonstrates impairment of endothelial function and early atherosklerosis development in AS.

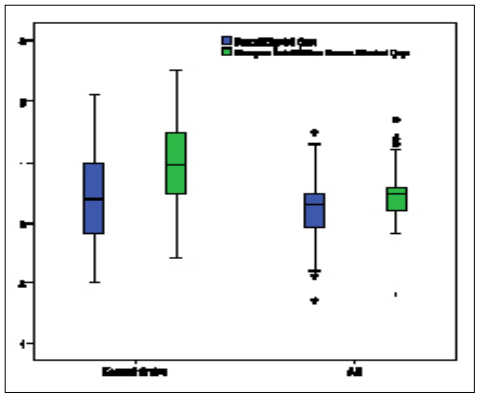


Figure 1. Flow mediated dilatation. FMD was significantly lower in AS patients

Cardiac imaging / Echocardiography

PP-35

The effectiveness of ultrasound probe guided compression technique in the treatment of femoral artery pseudoaneurysm

Hamidullah Haqmal[1], Cengiz Öztürk[1], Şevket Balta[1], Mustafa Demir[1], Ali Osman Yıldırım[1], Mustafa Aparcı[2], Turgay Çelik[1], Atila İyisoy[1]

[1]Gülhane Military Medical Academy (GMMA) Ankara, Ankara
[2]Kasımpaşa Military Hospital, İstanbul

Introduction: High incidence of femoral pseudoaneurysms related to increasing use of percutaneous interventional cardiac and peripheral arterial procedures. Surgical approach are usually performed in treatment of pseudoaneurysms. There are increased mortality or morbidity because of complications such as local compression, distal embolization, bleeding, arterial occlusion and infection. These complications may threat the patient life.We aimed to investigate the effectiveness of color Doppler echo probe guided compression for treatment of femoral artery pseudoaneurysm after percutaneous transluminal angioplasty.

Materials and Method: The study population was consisted of 13 (8 male and 5 female, mean age: 67±8 years) consecutive patients who had femoral pseudoaneurysms related the percutaneous interventional cardiac and peripheral arterial procedures. We used the color Doppler echocardiography device (Philips 5S) for diagnosis and treatment. Mean color Doppler echo guided compression time was 37.9±10.9 minute (7 patients: 30 min, 4 patients: 40 min and 2 patients: 60 min).

Results: All pseudoaneurysms were treated successfully by color Doppler echo guided compression without complication (femoral artery compression, lower side ischemia and another). Success rate was in 10 patients 76.9%. Unsuccess rate was in 3 patients 23.1%. The failures of the treatment were related with using of anticoagulation therapy and using the large size catheters. The failured cases underwent repeat compression procedure after 24 hour and were treated successfully without any complication. After one and two weeks any pseudoaneurysms were not shown (Figure 1, 2).

Discussion and Conclusion: The color Doppler guided compression therapy is effective and related with minimal complication rates. It may be considered as an initial step in the management of femoral pseudoaneurysms.

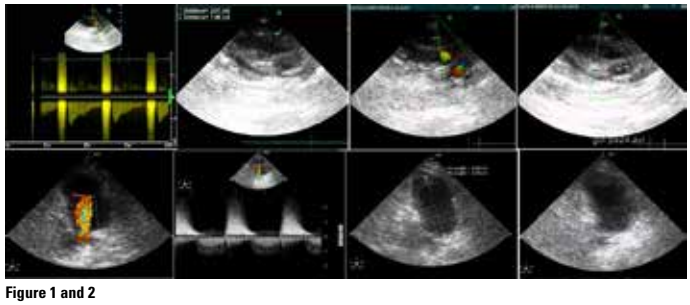


Figure 1 and 2

Table 1.

Parameters	Mean/SD
Age	67±7.9
Pseudoaneurysm diameter	34.4±4.3
Neck diameter	1.9±0.28
Compression time	39.2±10.37
Demographics	n/%
Gender M/F	8 (61.5)/ 5(38.5)
PTCA procedures	11 (84.6)
Catheter diameters 6-7F	11 (84.6)
Catheter >7F	2 (15.4)
Success rate	10 (76.9)
Coronary artery disease	13 (100)
Hypertension	10 (76.9)
Diabetes	6 (46.2)
Hyperlipidemia	10 (76.9)
Obesity	2 (15.4)
Aspirin use	13 (100)
Clopidogrel use	9 (69.2)
ACE/ARB use	13 (100)
Heparin use	13 (100)
Satatin use	13 (100)

Interventional Cardiology / Coronary

PP-036

Is galectin-3 a biomarker, a player or both in the presence of coronary atherosclerosis?

Gökhan Aksan[1], Ömer Gedikli[2], Kudret Keskin[1], Gökay Nar[3], Sinan İnci[4], Rukiye Nar[3], Süleyman Sezai Yıldız[1], Özgür Kaplan[5], Kadriye Orta Kılıçkesmez[1], Korhan Soylu[2], Mahmut Şahin[2]

[1]Şişli Etfal Training and Research Hospital, İstanbul
[2]Ondokuz Mayıs University, Samsun
[3]Ahi Evran University Research and Education Hospital, Kırşehir
[4]Aksaray State Hospital, Aksaray
[5]Florence Nightingale Hospital, İstanbul

Introduction: Atherosclerosis is complex inflammatory process which involves leukocytes, macrophages and various biomarkers. Galectine-3 is secreted from activated macrophages and has roles in cardiac fibrosis, remodelling and inflammation. In our study, we investigated the role of galectine-3 in both the presence and the severity of coronary artery disease (CAD)

Materials and Method: We enrolled 82 patients with CAD confirmed by coronary angiography and 82 healthy subjects as control group. Angiography CAD was defined as ≥ 50% luminal diameter stenosis of at least one major epicardial coronary artery. The severity of CAD was determined by the Gensini score. Serum Galactine-3 levels were studied by linked immuno sorbent assay (ELISA) method.

Results: Serum galetine-3 levels were significantly higher in the CAD group then control group (12.96±4.92 vs 5.52±1.9 ng/ml, p=0.001). In correlation analysis, serum galectine 3 levels had a significant positive correlation with the gensini score (r=0,715, p=0,001), number of diseased vessels (r=0,752, p=0,001) and serum hs-CRP levels (r=0,607, p=0,001). In addition, multivariate logistic regression analysis demonstrated that serum galectin-3 levels were significant and independent predictor for predicting the presence of angiographic CAD (OR = 3.933, %95 CI:2.395-6.457; p=0.001).

Discussion and Conclusion: In our study, we demonstrated that in patients with CAD had a higher serum galectin-3 levels than patients without CAD. Also serum galectine-3 levels showed a significant positive correlation with CAD severity. High serum galectine-3 levels may be an important predictor and possibly have a major role in the atherosclerotic inflammation process.

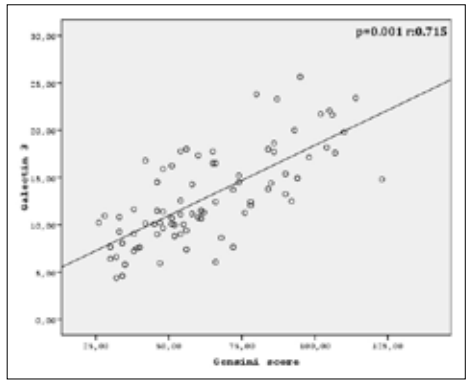


Figure 1. Correlation between galectin-3 and Gensini score

Table 1. Galectin-3 levels in number of diseased vessels

Number of vessel disease	Galectin-3	p value
Control	5,54±1,97	
One vessel disease	9,48±2,96	0,001**
Two vessel disease	13,74±3,13	
Three vessel disease	19,94±3,32	
Kruskal Wallis Test	***p<0.01*	

Interventional Cardiology / Coronary

PP-037

Comparision of the framingham and score models in predicting the presence and severity of coronary artery disease considering syntax score

Zeki Yüksel Günaydın[1], Ahmet Karagöz[2], Osman Bektaş[1], Ahmet Kaya[1], Tuncay Kırış[3]

[1]Ordu University Faculty of Medicine, Ordu
[2]Giresun University Faculty of Medicine, Giresun
[3]Ordu State Hospital, Ordu

Introduction: Although various risk stratification models are available and currently being used, the performance of these models in different populations is still controversial. We aimed to investigate the relation between Framingham and SCORE models and presence and severity of coronary artery disease which is detected using SYNTAX score.
Materials and Method: The study population consisted of 227 patients. The patients were classified into low- and high-risk groups in Framingham and SCORE models separately. Following coronary angiography, the patients were classified into SYNTAX=0 (SYNTAX score 0), low-SYNTAX (SYNTAX score 1-22) and high-SYNTAX (SYNTAX score>22) groups. The relation between the risk models and SYNTAX score was evaluated by SPSS 20.0
Results: Both Framingham and SCORE models were found to be effective in predicting presence of coronary artery disease and none of the two models had superiority on each other [AUC=0.819 (0.767, 0.871) vs 0.811 (0757, 0.861), p=0.881]. Furthermore both models were also effective in predicting extent and severity of coronary artery disease. [AUC=0.724 (0.656, 0.798) vs 0.730 (0.662, 0.802), p=0.224]. When subgroups were analyzed, the SCORE model was found to be better in predicting coronary artery disease extent and severity in subgroups of men and diabetics. ([AUC = 0.737 (0.668, 0.844) vs 0.665 (0.560, 0.790), p=0.019], [AUC = 0.733 (0.684, 0.798) vs 0.680 (0.654, 0.750) p=0.029] respectively.
Discussion and Conclusion: In addition to their role in predicting cardiovascular events, the use of Framingham and SCORE may also have utility for prediction of extent and severity of coronary artery disease. SCORE risk model has a slightly better performance than Framingham risk model.

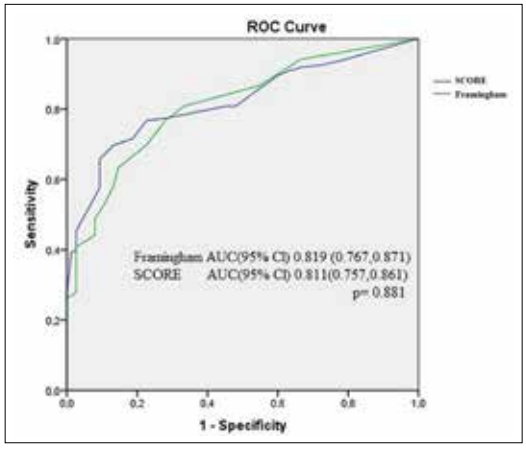


Figure 1. Receiver-operating characteristic (ROC)

Interventional Cardiology / Coronary

PP-038

CHA(2)DS(2)-VASc score in the prediction of stent thrombosis

Sefa Ünal, Burak Açar, Meryem Kara, Mustafa Mücahit Balcı, Orhan Maden, Şenay Funda Dereağzı

Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: We sought to investigate the relationship between the CHA_2DS_2-VASc score and acute stent thrombosis. The relationship between the CHA_2DS_2-VASc and acute stent thrombosis is undetermined.
Materials and Method: This observational retrospective study was conducted at Ankara Yuksek ihtisas Heart-Research and Education hospital. Between January 2013 and December 2013, 1371 patient underwent percutaneous coronary procedure, enrolled this study. Patients were divided into two groups according to the presence of stent thrombosis. CHA_2DS_2-VASc scores were calculated and patients were divided into two groups according to CHA_2DS_2-VASc score (score ≤2, score >2).
Results: This study included 1371 patients (age 60.5±12.9, 848 men). There were 38 stent thrombosis totaly. (%2.7). The avarage CHA_2DS_2-VASc score was 3.79 in stent thrombosis (+) patients group, 2.16 in stent thrombosis(-) patients groups. This difference was statistically significant (p<0.0001). The higher the score was found to increase the rate of stent thrombosis. 7/1004 (%0.7) and 31/367 (%8.4) ST was found in CHA_2DS_2-VASc score ≤2 and score >2 groups. ST were significantly greater in the high score group (p<0.00001). By multivariable analysis, the CHA_2DS_2-VASc score was an independent predictor for acute stent thrombosis (p=0.001).
Discussion and Conclusion: This results suggested that CHA_2DS_2-VASc score is useful independent predictor of stent thrombosis. Identifying of high risk patients would provide reduction in ST rates. The score was developed for atrial fibrillation, however, it can be used for risk stratification and stent thrombosis prediction in percutanous coronary interventions by simple calculation from medical history.

Table 1. Multivariable analyses. CHA_2DS_2-VASc score was an independent predictor

	Multivariable analyses		
	HR	CI	P
DM	2,678	1,032-6,953	0,043
HT	7,368	1,860-29,183	0,004
SVA	9,918	1,437-68-443	0,020
LVEF	0,901	0,818-0,992	0,034
Clopidogrel time	16,07	5,330-48,463	<0,001
Stent type(DES)	4,859	1,496-15,785	0,009
$CHA_2DS_2VAS_C$ score>2	16,20	3,079-85,23	0,001

Table 2. CHA_2DS_2-VASc Score Groups. ST were greater in the high score group

	CHA_2DS_2-VASc ≤ 2 (N=1004)	CHA_2DS_2-VASc >2 (N=367)	P-value
ST +	7/1004 (0.7)	31/367 (8.4)	<0.00001
ST –	997/1004 (99.3)	336/367 (91.6)	<0.00001

Interventional Cardiology / Coronary

PP-039

Troponin elevation without clinical and procedural signs suggestive of myocardial necrosis following percutaneous coronary intervention

Ali Buturak[1], Aleks Değirmencioğlu[1], Özgür Sürgit[2], Tuncay Kiriş[3], Selçuk Yazıcı[4], Hüseyin Karakurt[2], Ali Rıza Demir[2], Şevket Görgülü[1]

[1]Acıbadem University Faculty of Medicine, İstanbul
[2]Mehmet Akif Ersoy Chest and Cardiovascular Surgery Education and Research Hospital, İstanbul
[3]İzmir KÇÜ Atatürk Training and Research Hospital, İzmir
[4]Siyami Ersek Thorax Heart And Vascular Surgery Education And Research Hospital, İstanbul

Introduction: The new definition of periprocedural myocardial infarction (type 4a MI) excludes patients without angina and electrocardiographic or echocardiographic changes suggestive of myocardial ischemia even though significant serum troponin elevation occurs following percutaneous coronary intervention (PCI). We aimed to evaluate the incidence and predictors of post-PCI cardiac biomarker elevations without any clinical, electrocardiographic or echocardiographic changes by using a high-sensitive troponin assay (hsTnT).
Materials and Method: 304 patients (mean age 60.8±8.8years, 204 male) undergoing elective PCI were enrolled. Patients with periprocedural angina, electrocardiographic or echocardiographic sign indicating myocardial ischemia and a visible periprocedural complication such as dissection or side branch occlusion were excluded. Mild-moderate periprocedural myocardial injury (PMI) and severe PMI were defined as post PCI elevation of hsTnT (12 hours later) between 14-70 ng/ L and >70 ng/L, respectively.
Results: Median preprocedural serum hsTnT concentration was 8.0 ng/L [interquartile range (IQR): 5.6-11.5 ng/L]. Serum hsTnT concentration elevated (p<0.001) to 18.9 ng/L (IQR: 11.0-36.8 ng/L) 12 hours after PCI. Mild-moderate PMI and severe PMI were detected in 61.5% and 12.2% of patients, respectively. Postprocedural hsTnT levels were significantly higher in multivessel PCI, overlapping stenting, predilatation and postdilatation subgroups. In addition, postprocedural hsTnT levels were correlated (r=0.340; p<0.001) to the stent lengths.
Discussion and Conclusion: High sensitive troponin measurements indicate a high incidence of periprocedural myocardial necrosis even though no clinical and procedural sign suggestive of myocardial injury exist. Multivessel PCI, overlapping stenting, predilatation, postdilatation and longer stent length are associated with periprocedural myocardial injury following elective PCI.

Interventional Cardiology / Coronary

PP-040

Friendly fire! Aspiration thrombectomy in ST elevation MI

İbrahim Faruk Aktürk[1], Çetin Sarıkamış[1], İsmail Bıyık[2], Fatih Uzun[1], Ömer Çelik[1], Ahmet Arif Yalçın[1], Derya Öztürk[1], Ahmet Ayaz[3], Ömer Taşbulak[1], Hüseyin Karakurt[4]

[1]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[2]Uşak State Hospital, Uşak
[3]Van Training and Research Hospital, Van
[4]İstanbul Training and Research Hospital, İstanbul

Introduction: The manual thrombectomy catheters have been developed to prevent distal embolization in coronary circulation. Nevertheless many randomized trials have shown conflicting results in terms of myocardial reperfusion during primary PCI. The aim of this study was to investigate the use of upfront manual thrombectomy versus PCI alone to the angiographically visible distal embolization (AVDE) and procedural predictors of microvascular perfusion.
Materials and Method: Six hundred thirty six consecutive patients undergoing primary PCI were included in the study between January 2010 and December 2012. Patients were divided into two groups; PCI only group(465 patients) and upfront manual thrombectomy plus PCI (171 patients).
Results: The primary endpoint was the detection of AVDE. Secondary endpoints included post PCI myocar-

dial blush grade,TIMI grade in the infarct related artery, in-hospital LVEF and mid term mortality. Younger age (OR: 0.97 p:0.016), presence of LAD disease (OR: 3.67 p:0.0001) were independent predictors of catheter aspiration use. Paradoxically the use of upfront manual thrombectomy was associated with a higher AVDE (13.55% vs 26.9% p:0.0001), lower TIMI frame rate (2.49±0.86 vs 2.79±0.57 p:0.0001, lower myocardial blush grade (2.31±0.87 vs 2.47±0.7 p:0.016), lower EF (49.9±8.5 vs 46.1±9.6 p:0.0001) and higher maximal troponin release (15.7±16 vs 9.4±11 p:0.0001). No difference was observed in terms of mortality in follow-up (5.2% 677±260 days vs 9.03% 734±353 days p:0.12).

Discussion and Conclusion: Manual thrombus aspiration before primary PCI is associated with higher risk of distal embolization, lower TIMI frame count in the infarct related artery, lower myocardial blush grade, higher peak troponin release and lower LVEF. The study suggests a possible deleterious effect of manual thrombectomy and does not support its use in unselected primary PCI patients.

Interventional Cardiology / Coronary

PP-041

Association of monocyte count/high density lipoprotein ratio with syntax scores in patients with stable coronary artery disease

Harun Kundi, Emrullah Kızıltunç, Mustafa Çetin, Hülya Çiçekçioğlu, Zehra Güven Çetin, Ender Örnek

Ankara Numune Training and Research Hospital, Ankara

Introduction: The aim of this study was to investigate the relationship between monocyte count/ high density lipoprotein ratio (MHR) and severity of coronary atherosclerosis as assessed by the Syntax score (SXscore) in patients with stable coronary artery disease (CAD) who underwent coronary angiography.

Materials and Method: A total of 428 patients with stable CAD who underwent coronary angiography were included in the study between March 2012 and February 2015. The SXscore was determined with baseline coronary angiography. A SXscore ≥23 was regarded as severe CAD, by definition, and the patients were divided into two groups as the ones with low SXscores (<23) and the ones with high SXscores (≥23).

Results: MHR and C-reactive protein was significantly higher in patients with high SXscores (p<0.001, p<0.001, respectively). Left ventricular ejection fraction was lower in the group with high MHR and high SXscores. The cut-off value of MHR that predicted a high SXscore was 24, with a sensitivity of 66% and a specificity of 65.1%.

Discussion and Conclusion: To the best of our knowledge, this is the first study in the literature showing that MHR is significantly associated with SXscores. Our results suggest that MHR can be used as a prognostic marker in patients with stable CAD since it is an easily available and non-expensive test.

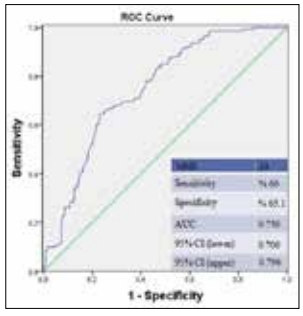


Figure 1. ROC Curve Analysis

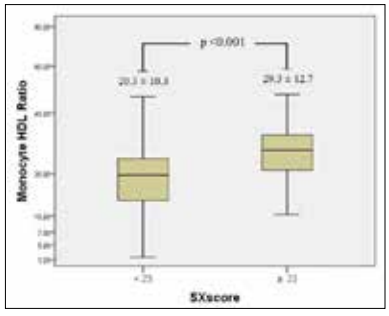


Figure 2. The relation between mean MHR and SXscore

Interventional Cardiology / Coronary

PP-042

The association between statin non-adherence and in-stent restenosis

Cüneyt Koçaş, Okay Abacı, Betül Balaban Koçaş, Gökhan Çetinkal, Şükrü Arslan, Ahmet Yıldız, Murat Ersanlı

[1]İstanbul University Institute of Cardiology, İstanbul

Introduction: Statins have been reported to reduce the incidence of cardiovascular events after coronary stenting, and the current guidelines recommend the routine use statins in patients who receive a coronary stent. However, approximately half of all patients discontinue statin therapy within the first year, and adherence decreases further during follow-up period. Furthermore, no studies have investigated the relationship between statin adherence and in-stent restenosis (ISR). Therefore, we investigated the rates of statin adherence and ISR among patients who underwent percutaneous coronary intervention (PCI) and who were prescribed a statin at their discharge.

Materials and Method: We retrospectively evaluated patients who had undergone bare-metal stent implantation and control coronary angiography (CA), and included patients who had continuous insurance coverage between the PCI and CA. Among these patients, we used the pharmacy-based proportion of days covered (PDC) method to quantify statin adherence during the period between the PCI and control CA.

Results: Among the 908 patients who fulfilled the inclusion criteria, the statin adherence rate (a PDC of ≥80%) was 26% in the ISR (+) group, compared to 33% in the ISR (-) group (p=0.03). Multivariate logistic regression analysis revealed that statin non-adherence was an independent predictor of ISR (odds ratio: 2.04, 95% confidence interval: 1.01–4.13, p=0.04).

Discussion and Conclusion: Our results indicate that many patients who are prescribed a statin at discharge, subsequently discontinue the statin therapy after PCI, and statin non-adherence significantly increased the risk of ISR.

Interventional Cardiology / Coronary

PP-043

Association between body composition and muscle strength and severity of coronary atherosclerosis in acute myocardial infarction

Burak Ayça[1], Didem Kafadar[1], Murat Avşar[1], İlhan İlker Avcı[1], Fatih Akın[2], Ertuğrul Okuyan[1], Mustafa Hakan Dinçkal[1]

[1]Bağcılar Training and Research Hospital, İstanbul
[2]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla

Introduction: To investigate association between body composition and muscle strength and severity of coronary atherosclerosis

Materials and Method: This prospective study relies on data from 230 patients with ST-elevation myocardial infarction (STEMI), having undergone primary percutaneous coronary intervention (pPCI). We calculate Gensini scores from initial angiograms as indicative of coronary atherosclerosis severity, subsequently dividing patients into low (<55) and high (≥55) Gensini patient groups. Patients' total fat, muscle mass, visceral fat mass and muscle strength were measured via body composition analyser and handgrip dynamometer.

Results: High Gensini patients had a greater metabolic age, body mass index (BMI) and lower handgrip strength, and more visceral fat (p=0.006, p=0.005, p=0.017 and p<0.001 respectively). Visceral fat >11.5 kg was associated with a high Gensini score with a sensitivity of 61% and a specificity of 59% (p<0.001) and a handgrip strength <28.6 kg was associated with a high Gensini score with a sensitivity of 68% and a specificity of 52% (p=0.017). In multivariate regression analysis, visceral fat and handgrip strength were independent predictors of high Gensini scores in patients with acute myocardial infarction (AMI) (p=0.022 and p=0.010 respectively).

Discussion and Conclusion: Increased visceral fat and lower handgrip strength may be related to increased coronary plaque burden. Visceral fat and muscle strength may be better prognostic markers than weight, BMI, total fat and muscle mass in coronary artery disease.

Table 1. Comparison of the patients with low and high Gen

	Low Gensini (n=115)	High Gensini (n=115)	P
BMI, kg/m²	27.2 ± 4.3	28.9 ± 4.4	0.005
Skeletal muscle mass, kg	31.3 ± 4.9	31.3 ± 5.1	0.97
Handgrip strength, kg	33.6 ± 9.6	30.2 ± 10.8	0.017
Fatty mass, kg	20.7 ± 7.7	22.5 ± 7.8	0.10
Fatty mass, %	26.8 ± 8.2	28.3 ± 8.0	0.15
Visceral fat, kg	11.0 ± 3.0	12.7 ± 3.2	<0.001

Interventional Cardiology / Coronary

PP-044

Periprocedural myocardial injury is associated with serum phospholipid-bound choline in elective percutaneous coronary interventions

Ali Buturak[1], Aleks Değirmencioğlu[1], Duhan Fatih Bayrak[1], Hüseyin Karakurt[2], Ali Rıza Demir[2], Mehmet Ertürk[2], Özgür Sürgit[2], Tuğrul Norgaz[1], Şevket Görgülü[1]

[1]Acıbadem University School of Medicine, İstanbul
[2]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul

Introduction: Elevations in circulating free choline (Ch) concentrations is known to be associated with the increases in plasma myocardial injury markers in acute coronary syndromes. Elective percutaneous coronary intervention (PCI) may cause myocardial injury which is defined as periprocedural myocardial injury (PMI).The present study aimed to evaluate the changes in serum concentrations of high sensitive cardiac troponin-T (hscTnT), Ch and phospholipid-bound choline (PLB-Ch) in patients undergoing elective PCI.

Materials and Method: A total of 104 patients (60.3±1.7 years old, 66 males and 38 females) undergoing elective PCI were participated into the study. Serum hscTnT, Ch and PLB-Ch concentrations were measured in blood samples obtained immediately before PCI (pre-PCI) and 12 hours after PCI (post-PCI). Clinical and procedural data were recorded. Elevation of cardiac troponins above the 99th percentile of upper reference limit in the presence of a normal baseline troponin value was defined as PMI (hs cTnT >14 ng/L).

Results: The mean concentrations of hscTnT, Ch and PLB-Ch before PCI were 8.7±0.0.3 ng/L, 10.3±0.5 µmol/L and 2419±76 µmol/L, respectively. After PCI, serum hscTnT and PLB-Ch concentrations elevated to 29.1±3.1 ng/L (p<0.001) and 2610±77 µmol/L (p<0.001). While serum Ch concentrations remained unchanged, 10.6±0.4 µmol/L, after PCI. There were no significant correlations between serum pre-PCI concentrations of hscTnT and PLB-Ch (r=0.167, p=0.092) or Ch (r=0.075, p=0.456). However,serum post PCI hscTnT concentrations were positively correlated to the pre-PCI PLB-Ch (r=0.292, p<0.01) and post-PCI PLB-Ch (r=0249, p<0.01) concentrations. There was no significant correlation between serum pre- and post-PCI hscTnT concentrations and serum pre- and post-PCI Ch concentrations.

Discussion and Conclusion: Our results show that phospholipid-bound choline increases following elective PCI. There is also a close association between serum phospholipid-bound choline and PMI following elective PCI.

Valve diseases

PP-045

Elevated neutrophil-to-lymphocyte ratio is a risk factor for in hospital mortality after valve replacement surgery

Tolga Sinan Güvenç[1], Ahmet Ekmekçi[1], Fatma Özpamuk Karadeniz[1], Veysel Ozan Tanık[1], Ahmet Öz[1], Gökhan Ertaş[1], Rengin Çetin Güvenç[2], Mehmet Eren[1]

[1]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[2]Haydarpaşa Numune Training and Research Hospital, İstanbul

Introduction: Despite advances in surgical intervention techniques, valve replacement (VR) surgery is still associated with a substantial mortality risk. The ratio of neutrophils to lymphocytes (NLR) in peripheral blood is a readily obtainable marker of inflammation. We aimed to investigate prognostic importance of preoperative NLR for estimating postoperative in-hospital mortality in patients undergoing VR surgery.
Materials and Method: All patients who had underwent VR surgery in year 2013 were retrospectively scanned, and a total of 932 patients were included. All included patients underwent aortic, mitral or combined aortic-mitral valve surgery in our institution. For all patients; demographic, clinical, and perioperative data as well as a complete blood count and blood chemistry obtained one day before surgery were available. The study was approved by a local ethics committee.
Results: Patients were divided into tertiles according to NLR values: Group I (NLR <1.90), Group II (NLR: 1.91-2.93) and Group III (NLR >2.94). Age, creatinine, previous renal failure, critical coronary stenosis and need for additional coronary surgery were significantly higher in Group III compared to Group I; and hemoglobin (Hb) was significantly lower and glucose was significantly higher in Group III compared to Group I and II. Mortality was significantly higher in Group III compared to Group I (OR: 4.6,95% CI:2.37-9.2; p<0.001) and Group II (OR: 2.2,95% CI: 1.32-3.86; p<0.01). Kaplan-Meier analysis showed reduced survival in Group III (85.2%), compared to Group II (92.9%) and Group I (96.4%, Log Rank p<0.001). Cox regression showed the following as the independent predictors of mortality: NLR, critical coronary stenosis, MVR, AVR (negative risk), degenerative valve disease, previous stroke and Hb.
Discussion and Conclusion: Patients with high NLR are at higher risk for postoperative mortality following valve surgery, presumably due to underlying systemic inflammation. Further studies are needed for prospective evaluation of NLR as a prognostic marker for VR surgery.

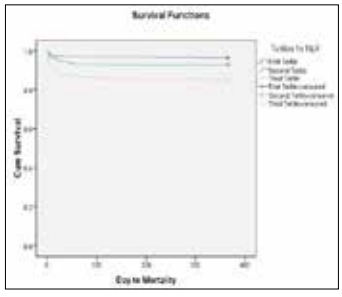


Figure 1. Postoperative survival curves for NLR tertiles

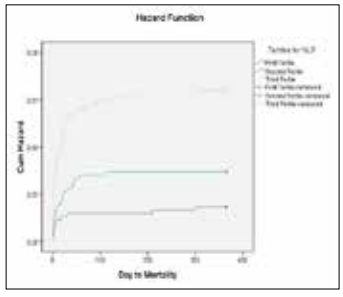


Figure 2. Hazard function for mortality for NLR tertiles

Valve diseases

PP-046

D-dimer level is a predicting factor for in-hospital mortality and morbidity in patients with infective endocarditis

Veysel Özgür Barış, Mustafa Kılıçkap, Hüseyin Göksülük, Nedret Ersoy, Onur Yıldırım, Afet Qarayeva, Anar Mammadli, İrem Müge Akbulut, Başar Candemir

Ankara University Faculty of Medicine, Ankara

Introduction: Infective endocarditis (IE) is rare but mortal disease, therefore prognostic factors play crucial role in diagnosis and follow-up. Older studies demonstrate us; D-dimer (DD) levels have been correlated with adverse outcomes in several disease. The aim of this study was to reseach the value of plasma DD levels for predicting mortality and adverse outcomes in patients IE.
Materials and Method: We scheduled 79 patients in this study with the definite IE diagnosis. All patients met the inclusion criteria according to the Dukes criteria. DD levels were studied all patients on admission. The primer outcome was in-hospital mortality from any cause. The secondary outcomes were urgent valve surgery, stroke and peripheric embolism in patients.
Results: Patients clinical characteristics are shown in Table 1. In-hospital mortality occurred in 31 (39%) patients. In dead patients, plasma DD levels found more higher than survival patients (47.69±54.81 mg/L for dying patients vs 10.65±15.18 mg/L for survival patients, p<0.001) (Table 2). Due to receiver operating characteristics curve analysis; DD ≥1,01 mg/L demonstrated sensitivity of 80% and specificity of 71% for the prediction of mortality.Urgent valve surgery was occured in 23 survived patients with high plasma DD level (16.70±19,93 mg/L for surgery patient vs 4.44±4.19 mg/L for non-surgery patients, p=0.009). Altough, other secondary outcomes were similar in both groups.
Discussion and Conclusion: This findings support that DD level on admission may be a simple, valid and pratical biomarker that guide us to identify high-risk IE patients for in-hospital mortality and urgent surgery.

Table 1. Basic clinical characteristics

	Exitus	Survived	p
Sex, Male(n)	13 (%41,9)	33 (%68,8)	0,17
Age	60,19±16,89	53,31±17,0	0,082
EF %	49±17	54±14	0,42
DM (n)	6(%20)	10(%20.8)	0,58
HT(n)	12(%38,7)	14(29.7)	0,26
Creatinin	2±1,57	1,67±1,76	0,49
Albumin	2,6±0,6	3,3±0,7	<0,001

Table 2. Results for clinical end-points

	DD levels	p
Exitus vs; Survived	47.69±54.81 ; vs 10.65± 15.18	<0.001
Stroke occured vs; Non- occured	2,40 ±4.25; vs 2,95±3,14	0,62
Perifpheric embolism occured vs ; Non- occured	30,39±41,13; vs 22,48±40,02	0,41
Urgent valve surgery vs; others	16.70±19,93 4.44±4.19	0.009

Valve diseases

PP-047

Determination of relationship between PRO-BNP levels and left ventricle mechanic functions with severity of mitral regurgitation

Fulya Avcı Demir, Mustafa Serkan Karakaş, Refik Emre Altekin, İbrahim Demir

[1]Akdeniz University, Faculty of Medicine, Antalya

Introduction: In moderate and severe mitral regurgitation (MSMR),left ventricular systolic dysfunction develops in times.In this study,subclinical left ventricular systolic dysfunction and the relationship with brain natriuretic peptid (BNP) were evaluated by using two-dimensional speckle tracking echocardiography (STE) and BNP measurements in patients with MSMR.
Materials and Method: Twenty four asymptomatic organic MSMR patients between the age of 18-65 were included.BNP and echocardiographic measurements were performed. The left ventricular global longitudinal strain (LTGS), circumferential strain (SGS) and radial strain (RGS) parameters were calculated via STE. Patients were divided into two groups according to their median BNP value [≥140 pg/ml (group 1) and <140 pg/ml (group 2)]. Both groups were compared in terms of systolic and diastolic functions by echocardiographic measurements and BNP.
Results: Demographic data was similar in both groups.Group 1 has higher mitral E and A valve velocities (0,915±0,297 vs. 1,2±0,337, p=0,023 and 0,634±0,191 vs. 0,862±0,255, p=0,035, respectively).There was a significant difference in LTGS values between group 1 and group 2 (-20,159±0,386 vs. -15,35±0,912, p<0, 001, respectively). No significant difference was observed in both SGS values (-9,29±7,614 vs. -19,74±1,249, p=0.119, respectively) and RGS values (42,708±7,044 vs. 41,154±4,65, p=0,813 respectively) (Table 1). In correlation analysis, a correlation was found between LTGS and BNP (r=0.814, p<0,001), BNP and regurgitan volume (r=0.681; p<0.001),BNP and ERO (r=0.644, p=0.001) (Figure 1). To identify patients who may benefit from early surgery, ROC analysis was performed and determined a LTGS cut-off value of -18.07 (Figure 1).
Discussion and Conclusion: Speckle tracking echocardiography and BNP measurements could be useful in the determination of subclinical left ventricular systolic and diastolic function deterioration in MR. Patients who benefit from early surgery may be determined via these parameters.

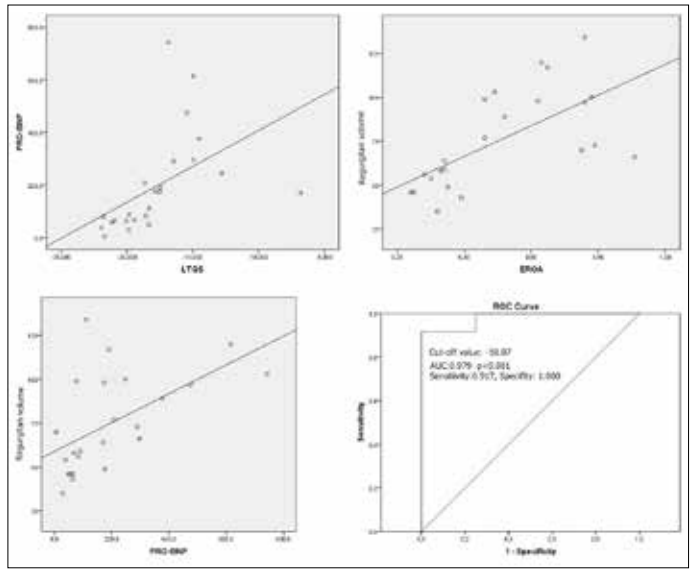


Figure 1. Correlation analysis and ROC curve

Table 1. Echocardiographic values of groups

	BNP<140pg/ml mean±sd	BNP ≥140pg/ml mean±sd	p value
RGS(%)	42,708±24,402	41,154±14,725	0.813
CGS(%)	-13,885(-29,59-70)	-19,968(-24,31-13,21)	0,119
LTGS(%)	-20,159 ± 1,338	-15,35 ± 3,159	<0,001
EROA(cm²)	0,325(0,24-0,76)	0,625(0,34-0,91)	0,004
RV(ml)	55(35-134)	93(49-120)	0,009
RF(%)	%47,0 ±10,608	%54,75 ± %9,468	0,072
VC(cm)	4(3-7)	4,5(3-7)	0,196

Valve diseases

PP-048

Association of the CHA_2DS_2-VASc scores with left atrial spontaneous echo contrast: a cross sectional study of patients with rheumatic mitral stenosis

Erdal Belen[1], Ender Özal[2], Hamdi Pusuroğlu[3]

[1]Okmeydanı Training and Research Hospital, İstanbul
[2]Pendik State Hospital, İstanbul
[3]Mehmet Akif Ersoy Chest and Cardiovascular Surgery Education and Research Hospital, İstanbul

Introduction: Mitral valve stenosis is a common manifestation of chronic rheumatic heart disease. The presence of spontaneous echo contrast in the left atrium has been reported to be an independent predictor of thrombo-embolic risk in rheumatic mitral valve stenosis (RMVS) patients. The objective of this study was to investigate to CHA_2DS_2-VASc score predict the left atrial spontaneous echo contrast (LASEC) in these patients.

Materials and Method: The patients with RMVS upon presentation to the cardiology polyclinic were included in the study consecutively and CHA_2DS_2-VASc scores were calculated. All patients were evaluated with transthoracic and transesophageal echocardiography and were divided into two groups as those with and without LASEC.

Results: The total number of patients was 265, with LASEC determined in 97 (36.6%) and not determined in 168 (63.4%). No significant differences in terms of age, gender and BMI were found between the groups. Patients with LASEC had higher mean CHA_2DS_2-VASc score than patients without LASEC (2.10±1.21 versus 1.11±0.7, respectively; p<0.001). In the multivariate logistic regression analysis, it has been determined that there is an independent correlation between the existence of LASEC and CHA_2DS_2-VASc score (OR: 3.282, CI: 2.008-5.364; p<0.001).

Discussion and Conclusion: The CHA_2DS_2-VASc score could be useful marker to detected prothrombotic state in patients with Rheumatic Mitral Stenosis in Sinus Rhythm.

Valve diseases

PP-049

Mean platelet volume is not associated with presence of spontaneous echocardiographic contrast or left atrial thrombus in mitral stenosis

Kevser Balcı, Orhan Maden, Mustafa Mücahit Balcı, Fatih Şen, Sefa Ünal, M. Serdar Kuyumcu, Hatice Selçuk, Timur Selçuk

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: The role of platelet activation has been debated in patients with mitral stenosis (MS) and spontaneous echocardiographic contrast (SEC). In this study mean platelet volume (MPV) and other hematologic parameters were analysed in patients with MS according to the presence of SEC and left atrial thrombus.

Materials and Method: Between January 2005 and March 2014, 188 consecutive patients having MS (mean age 45.0±11.7 years, 81.4% female) who underwent transesophageal echocardiogram before a scheduled percutaneous mitral balloon valvuloplasty (PMBV) and 35 healthy control subjects were enrolled retrospectively in the present study.

Results: Of the 188 patients, 105 (55.8%) patients were in sinus rhythm (SR). LA thrombus was detected in 31 (16.4%) patients, SEC was found in 142 (75.5%) patients. Among thrombus-detected patients 10 (32.2%) of them were in SR and in the SEC-detected group, 82 (57.7%) of them were in SR. Among patients with SR; 9.5% of them had LA thrombus and 78% of them had SEC. Among all patients MPV did not differ according to the rhythm status or the presence of SEC/left atrial thrombus (p>0.05). Also MPV did not vary according to the gender and presence of prior stroke in both AF and sinus rhythm groups (p>0.05). In correlation analysis MPV did not show any significant correlation with the echocardiographic thrombus predictors (p>0.05).

Discussion and Conclusion: Using hematological parameters with echocardiographic and clinical thrombus risk determinants for predicting individual thromboembolism risk in mitral stenosis is debatable according to our results.

Table 1. Characteristics of the study patients

Variables	SEC +	Thrombus +	Thrombus -	p-value †
Age				
All patients	44.5±11.4[b,c]	52.5±9.6[a,b]	34.5±9.6[a,c]	0.003‡
SR	42.1±11.2	52.4±10.6[a]	34.3±10.4[a]	0.007‡
AF	47.9±11.0	52.6±9.5	36.0±0.0	0.054‡
Female				
All patients	119(83.8%)	21 (67.7%)	13 (86.7%)	0.099¶
SR	73 (89.0%)[b]	4 (40.0%)[b]	11 (84.6%)	0.008¶
AF	46 (76.7%)	17 (81.0%)	2 (100.0%)	0.569¶
MVG (mmHg)				
All patients	11 (5-25)	10 (5-16)	11 (5-27)	0.059#
SR	11 (5-25)	10 (5-14)	11 (5-27)	0.417#
AF	11 (6-20)	10 (7-16)	12.5 (10-15)	0.170#
MVA (cm^2)				
All patients	1.2 (0.8-1.7)	1.2 (0.8-1.9)	1.1 (0.9-1.4)	0.268#
SR	1.1 (0.8-1.5)	1.1 (0.8-1.4)	1.1 (0.9-1.4)	0.604#
AF	1.2 (0.8-1.7)	1.3 (1.0-1.9)	1.2 (1.1-1.3)	0.128#
sPAP (mmHg)				
All patients	47 (27-100)	45 (35-80)	45 (30-60)	0.813#
SR	45 (33-85)	44 (35-50)	48 (30-65)	0.464#
AF	48 (27-100)	50 (35-80)	40 (35-45)	0.366#
LA (cm)				
All patients	4.6 (3.6-6.2)[c]	4.9 (3.5-6.2)[c]	4.4 (3.4-4.7)[a,c]	0.002#
SR	4.5 (3.6-5.7)	5.0 (3.5-6.2)[a]	4.4 (3.4-4.7)[a]	0.035#
AF	4.9 (4.0-6.2)	4.7 (3.7-6.2)	3.9 (3.4-4.5)	0.164
MR				
All patients	1 (1-3)[b]	1 (1-2)[b,c]	1 (1-2)[a]	0.005#
SR	1 (1-3)	1 (1-2)	1 (1-2)	0.722#
AF	1 (1-3)[b]	1 (1-2)[c]	1 (1-1)	0.020#
Valvular score				
All patients	8 (5-11)[b]	9 (6-12)[b,c]	8 (5-10)[a]	<0.001#
SR	8 (5-11)	9 (6-11)	8 (5-10)	0.181#
AF	8 (5-11)	10 (8-12)	7 (6-8)	0.044#

Table 2. Comparison of the hematologic variables

Variables	SEC +	Thrombus +	Thrombus -	Control	p-value †
Age					
All	44.5±11.4[b,c]	52.5±9.6[a,b]	34.5±9.6[a,c]	42.8±15.0[d]	0.003‡
SR	42.1±11.2	52.4±10.6[a]	34.3±10.4[a]	42.8±15.0	0.007‡
AF	47.9±11.0	52.6±9.5	36.0±0.0	-	-
WBC(10^3/μL)					
All	6.9 (3.0-16.1)	7.2 (4.2-12.4)	7.3 (5.5-11.7)	7.3 (5.4-11.0)	0.465#
SR	7.1 (3.8-16.1)	7.1 (5.2-10.9)	7.4 (5.6-11.8)	7.3 (5.4-11.0)	0.963#
AF	6.9 (3.0-13.3)	7.5 (4.2-12.4)	6.1 (5.5-6.7)	-	0.114#
HMG (g/dL)					
All	12.8±1.5	13.6±1.6	12.8±1.3	13.7±1.3	0.207‡
SR	12.9±1.4	13.3±1.5	12.9±1.4	13.7±1.3	0.105‡
AF	12.8±1.7	13.9±1.7	12.4±0.6	-	0.059‡
MPV (fl)					
All	9.0 (7-12)	9.1 (7.4-11.3)	9.0 (8.2-9.6)	8.8 (6.8-11.1)	0.516#
SR	9.1 (7.1-12.0)	8.6 (7.4-11.3)	8.8 (8.2-9.6)	8.8 (6.8-11.1)	0.263#
AF	8.9 (7.1-11.0)	9.3 (7.9-10.7)	9.6 (9.6-9.6)	-	0.282#
PLT(10^3/μL)					
All	235 (86-200)	250 (144-426)	232 (157-390)	264 (184-368)	0.331#
SR	234 (86-612)	212 (156-279)	245 (157-390)	264 (184-368)	0.091#
AF	238 (123-410)	254 (144-426)	226 (221-232)	-	0.402#

Valve diseases

PP-050

Altered plasma microRNA expression in patients with mitral chordae tendineae rupture

Mehmet Bülent Vatan, Aysel Kalaycı Yiğin, Ramazan Akdemir, Mustafa Tarık Ağaç, Mehmet Akif Çakar, Murat Aksoy, Ersan Tatlı, Harun Kılıç, Hüseyin Gündüz, Derya Güzel, Keziban Karacan

Sakarya University Faculty of Medicine, Sakarya

Introduction: Mitral chordae tendinea rupture (MCTR) is a progressive disorder which leads to severe mitral regurgitation. The aim of the study is to investigate the expression profile of circulating miRNAs potentially involved in the development of MCTR.

Materials and Method: Twenty-one patients with MCTR and thirty age and sex matched controls were enrolled in the study. The expression of 84 circulating whole blood miRNAs was analyzed using RT-qPCR.

Results: Compared with the controls, expressions of 22 miRNAs was significantly down-regulated in the MCTR group. Bioinformatic analysis indicated the following potential miRNA targets and molecular pathways to be commonly related to development of MCTR: MMPs, TIMP 2, VEGFA, PIK3R2, NRAS, PPP3CA, PPP3R1, PTGS 2 were predicted as putative targets of hsa-miR-222-3p, hsa-miR-106b-5p, hsa-miR-20a-5p, hsa-miR-17-5p, hsa-miR-15b-5p, hsa-miR-93-5p, hsa-miR-150-5p, hsa-miR-30e-5p, hsa-miR-373-3p, hsa-miR-126-3p, hsa-miR-16-5p, hsa-miR-26a-5p, and hsa-miR-195-5p.

Discussion and Conclusion: This is the first study to describe altered miRNA expression in patients with MCTR. Bioinformatic analysis has revealed that target genes involved in MCTR development were probably regulated by miRNAs.

Table 1. Differentially expression of plasma miRNAs

	MCTR group (n=21)		Control group (n=30)				
miRNA	Mean delta Cq	SD	Mean delta Cq	SD	Fold regulation	p value	Putative targets
hsa-miR-106b-5p	8,49	3,59	5,54	4,72	-7,7179	0,02	**MMP 2, MMP 3**, COL 19A1
hsa-miR-150-5p	5,95	4,78	3,49	4,51	-5,5012	0,02	**MMP 13, MMP 14**, COL 4A3B
hsa-miR-17-5p	7,06	4,31	4,11	4,56	-7,686	0,005	**MMP 2, MMP 3, MMP 24**
hsa-miR-20a-5p	6,06	4,58	2,27	4,18	-13,8824	0,001	**MMP 2, MMP 3**
hsa-miR-21-5p	1,54	3	1,14	3,32	-1,318	0,03	TIMP 1, TIMP 3, **MMP 2**
hsa-miR-222-3p	9,79	1,81	7,73	4,09	-4,1894	0,04	**MMP 1,TIMP 2**
hsa-miR-93-5p	7,36	4,14	2,93	4,23	-21,6166	<0,001	**MMP 2, MMP 3**
hsa-miR-30e-5p	8,96	3,29	5,82	4,42	-8,7816	0,03	**MMP 2, MMP 9**
hsa-miR-373-3p	7,63	4,24	4,51	5,24	-8,7268	0,02	**MMP 2, MMP 9, RECK**
hsa-miR-15b-5p	8,51	3,59	4,47	4,64	-16,2615	0,005	COL4A4, **MMP-3**

Valve diseases

PP-051

The effect of transcatheter aortic valve replacement on P-wave duration and P-wave dispersion

Hüseyin Dursun[1], Zülkif Tanrıverdi[2], Tuğçe Çöllüoğlu[1], Dayimi Kaya[1]

[1]Dokuz Eylul University, Faculty of Medicine, İzmir
[2]İdil State Hospital, Şırnak

Introduction: P-wave dispersion (PWD), a measure of heterogeneity of atrial refractoriness, is defined as the difference between the maximum and minimum P-wave duration. It has been shown that P-wave duration and PWD were increased in patients with severe AS. However, the effect of Transcatheter Aortic Valve Replacement (TAVR) on P-wave morphology has not been established yet. The aim of this study is to assess the short and long-term effects of TAVR with two types of bioprosthetic valves on P-wave duration and PWD.
Materials and Method: Fifty-two (36 female) eligible patients in sinus rhythm who underwent transfemoral TAVR between June 01, 2012 and July 31, 2014 with either a Medtronic CoreValve (MCV) (n:32) or an Edwards SAPIEN XT Valve (ESV) (n:20) were enrolled. Standard 12-lead electrocardiogram and echocardiographic evaluations were performed pre-procedurally, post-TAVR day one and 6 months post-TAVR. P-wave duration and PWD were measured and correlation analyses with echocardiographic variables were performed.
Results: P-wave duration and PWD were significantly decreased on post-TAVR day one ($p<0.05$). They continued to decrease during the six month follow-up period, but they were not significantly different from short-term values ($p>0.05$). In contrast, the effect of TAVR on left atrial (LA) diameter was not detected on post-TAVR day one but was detected at the sixth-month follow-up evaluation. These changes in P-wave duration and LA diameters were independent from the types of bioprosthetic valves implanted ($p>0.05$). Among all electrocardiographic and echocardiographic variables, only a weak correlation was detected between minimum P-wave duration and maximum aortic valve gradients at post-TAVR day one ($r=0.297$, $p=0.032$).
Discussion and Conclusion: P-wave duration and PWD were significantly reduced early after TAVR. Structural remodeling of LA on the other hand was detected at the sixth-month follow-up evaluation. The effects of two types of bioprosthetic valves on atrial electrical remodeling were found to be similar.

Valve diseases

PP-052

The relationship between serum uric acid level and severity of calcific aortic stenosis

Hüseyin Altuğ Çakmak[1], Serkan Aslan[2], Mehmet Ertürk[2], Vesile Örnek[2], Aydın Rodi Tosu[2], Ali Kemal Kalkan[2], Derya Öztürk[2], Ömer Taşbulak[2], Yalçın Avcı[3], Mehmet Gül[2]

[1]Rize Kaçkar Government Hospital, Rize
[2]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[3]Bahçelievler Government Hospital, İstanbul

Introduction: Calcific aortic stenosis (AS) is an active disease process that is characterized by endothelial dysfunction, lipid accumulation, chronic inflammation, and calcification, which mimics atherosclerosis. Moreover, an elevated oxidative stress play a significant role both in development of calcific AS and atherosclerosis. A significant relationships between serum uric acid (SUA) levels and various inflammatory, oxidative stress and atherosclerosis markers have been demonstrated in recent studies. SUA level has also been reported as an important independent risk factor in the development of cardiovascular diseases in many clinical studies. The aims of the present study were to determine SUA levels in patients with calcific AS and assess the relationship between SUA and calcific AS severity, which shares a similar pathophysiology with atherosclerosis.
Materials and Method: One hundred sixty-eight consecutive patients, who underwent elective coronary angiography based on symptoms and/or results of non-invasive imaging modalities and were ultimately demonstrated to have normal coronary arteries and were diagnosed with calcific AS by 2-D transthoracic echocardiography, were included in this observational case-control study. Classification of AS severity was performed according to the 2014 American Heart Association/American College of Cardiology Guideline for the Management of Patients With Valvular Heart Disease. SUA levels were measured by using an enzyme-linked immunosorbent assay method.
Results: Maximal aortic gradients, mean aortic gradients, and maximum jet velocities significantly increased, while aortic valve areas significantly decreased, as the degree of stenosis increased (all $p<0.001$). Serum uric acid levels were also significantly higher in the severe AS group than in the moderate and mild AS groups (6.2±0.7 mg/dL, 5.5±0.7 mg/dL, and 4.9±0.7 mg/dL, respectively, $p<0.001$). Uric acid was also positively correlated with maximum aortic gradient, mean aortic gradient, and maximum aortic jet velocity ($r=0.583$, 0.549, and 0.586, respectively, all $p<0.001$) and inversely correlated with aortic valve area ($r=-0.559$, $p<0.001$).
Discussion and Conclusion: We demonstrated a significant positive relationship between SUA level and severity of calcific AS, which supports the similar pathophysiology between calcific AS and atherosclerosis. Uric acid, which is an indicator of severe oxidative stress and atherosclerosis, might be a useful biomarker for evaluation and follow up the severity of calcific AS.

Valve diseases

PP-053

Do we overcome rheumatic heart disease or is it still a disease burden?

Barış Buğan[1], Erkan Yıldırım[2], Serdar Fırtına[3], Cem Barçın[2]

[1]Girne Military Hospital, Cardiology Service, Girne, North Cyprus
[2]Gülhane Military Medical Academy (GMMA) Ankara, Ankara
[3]Erzurum Militry Hospital, Cardiology Service, Erzurum

Introduction: Rheumatic heart disease (RHD) is still the most common acquired cardiovascular disease in especially developing countries. In this ongoing pilot study, we aim to investigate the prevalence of both definitive and borderline RHD in Turkey as a developing country.
Materials and Method: A total of 132 healthy young (≤45 years old) individuals (1 female, 131 males; mean age 29.3±6.9 [19-45] years), who were applied for being a military personnel, were recruited for our ongoing pilot study in different regions of Turkey to assess the presence of both definitive and borderline RHD. 2012 World Heart Federation (WHF) criteria for echocardiographic assessment and diagnosis of RHD was used.
Results: Definitive and borderline RHD were found in 11 individuals (8.3%) and 49 individuals (37.1%), respectively (Table 1). Only 31 (52%) with RHD had a murmur at cardiac auscultation, and only 23 (38%) had a history of previous frequent sore throat and tonsillitis. Nobody had clinical symptoms. In addition, abnormal thickening of the anterior mitral valve leaflet (AMVL) was found statistically significant among normal and the RHD groups (3.4±0.8 vs 4.4±0.8, $p<0.0001$) (Table 2). However, the thickness of the AMVL was not found significant among the borderline and the definitive RHD groups (4.4±0.5 vs 4.7±0.7, $p=0.220$).
Discussion and Conclusion: Despite involving only a limited population sample, our ongoing pilot study showed that there is a high prevalence of definitive (8.3%) and borderline (37.1%) RHD among individuals with no symptoms. In conclusion, the data demonstrated the importance of a clinical and echocardiographic evaluation for preventive campaign for RHD.

Table 1. The number of the subgroups in the study

	Normal	Borderline RHD	Definitive RHD	Total (n)
≤ 20 Ages	1 (14.3%)	4 (57.1%)	2 (28.6%)	7
20-40 Ages	63 (55.8%)	41 (36.3%)	9 (8%)	113
> 40 Ages	8 (66.7%)	4(33.3%)	0	12
Total (n,%)	72 (54.5%)	49 (37.1%)	11 (8.3%)	132

Table 2. Thickness of the AMVL for Normal and RHD groups

	Normal (n=72)	RHD (n=60)	p-value
Thickness of the AMVL	3.4±0.8	4.4±0.8	<0.0001

Heart failure

PP-054

Analysis of the predictive value of liver functıon tests in the patients with decompensated heart failure for detecting the early – late mortality

Göksel Dağaşan[1], Mahmut Şahin[2], Özcan Yılmaz[2], Sabri Demircan[3], Okan Gülel[2], Korhan Soylu[2], Serkan Yüksel[2], Kenan Çakmak[2], Tuğba Diri[2], Metin Çoksevim[2], Fatih Çalışkan[2]

[1]Amasya University, Sabuncuoğlu Şerefeddin State Hospital, Amasya
[2]Ondokuz Mayıs University, Samsun
[3]Florence Nightingale Hospital, İstanbul

Introduction: Although improvements at diagnosis and treatment, heart failure has a poor prognosis. Multiorgan disfunctions could be seen patient with decompensated heart failure. Liver injury due to cardiac disfunction is a known fact but its clinical significance couldn't shown. Liver function test is a guide in the presence of liver injury. We investigate the predictive value of liver function tests to show inhospital and outhospital mortality and morbidity of decompansated heart failure patients.
Materials and Method: This study was designed retrospectively including the patients older than 18 years who admitted to Ondokuz Mayıs University Medical Faculty Hospital Cardiology Clinic dates between 01/01/2011 and 30/06/2013 and hospitalised with a diagnosis of decompensated heart failure. 446 patients determined, but 145 patients excluded because of exlusion criteria and so 301 patients included the study. Labaratory tests results, vital signs and clinical appearance at admission, treatment modalities, inhospital lengt of stay and units, ECG and echocardiographic parameters are recorded from patient medical files by using nucleus database. All study patients followed up for 12 months after discharge. Rehospitalization for decompansated heart failure and all causes of mortality were eveluated from phone calls and population directory database. Patients divided into 4 groups according to ALT levels, which is the more spesific determinant of liver cell necrosis. We aim to find out any association between ALT levels and other liver function tests.
Results: The mean patient age is 67,6±11,6 years in our study. Median ALT levels of patients 24,4 (4,8-4533,0) U/L.Patient in group for which has high ALT levels were more hypotansive from other groups. NYHA class IV patients were higher in Group IV. AST levels were high, albumin levels were low, direct bilurubin levels were high and hyponatremia was common in Group IV patients. Patients in Group IV requıred more positive inotropic support, more mechanical ventilation, more ultrafiltration and more CRT than other groups. In hospital treatment time, need for coronary intensive care unit, in hospital and total mortality and rehospitalization were high in Group IV patients. Outhospital mortality were not different between patient groups. ALT limite value for inhospital mortality was 48,9 U/L, with %86,4 sensitivity and %80,4 specificity. ALT limit value for treatment requirement at coronary intensive care unit was 25,3 U/L with %71,7 sensivity and %70,3 specificity. When comparing the survival rates of the patients at first year, the survival rate of Group IV was the lowest one with 219 days.
Discussion and Conclusion: Our study is the only study that eveluate the associatiotion between liver transaminase levels and additional inhospital treatment requirement, inhospital mortality, total mortality and long term rehospitalization for decompansated heart failure. We found that high ALT levels at hospital admission is an important predictor for in hospital mortality and morbidity.

Heart failure

PP-055

Assessment of ventricular systolic function by speckle tracking; pre and post levosimendan in patients with acutely decompensate chronic heart failure

Turgay Işık[1], Halil İbrahim Tanboğa[2], Erkan Ayhan[1]

[1]Balıkesir University, Faculty of Medicine, Balıkesir
[2]Atatürk University, Faculty of Medicine, Erzurum

Introduction: Levosimendan is an inodilator developed for the treatment of patients with acute heart failure. Previous studies showed that levosimendan improving haemodynamic parameters without further oxygen consumption and improves some of echocardiographic indices. The aim of this study was to evaluate effect of levosimendan on ventricular systolic function by using speckle tracking echocardiography in patient with acutely decompensate chronic heart failure (ADCHF)

Materials and Method: Twenty-three consecutive patients (mean age 69.8±10.4 years and male 60.9%) with ADCHF were analyzed. Ischemic etiology was present 17 (73.9%) patients. Intravenous furosemid was started all of patients. Before and after 24-hour infusion of levosimendan (0.1 mg / kg / min) left ventricular (LV) strain (S) and strain rate (Sr) were evaluated by apical two- (2C), three- (3C), and four-chamber (4C) imaging. Global S were calculated by averaging the 3 apical views. Additionaly, BNP levels were measured before and after levosimendan.

Results: Despite the diastolic blood pressure (95.5±13.7 vs 69.5±11.8, p:0.005) significantly lowered after levosimendan, systolic blood pressure (122.6±19.4 vs 111.9±13.6, p:0.87) and heart rate (107.2±22.4 vs 95.4±17.6, p:0.06) was not too significant change. There was a significantly decreased in BNP levels (7702.2±5500.5 vs 4215.6±3203.9, p<0.001). LV ejection fraction (30.8±10.0 vs 36.4±9.9, p:0.002) significantly increased after levosimendan, ventricular volume and diameter is not too significant change. 4C-S (-5.86±3.95 vs -7.51±3.11, p:0.01), GS (-6.45±3.28 vs -7.76±2.18, p:0.01) and RV-S (-10.3±6.03 vs -12.90±5.28, p:0.02) significantly increased after levosimendan infusion.

Discussion and Conclusion: Levosimendan was improvement clinic and subclinic left and right ventricular systolic function in patient with ADCHF.

Heart failure

PP-56

Value of renal vascular Doppler sonography in cardiorenal syndrome type 1

Özgür Ulaş Özcan, Deniz Kumbasar, Nil Özyüncü, Veysel Barış, Hüseyin Göksülük, Çetin Erol

Ankara University, Faculty of Medicine, Ankara

Introduction: Generation of renal dysfunction in the patient with acute decompensated heart failure is termed as cardiorenal syndrome type 1(CRS 1). Recent studies have showed the association of persistent systemic venous congestion and renal dysfunction. We evaluated the changes of renal venous impedance index (VII) and arteriolar resistivity index (ARI) with diuretic therapy, in CRS 1.

Materials and Method: Cases with CRS 1 were identified among patients hospitalized for decompensated heart failure. Serial measurements of VII and ARI were performed by pulsed wave Doppler sonography of the interlobar and segmental renal arteries and veins during the hospitalization course. A total of 30 patients with improvement of creatinine with diuresis (group 1) and 34 patients without any improvement (group 2) were analyzed.

Results: Patients in group 1 had higher median VII and ARI (0.86 vs 0.66, p<0.001 for VII, 0.78 vs 0.65, p<0.001 for ARI) on admission. The difference of ARI between the groups disappeared (0.65 vs 0.7, p=0.61 for ARI) at the time of creatinine nadir. At the over-diuresis period median value of ARI increased in comparison with the creatinine nadir period (0.65 vs 0.72, p=0.001), which accompanied the creatinine re-increase (1.29 vs 1.47, p<0.001) in group 1.

Discussion and Conclusion: The renal vascular Doppler parameters might offer guidance on the diagnostic and therapeutic strategies in prescribing of decongestive therapy in decompensated heart failure.

Table 1. Renal venous and arterial Doppler measures

On admission	Group 1 (n=30)	Group 2 (n=34)	P
Median VII, (min-max)	0.86(0.34-1)	0.66(0.3-1)	<0.001
Median ARI, (min-max)	0.78(0.6-1)	0.65(0.54-0.78)	<0.001
Time of creatinine nadir			
Median VII, (min-max)	0.60(0.4-1)	0.44(0.32-1)	0.005
Median ARI, (min-max)	0.65(0.45-0.87)	0.7(0.48-0.78)	0.61
Time of over-diuresis			
Median VII, (min-max)	0.56(0.32-1)	0.44(0.3-1)	0.007
Median ARI, (min-max)	0.72(0.54-0.85)	0.66(0.45-0.87)	0.035

Heart failure

PP-057

Vitamin D levels predict hospitalization and mortality in patients with heart failure

Erdal Belen[1], Aylin Sungur[2], Mustafa Azmi Sungur[2]

[1]Okmeydanı Training and Researc Hospital, İstanbul
[2]Kahramanmaraş State Hospital, Kahramanmaraş

Introduction: Low levels of vitamin D are closely associated with cardiovascular diseases. Heart failure with its increasing frequency is a major health problem and has a worse prognosis despite therapy. We aimed to investigate the effect of vitamin D levels on hospitalization and mortality in patients with heart failure.

Materials and Method: Heart failure patients with ejection fraction 20 ng/ml). Median follow-up time was 12 months. Hospitalization rates and overall survival were compared between groups. Independent predictors of hospitalization and mortality were defined.

Results: With a median follow-up period of 12 months, hospitalization and overall death occured more frequently in Group 1 than Group 2 (23.4% vs 7.3%, 16.1% vs 1.2%, p<0.005 for both). Low levels of vitamin D was defined as an independent predictor of increased hospitalization (HR 0.896,95% CI 0.843-0.953, p<0.000) and mortality (HR 0.834, 95% CI 0.753-0.925, p<0.001).

Discussion and Conclusion: Vitamin D deficiency is highly prevalent in patients with heart failure and low vitamin D levels are closely associated with increased hospitalization and mortality.

Heart failure

PP-058

Non-alcoholic steatohepatitis score is an independent predictor of right ventricular dysfunction in patients with non-alcoholic fatty liver disease

Murat Sünbül[1], Tarık Kıvrak[2], Erdal Durmuş[3], Hakan Akın[1], Yücel Aydın[1], Rabia Ergelen[1], Yusuf Yılmaz[1], Mehmet Ağırbaşlı[1]

[1]Marmara University Faculty of Medicine, İstanbul
[2]Sivas Numune Hospital, Sivas
[3]Silifke State Hospital, Mersin

Introduction: Non-alcoholic fatty liver disease (NAFLD) is associated with increased risk of cardiovascular disease and impaired left ventricular (LV) function, yet the impact of NAFLD on right ventricular (RV) function remains unclear. We investigate the RV functional properties in patients with NAFLD.

Materials and Method: Ninety consecutive patients with the diagnosis of biopsy proven NAFLD and 45 age-sex matched controls were included. All patients underwent an echocardiographic examination. RV function was evaluated by two dimensional (2D) speckle tracking echocardiography (STE).

Results: Mean fibrosis stage and non-alcoholic steatohepatitis (NASH) scores were 1.3±1.1 and 5.2±1.6, respectively. NAFLD patients displayed decreased RV function compared to controls. NAFLD patients with liver fibrosis (67 patients) had significantly lower RV function assessed by GLS (global longitudinal strain) compared to patients without liver fibrosis (18.9±3.4% vs. 21.6±2.3%, p<0.001). NASH score ≥5 was associated with lower RV-GLS (18.9±3.1% vs. 21.0±3.4%, p=0.006). NASH score inversely correlated with RV-GLS (r=-0.370, p < 0.001) such as patients with impaired RV-GLS (<19%) showed significantly higher NASH score compared to normal RV-GLS group (5.8±1.4 vs. 4.8±1.7, p=0.009). Logistic regression analysis revealed that NASH score was an independent predictor of impaired RV function in patients with NAFLD.

Discussion and Conclusion: Patients with NAFLD have impaired RV function. NASH score inversely correlates with RV-GLS and independently predicts impaired RV function in patients with NAFLD.

Heart failure

PP-059

Right ventricular outflow tract tissue doppler in heart failure (preliminary results)

Mikheil Mikheil Tsverava

Chapidse Cardiology Center

Introduction: Right ventricle (RV) plays important role in Heart Failure. Inflow and outflow tracts of this chamber are functionally and morphologically different. The inflow tract of RV (RV in) was actively studied by different EchoCG methods in normal and pathologic state, but there is little information about RV outflow tract.

Materials and Method: To investigate RV outflow tract (RVout) pulsed wave TDI qualitative and quantitative parameters in patients with congestive heart failure (HF). We studied 125 healthy volunteers and 30 patients with HF. RVout pulsed wave TDI was registered from subcostal position with sample volume on RV lateral wall, near the pulmonary valve. RVin TDI was registered in apical 4 camber view with the sample volume positioned at lateral wall near the tricuspid valve.

Results: The pattern of TDI from RVout was quite different from pattern of TDI of RVin. It was characterized by prominent positive wave in isovolumic contraction period (Sict), high positive wave et the beginning of systole (S) with sharp decrease of velocity, prominent negative and positive waves during isovolumic relaxation period (Eict1 and Eict2) and two negative waves in diastole (E and A). The TDI waves of RVin where significantly greater and isovolumic relaxation time shorter then corresponding waves on RVout TDI. The Sict (4.0±1.4 versus 6.4±1.9 cm/sec), S (7.9±1.8 versus 9.2±2.4 cm/sec), Eist1 (-3.9±1.9 versus -9.2±2.4 cm/sec) and E (4.4±1.3 versus 7.4±1.8 cm/sec) on TDI from RVout where significantly slower in HF group compared with normal persons (p<0.001).

Discussion and Conclusion: In normal persons the TDI pattern of RV inflow and outflow tract is qualitatively and quantitatively different. In patients with HF the systolic and diastolic wave velocities where significantly lower compared to the normal persons.

Heart failure

PP-060

Diagnostic significance of serum galectin-3 levels in heart failure with preserved ejection fraction

Evin Bozcalı Polat[1], Veli Polat[2], Turgut Uygun[2], Selçuk Opan[2], Osman Karakaya[2]

[1]Koç University, İstanbul
[2]Bakırköy Dr. Sadi Konuk Education and Research Hospital, İstanbul

Introduction: Galectin-3, reflecting cardiac fibrosis, is a promising biomarker in early detection of heart failure with preserved ejection fraction (HFpEF). We aimed to clarify the clinical utility of galectin-3 levels in the diagnosis of HFpEF and to compare galectin-3 with N-terminal pro-brain-type natriuretic peptide (NT-proBNP) levels.
Materials and Method: The study included 44 HFpEF patients and 38 controls. Galectin-3 and NT-proBNP levels were assessed by the ELISA kits. All patients underwent an echocardiographic examination. The receiver operating characteristics (ROC) curve was used to examine the diagnostic performance of galectin-3 and NT-proBNP in HFpEF.
Results: Galectin-3 and NT-proBNP levels were significantly increased in patients with HFpEF than in controls [5.35 ng/ml (0.86-14.90) vs 0.51ng/ml (0.15-1.71) p<0.0001, 617.75±271.30 pg/ml vs 66.35±54.01 pg/ml p<0.0001; respectively]. Galectin-3 was correlated with NT-proBNP, left atrial volume index, left ventricular mass index, and E/E' (r=0.90, p<0.0001; r=0.75, p=0.0001; r=0.86, p=0.0001; r=0.80, p=0.0001; respectively). The area under the ROC curve was 0.98 for galectin-3 and 1.0 for NT-proBN
Discussion and Conclusion: Our results supported that in addition to the NT-proBNP, the galectin-3 is also a valuable biomarker in the discrimination of patients with and without HFpEF. Therefore, galectin-3 has a diagnostic significance in HFpEF.

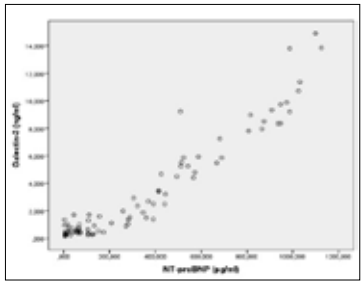


Figure 1. Correlation between serum galectin-3 and NT-proBNP

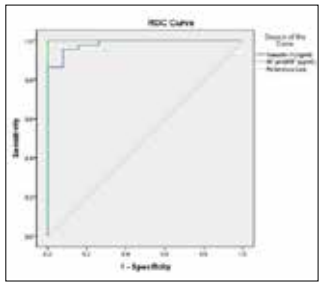


Figure 2. Receiver operating characteristic (ROC) curves of

Heart failure

PP-061

Impact of right ventricular stroke work index on the echocardiographic and clinical response to cardiac resynchronization therapy

Songül Usalp, Nurcan Arat, Ebru Özenç, Ömer Yıldız, Önder Demiröz, Çavlan Çiftçi

İstanbul Metropolitan Municipality Department of Health and Social Services, İstanbul

Introduction: The aim of this study was to investigate the impact of baseline right ventricular (RV) function detected by RV stroke work index (RVSWI), an invasive hemodynamic parameter of RV on and the influence of clinical response to cardiac resynchronization therapy (CRT) in patients with advanced heart failure (HF).
Materials and Method: The study enrolled 64 patients with HF had RVSWI measured at baseline, and 40 of these were assigned to CRT. Patients' clinical, echocardiographic and basal right heart catheterizations characteristics were recorded retrospectively. Patiens were implanted CRT in the follow up assigned as Group 1 and patients without CRT assigned as Group 2. The relation of RVSWI values with cardiac resynchronization therapy was evaluated. Each group also divided and compared according to the cut of value (8 g/m^2/beat) of RVSWI value.
Results: Their median age was 63 (24 to 80) years, left ventricular ejection fraction (EF) was 28% (21% to 35%). During a median follow-up of 17.5 months, 6 (9.4%) deaths occurred. Twelve of 64 (18.8%) patients needed to rehospitalization due to cardiac decompansation. RVSWI was 7.5±3.2 g/m^2/beat in study group. Improvement of EF in both CRT patients and control group were statistically significant, however reduction in systolic pulmonary artery pressure (SPAP) were not (p=0,356). In comparison of the group 1 and group 2 of the patients who had more than 8 g/m2/beat, there was significant difference in the improvement in EF, but no significant difference in reduction of the SPAP. There were no appearent relationship between RVSWI and cardiac decompansation or mortality in either CRT and non-CRT groups in these advanced HF patient.
Discussion and Conclusion: CRT RVSWI is a weak determinant of the relative benefits of CRT on LV systolic function and SPAP in patient with RV dysfunction.

Hypertension

PP-062

Serum neutrophil gelatinase-associated lipocalin levels in patients with non-dipper hypertension

Gökhan Aksan[1], Sinan İnci[2], Gökay Nar[2], Serhat Sıgırcı[1], Ömer Gedikli[3], Korhan Soylu[4], Rukiye Nar[2], Serkan Yüksel[4], Mahmut Şahin[4]

[1]Şişli Etfal Training and Research Hospital,İstanbul
[2]Aksaray State Hospital, Aksaray
[3]Artvin State Hospital, Artvin
[4]Ondokuz Mayıs University, Samsun

Introduction: Neutrophil gelatinase-associated lipocalin (NGAL) is a protein belonging to the lipocalin superfamily, which plays a role in atherosclerosis, renal injury, and inflammation. The present study aimed to investigate serum NGAL concentrations in groups of patients with dipper and non-dipper hypertension (HT) and to characterize the relationship between NGAL concentration and circadian blood pressure in hypertensive patients.
Materials and Method: A total of 41 (22 male, 19 female, mean age: 56.1±8.9 years) non-dipper HT patients, 40 (19 male, 21 female, mean age: 54.0±10.0 years) dipper HT patients and 42 age- and gender-matched healthy individuals were enrolled in the study. Dipper and non-dipper HT was diagnosed via ambulatory blood pressure monitoring (ABPM). Serum NGAL concentrations were measured by enzyme-linked immunosorbent assay (ELISA) from blood samples obtained from patients.
Results: Serum NGAL concentrations were found to be significantly higher in the non-dipper and dipper HT patient groups as compared with the control group (84.9±23.0 ng/ml and 62.1±17.8 vs. 46.6±13.7 ng/ml, p<0.017, respectively). Moreover, serum NGAL concentrations were significantly higher in the non-dipper HT group than the dipper HT group (p<0.017). Serum NGAL concentration showed significant correlation with overall ambulatory BP levels both in non-dipper and dipper HP groups.
Discussion and Conclusion: In the present study, we determined that serum NGAL concentrations significantly increase in non-dipper HT patients as compared with dipper HT patients and normotensive patients and show significant correlation with ambulatory BP levels. Serum NGAL concentration might be a useful marker in identifying HT patients with higher risk for cardiovascular mortality.

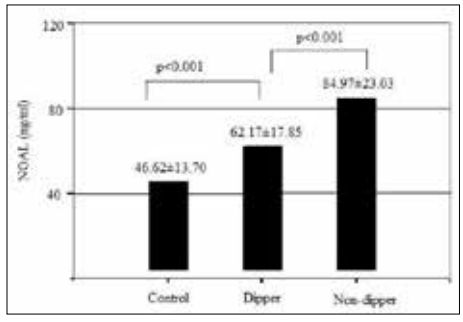


Figure 1. Comparison of serum NGAL levels in study groups

Hypertension

PP-063

Assessment of vitamin D levels in patients with resistant hypertension

Erdal Belen[1], İrfan Şahin[2], Barış Güngör[3], Burak Ayça[2], İlhan İlker Avcı[3], Murat Avşar[4], Süleyman Sezai Yıldız[2], Fatih Akın[4], Emrah Bozbeyoğlu[3], Ertuğrul Okuyan[2]

[1]Okmeydanı Training and Researc Hospital, İstanbul
[2]Bağcılar Training and Research Hospital, İstanbul
[3]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[4]Muğla Sıtkı Koçman Faculty of Medicine, Muğla

Introduction: Resistant hypertension (RH) is associated with high risk for adverse events in patients with hypertension (HT). Recently, the impact of low Vitamin D levels in cardiovascular diseases has been established. In this study, we investigated Vitamin D levels in hypertensive population, especially in subjects with RH.
Materials and Method: A total number of 100 hypertensive and 50 normotensive patients were prospectively recruited. RH was defined as "suboptimal blood pressure control despite using three antihypertensive agents including a diuretic or need of 4 or more drugs to control blood pressure".
Results: There was no difference in terms of age, sex and BMI between the 3 groups. Vitamin D levels were significantly lower in RH group compared to controlled HT and normotensive groups (p<0.001,for both). In the multivariate logistic regression analysis, Vitamin D level was independently correlated with RH (Beta: 0.660, CI: 0.572-0.760, p<0.001). ROC analysis revealed that Vitamin D level lower than 21.50 ng/ml predicted presence of RH with 78% sensitivity and 79% specificity (AUC = 0.89, 95% CI 0.83-0.94).
Discussion and Conclusion: Vitamin D levels of resistant HT patients were found to be lower than both the normotensive and the controlled HT group. Vitamin D levels may be important and helpful in understanding the pathology of resistant HT, which is associated with increased end organ damage and higher cardiovascular risk, and deciding on the treatment targets.

Hypertension

PP-064

The relationship between carotid intima-media thickness,aortic stiffness and neutrophil-lymphocyte ratio in patients with prehypertension

Mahmut Yılmaz[1], Abdülmecit Afşin[2], Şıho Hidayet[3], Necip Ermiş[4]

[1]Silopi State Hospital, Şırnak
[2]Adıyaman State Hospital, Adıyaman
[3]Malatya State Hospital, Malatya
[4]İnönü University Faculty of Medicine, Malatya

Introduction: Prehypertensive patients have a more increased over cardiovascular risk when compared to normotensive ones.Apart from the fact that the development of the disease is multifactorial, atherosclerosis and inflammation are the major known causes of the disease. It is possible to understand the severity of the disease by taking into consideration the elastic properties of the aorta, the carotid artery intima-media thickness (CIMT) and the neutrophil lymphocyte ratio (NLR), a new determinant for inflammation.
Materials and Method: Selected from the general population of the city of Malatya,a total of 100 patients, 50 of whom were female prehypertensive patients whose blood pressure ranged between 120/80 mmHg and 139/89 mmHg and 50 of whom were normotensive patients with blood pressure below 120/80 mmHg, were incorporated in the study. The systolic and diastolic diameters of the aorta to calculate echocardiographically the elastic properties of the aorta (aortic distensibility, aortic stiffness, aortic strain) were measured.
Results: The aortic stiffness index was determined as 4,14±0,21 in the prehypertensive population and as 3,94±0,26 in the normotensive one. The CIMTin the prehypertensive population was calculated as 0,73±0,097, while in the normotensive one, it was 0,55±0,065. Another parameter, NLR was 2,94±0,45 in the prehypertensive population and 2,44±0,27 in the normotensive one. The correlation among the aortic stiffness, CIMT and NLR, despite being positive, proved to be insignificant.
Discussion and Conclusion: The result we acquired in our study where we compared the prehypertensive patients with the normotensive ones in terms of their aortic stiffness, CIMT and NLR suggested that with the development of prehypertension in the patients, the severity of the disease and its relevance with the increased blood pressure (BP) needed to be determined through echocardiographic, ultrasonographic and biochemical measurements and the development of overt hypertension required to be prevented through early diagnosis.

Hypertension

PP-065

The evaluation of left ventricular systolic functions in patients with "non-dipper" and "dipper" hypertension via Two-dimensional longitudinal strain

Aydan Ongun, Ulvin Habibova, Demet Menekşe Gerede, İrem Dinçer, Mustafa Kılıçkap, Çetin Erol

Ankara University Faculty of Medicine, Ankara

Introduction: The blood pressure (BP) has circadian rhythm. The studies done by Ambulatory Blood Pressure Monitoring (ABPM), which is capable for 24–hours tracking of BP, has been classified hypertension (HT) patients as "dipper" if nighttime BP levels decreased 10% or more compared to daytime values and "non-dipper" if the reduction is less than 10%. "Non-dipper" HT cases has higher rates of target organ damage that increases the cardiovascular morbidity and mortality. Two-dimensional (2D) deformation analysis can detect subclinical LV systolic dysfunction at an early stage which can not be determined by conventional echocardiography (ECHO). The aim of the study was to assess the role of 2D speckle tracking strain imaging on detecting subclinical LV systolic dysfunction in recently diagnosed "non-dipper" and "dipper" hypertensive patients whose LV systolic functions were normal by conventional ECHO.
Materials and Method: Patients diagnosed newly with essential hypertension were enrolled in the study. According to the ABPM results hypertensive patients were divided into two groups as "dippers" and "non-dippers". If left ventricular systolic functions and regional wall motions were determined as normal by conventional ECHO, then apical four, three and two chamber views were recorded in gray scale. 2D global and segmental longitudinal strain analysis was conducted by speckle tracking method. Global and segmental systolic strain and strain rates were measured. Global longitudinal strain (GLS) and global longitudinal strain rates (GLSR) were calculated as arithmetic average of all segmental longitudinal strain and strain rates. The study included 40 recently diagnosed hypertensive patients.
Results: According to the ABPM, 32 patients were classified as "non-dippers". The average age of the patients in both of the groups was similar (49.5±12.4 years vs. 52.0±13.5 years, p=0.85). 70% of the cases were men. No meaningful statistical difference was determined between the groups' demographical features and laboratory data. The patients were on similar cardiovascular drugs. There was no statistically difference between the "non-dippers" and "dippers" in the left ventricular diameters, mass, mass index, and EF 2D speckle tracking analysis showed that mean GLS (-17.75±3.38% vs. -17.50±1.97%, p=0.91) and GLSR (-1.17±0.22 s-1 vs. -1.28±0.17 s-1, p=0.43) were similar between the groups. LV segmental analyses, also, showed that regional strain and strain rates were not different between the observed groups.
Discussion and Conclusion: In our study, 2D speckle tracking examination demonstrated that LV global and segmental strain and strain rates were not different between the "non-dipper" and "dipper" hypertensive patients. But, further larger and prospective studies are needed to evaluate the value of that newer technique.

Hypertension

PP-066

Echocardiography and electrocardiography measurments in the evaluation of a hypertensive patient at city of Düzce, Turkey

İsmail Ekinözü[1], Yasin Türker[2], Hakan Özhan[3], Yusuf Aslantaş[4], Osman Kayapınar[3], Hakan Tibilli[3], Fatih Ermiş[3]

[1]Karaman State Hospital, Karaman
[2]Süleyman Demirel University Faculty of Medicine, Isparta
[3]Düzce University Faculty of Medicine, Düzce
[4]Çerkezköy State Hospital, Tekirdağ

Introduction: Hypertension is the major cardiovascular risk factor directly causing coronary artery disease, stroke, renal failure, and peripheral arterial disease. Left ventricular hipertrophy (LVH) as a sign of end organ damage is directly proportional with cardiovascular events. Today, electrocardiography (ECG) and echocardiography (ECHO) are the most useful noninvasive technics in cardiology practice. They are both used as diagnostic tools and for following up the treatment response in various cardiovascular diseases. The aim of this study is comparing the ECG and ECHO in assessing the hypertensive individuals and establishing the variables affecting to LVH.
Materials and Method: Representative 400 people (>17 years-old), living in the Yığılca town of Düzce city, each for a family practitioner randomized as age, gender, urban-rural distribution are invited to the study. Measurement of the blood pressure was performed with a sphygmomanometer after 10 min rest in seated position, and the left arm was used. The mean of the three measurements of each patient was recorded. Individuals using any antihypertensive drug or having a systolic blood pressure greater than 140 mmHg and/or diastolic blood pressure greater than 90 mmHg are assumed to have hypertension based on JNC VII criteria. 855 hypertensive patients are included in the study. Assessments are done in the community health center between May and June in 2010. Medical background check was performed for each patient and clinical, laboratory. ECG criteria's are based on Sokolow - Lyon index, Modified Sokolow index, Cornell voltage-QRS duration index and RAVL criterias. LV mass index is used for ECHO diagnosis of hypertension. ECG and ECHO assessments are gathered to pool data.
Results: ECHO shows that 551 (78.5%) patients have LVH which is obviously greater in number that ECG has detected (Table 1). The number of patients having LVH detected by the modified Sokolow - Lyon index is 148 (21.1%) and is greater than that of all other ECG criteria for LVH has shown. The LVH detected by RAVL is 30 (4.3%) which is the least in number among other methods. According to echocardiography findings there is a significant difference between body mass index (BMI) and left ventricular end diastolic diameter comparing the patients having LVH or not. Age, BMI, smoking, hyperlipidemia, diastolic dysfunction are found to be outcome variables but age and BMI are found to be independent variables in patients having LVH detected by ECHO.
Discussion and Conclusion: The number of patient having LVH detected by ECHO is higher than ECG did. Thus, LVH should be assessed by ECHO. Age and BMI are the two independent variables in patients having LVH detected by ECHO.

Hypertension

PP-067

The knowledge level of hypertensive patients; do we need to do more?

Seda Karakaya, Mehmet Uzun, Gamze Genç, Gül Tuğba Öncü, Mehmet Doğan, Murat Yalçın, Ömer Yiğiner

Gülhane Military Medical Academy (GMMA) Haydarpaşa, İstanbul

Introduction: Hypertension (HT) is a worldwide disease that predisposes to many complications. The patient knowledge about HT is important because it not only increases the medicinal compliance but also makes the patients be responsible about their treatment. In this study, we evaluated the knowledge level of hypertensive patients and compared it with various parameters.
Materials and Method: The study included 150 consecutive patients (66±13 years, 73 female), who accepted to fulfill a questionnaire form, which included 18 true-or-false questions about HT and 14 multiple-choiced question about the patient profile. A nurse attended the patient to clarify the questions when necessary during the fulfilling process. Answers were analyzed both descriptively and comparatively by using SPSS 15.0.
Results: None of the patients answered all the questions correctly. Mean number of correct answers was 10,4±3,4. The number of correct answers was related to the level of education (Chi square 16,3; p=0,003), to know adverse effects of the drug (p=0,017), to read the prospectus of the drug (p=0,033). The least correctly answered question was "The cause of the majority of headaches is hypertension.", while the most correctly answered one was "Hypertension and smoking increases the risk of heart diseases."(Figure).
Discussion and Conclusion: In conclusion, the knowledge level of hypertensive patients is not at an adequate level. The patients, especially those ones with lower level of education, needs to be educated about HT. We believe that the cardiac rehabilitation units for outpatients and discharge education for inpatients should be promoted for hypertensive patients.

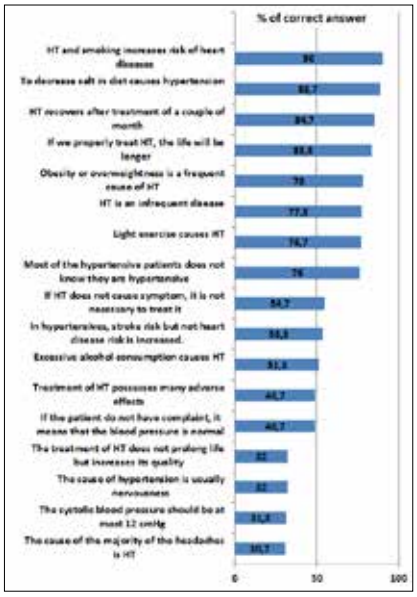


Figure 1. The % of correct answers. HT: Hypertension

Hypertension

PP-068

Comparison of aortic pulse wave velocity between the hypertensive patients with and without thorasic aort aneurysm using oscillometric method

Feyza Kurt, Nilüfer Ekşi Duran, Yetkin Korkmaz, Mustafa Serdar Yılmazer, Bekir Yilmaz Cingözbay

Maltepe University Faculty of Medicine, İstanbul

Introduction: Elevated aortic pulse-wave velocity (PWV) provides some of the strongest evidence concerning the prognostic significance of large artery stiffening and increased aortic PWV has been shown to predict cardiovascular events. The aim of the study is to compare the PWV in hypertensive patients with and without thorasic aort aneurysm (TAA). This study researched whether the aortic PWV rise in patients with TAA.

Materials and Method: Thirty-two patients hypertension with TAA (age 58,87±1,52 years) and thirty-one patients with hypertension and no aneurysm (age 51,90±1,49 years) were evaluated. Arterial stiffness was measured non-invasively in all patients using the single-point method via the Mobil-O-Graph device. Ultrasound examination was performed for the assessment of CIMT to all participants. Subjects with diabetic or known coronary artery disease were excluded from the study.

Results: There weren't significant differences between the two groups in terms of demographic characteristics and carotis intima media thickness. Aortic PWV (8,1±4.91,3 vs 7,6±1.05, p=0,11) was not significantly elevated in the TAA group compared to the control group.

Discussion and Conclusion: According to the results of this study, aortic pulse-wave velocity was not high in hypertensive patients with TAA when it was compared with hypertensive patients without aneurysm.

Hypertension

PP-069

The relationship between Vitamin D levels and nondipper hypertension

Samet Yılmaz, Fatih Şen, Özcan Özeke, Ahmet Temizhan, Serkan Topaloğlu, Dursun Aras, Mevlüt Serdar Kuyumcu, Sinan Aydoğdu

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: Nondipper hypertension is associated with increased cardiovascular morbidity and mortality. Vitamin D deficiency is associated with cardiovascular diseases such as coronary artery disease, heart failure and hypertension. We aimed to evaluate affect of vitamin D on nondipper hypertension.

Materials and Method: The study included total 200 essential hypertensive patients. Twenty-four-hour ambulatory blood pressure monitoring was performed for each patient. In addition to routine tests Vitamin D levels were analysed.

Results: Study population were divided into two groups: 100 dipper patients (mean age; 50.6±9.9 years, 54 females and 46 males) and 100 non-dipper patients (mean age; 49.2±8.2 years, 53 females and 47 males,). Clinical blood pressures was significantly higher in non-dipper hypertensives than dipper hypertensives (Systolic blood pressures 141.2±5.6 mmHg vs 139.1±6.6 mmHg, diastolic blood pressures 93.8±7.5 mmHg vs 88.4±2.6 mmHg vs 87.4±3.4, p<0.05, respectively). Non-dipper patients demonstrated lower levels of vitamin D compared with dippers (21.1±3.5 ng/ml, 31±7.1 ng/ml, p<0.001, respectively). Significant positive correlation was observed between vitamin D and the rate of nocturnal systolic and diastolic blood pressure fall (r:0.525, p<0.001 and r:0.512, p<0.001, respectively).

Discussion and Conclusion: Vitamin D levels are significantly lower in patients with nondipper hypertension than patients with dipper hypertension.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-070

Heart rate recovery is impaired in patients with beta-thalassemia major

İsa Öner Yüksel[1], Erkan Köklü[1], Erdal Kurtoğlu[1], Şakir Arslan[1], Göksel Cağırcı[1], Volkan Karakuş[2], Görkem Kuş[1], Selçuk Küçükseymen[1]

[1]Antalya Education and Research Hospital, Antalya
[2]Muğla Sıtkı Koçman Faculty of Medicine, Muğla

Introduction: Abnormal heart rate recovery (HRR) is predictive of mortality. Autonomic abnormalities in beta-thalassemia patients were reported in previous studies. However, the importance of low heart rate recovery in exercise stress test is not known in thalassemia patients.

Materials and Method: Exercise stress test was performed in 56 beta-thalassemia major (TM) patients, who were being treated in the Thalassemia Center of our hospital, along with 46 healthy volunteers as control. HRR values were recorded at 1, 2, 3, 4 and 5 min. HRR was calculated by the difference of heart rate at peak exercise and at a specific time interval following the onset of recovery.

Results: All HRR values were found lower in thalassemia major patients compared to those in the control group (Figure1, Table 1). Exercise capacity (METs) was also found low in these patients (p<0.001). Total exercise time was low in thalassemia major patients (p<0.001). Mean T2* value was 28.3±13.7 ms in TM patients on magnetic resonance imaging (MRI). In addition, there are 18 TM patients with T2* value was <20 ms.

Discussion and Conclusion: TM was independently associated with low HRR. This condition is an indicator of autonomic dysfunction in TM patients, since abnormal HRR is related with impaired autonomic response. In addition, impaired HRR may be a marker of early cardiac involvement in patients, whose T2* value is high on magnetic resonance imaging (MRI). Modifying HRR with a cardiac rehabilitation program in TM patients with impaired HRR is a field open for further investigation.

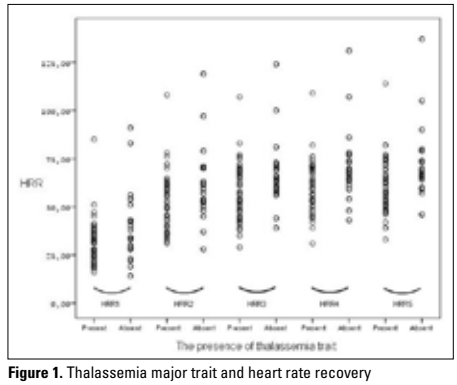


Figure 1. Thalassemia major trait and heart rate recovery

Table 1. Thalassemia major and heart rate recover relation

Parameters	Thalassemia group	Control group	P
HRR1	31 (24-36)	34 (28-51)	0.004
HRR2	50 (40.3-61)	59 (52-70)	0.002
HRR3	55 (47.3-68)	64 (59-71)	0.003
HRR4	59 (50.5-70.8)	68 (63-77)	0.001
HRR5	60 (51-72)	68 (60-79)	0.002

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-071

Comparison of arterial and venous approaches for AV junction ablation

Serkan Asil, Uğur Canpolat, Hikmet Yorgun, Cem Çoteli, Levent Şahiner, Ergün Barış Kaya, Banu Evranos, Ali Oto, Necla Özer, Kudret Aytemir

Hacettepe University Faculty of Medicine, Ankara

Introduction: This study aimed to compare the results of femoral arterial and venous approaches for AVJ ablation in AF/atrial flutter patients who have undergone pacemaker or ICD implantation at least 30 days before the procedure.

Materials and Method: Retrospective analysis of prospectively collected data was performed for a total of 53 patients (n=14 venous and and n=39 arterial approaches) in whom AVJ ablation has been performed in between January 2009 and April 2015. All pre- and post-procedural data were collected from the hospital registry and procedural notes. Statistical analysis was performed using SPSS.

Results: Mean age of the study population was 65.3±11.9 years. Of all the patients 41.5% had dilated cardiomyopathy, 37.7% had coronary artery disease, 17.0% had hypertrophic cardiomyopathy, 11.3% had valvular heart disease, and 54.7% had hypertension. The main indication for the procedure was rate control for 69.8% and inappropriate ICD shocks for 30.2% of the patients. Success rate of AVJ ablation with femoral arterial approach was significantly higher as compared to femoral vein approach (97.4% vs 71.4%, p<0.05). Complication rate was also significantly lower in femoral arterial approach compared to femoral venous approach (2.6% s 21.4%, p<0.05, respectively). All the patients had a history of hospitalization due to AF episodes before the procedure. However, none of the patients with successful AVJ ablation was re-hospitalized due to AF. Repeated hospitalization rates after AVJ ablation were similar among arterial and venous approaches. Repeated hospitalizations due to heart failure were significantly higher in patients who underwent femoral venous approach compared to femoral arterial approach (35.7% vs 12.8%, p<0.05, respectively).

Discussion and Conclusion: In patients who are appropriate candidates for catheter ablation of the AVJ, complete AV block can be achieved easily and quickly in almost all patients using transfemoral approach. Moreover, retrograde aortic approach was found as more effective and safe approach as compared to venous approach.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-072

The effect of severity of sleep apnea on cardiac autonomous function in obstructive sleep apnea syndrome

Gülay Özkeçeci, Sevinç Sarınç Ulaşlı, Önder Akci, İbrahim Ethem Dural, Alaettin Avşar, Mehmet Ünlü, Ersel Onrat

Afyon Kocatepe University Faculty of Medicine, Afyon

Introduction: Impaired autonomic cardiac function is an important consequence of obstructive sleep apnea syndrome (OSAS). These impairments are caused by hypoxia during periods of apnea. However, the impact of apnea severity on autonomic cardiac function remains unclear. The aim of the present study was to examine the effect of sleep apnea severity on autonomic functions assessed by heart rate variability (HRV) and heart rate turbulence (HRT) parameters among patients with OSAS.

Materials and Method: One hundred and six patients with OSAS and 27 healthy volunteers were enrolled. Based on respiratory disturbance index (AHI) values, obstructive sleep apnea severity was classified as follows: mild OSAS (AHI ≥5 and <15), moderate OSAS (AHI ≥15 and ≤30) and severe OSAS (AHI >30). HRV and HRT parameters were assessed via 24-hour digital Holter electrocardiogram recordings for all subjects.

Results: HRV and HRT parameters were significantly lower among OSAS patients as compared to control subjects (p<0,05). However, there were no significant differences between the three patient subgroups in terms of HRT and HRV. Correlations did emerge between AHI and RMSSD and between oxygen desaturation and TS (respectively; r=-0.22, p=0.037 and r=-0.28, p=0.025)

Discussion and Conclusion: Deterioration of HRV and HRT parameters emerged regardless of OSAS severity. Therefore, it is important patients diagnosed with OSAS be evaluated on HRT and HRV measures to detect risk of life-threatening arrhythmias.

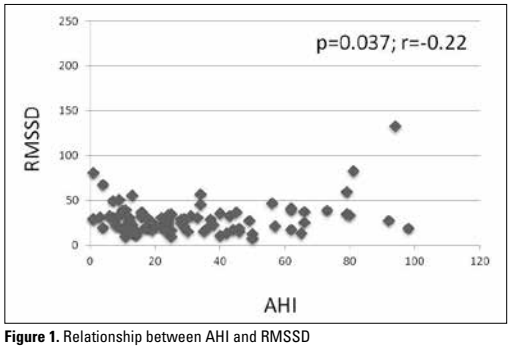


Figure 1. Relationship between AHI and RMSSD

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-073

Changing patterns of anticoagulation in patients with non-valvular atrial fibrillation in Turkey: insight from RAMSES study

İbrahim Altun[1], Edip Güvenç Çekiç[1], Nesrin Filiz Başaran[1], Özcan Başaran[1], İsmail Bolat[2], Macit Kalçık[3], Sedat Kalkan[4], Ceyhan Türkkan[5], Müjgan Tek Öztürk[6], Mehmet Hayri Alıcı[7], Mehmet Aytürk[8], Zübeyde Bayram[9], Fethi Yavuz[9], Cevat Kırma[10], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Fethiye State Hospital, Muğla
[3]İskilip Atıf Hoca State Hospital, Çorum
[4]Gönen State Hospital, Balıkesir
[5]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[6]Ankara Kecioren Education and Research Hospital, Ankara
[7]Gaziantep 25 Aralık State Hospital, Gaziantep
[8]Kartal Yavuz Selim State Hospital, İstanbul
[9]Dr. Ersin Arslan Hospital, Gaziantep
[10]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Atrial fibrillation (AF) is a frequent arrhythmia in cardiovascular practice which is shown to have a relationship with cerebrovascular thromboembolic events such as stroke. To prevent stroke in patients with AF, antithrombotic treatment options include oral anticoagulants such as vitamin K antagonists (VKA) and non-vitamin K antagonist oral anticoagulants (NOACs), and in a number of circumstances, antiplatelet agents. In this study, we aimed to compare the characteristics of non-valvular (NVAF) patients who were on VKA and NOACs.

Materials and Method: The ReAl-life Multicenter Survey Evaluating Stroke prevention strategies in Turkey (RAMSES) study was planned as a prospective, observational study and conducted in outpatient cardiology clinics. AF was classified as non-valvular in the absence of rheumatic mitral stenosis or valvular prosthesis. We enrolled a total number of 6273 patients from 57 sites. 4513 patients who were on VKA or NOACs were evaluated for the subgroup analysis.

Results: Recorded socio-demographic descriptions and comorbidities of the patients were given in the Table. Of the 6273 patients, 2173 patients (48.1%) were using VKA, 2340 patients (51.9%) were using NOACs and 1716 patients (27.55%) were not taking anticoagulant treatment. We found a correlation between educational status and being on NOAC (r=0.113, p<0.001). VKAs were more preferred in patients with history of congestive heart failure, coronary heart disease, and chronic kidney disease. However, history of bleeding was higher in patients using VKA compared to patients who were on NOACs.

Discussion and Conclusion: Preference of anticoagulant treatment has been changing from VKA to NOACs in patients with NVAF in Turkey.

Table 1. Comparison of patient characteristics NOAC vs. VKA

	VKA (n=2173)	NOAC (n=2340)	P value
Male (%)	968 (44.5)	954 (40.8)	0.01
Age (mean±SD)	68.3±10.2	70.3±10.2	0.001
Residence-rural (%)	600 (28)	703 (30.1)	0.122
Comorbidity			
Congestive heart failure (%)	497 (22.9)	442 (18.9)	0.001
Hypertension (%)	1492(68.8)	1603 (68.6)	0.898
Diabetes mellitus (%)	499 (23)	529 (22.6)	0.804
Coronary artery disease (%)	648 (29.8)	561 (24)	0.001
Chronic obstructive pulmonary disease (%)	462 (21.3)	451 (19.4)	0.103
Chronic kidney disease (%)	138 (6.4)	74 (3.9)	0.001
Creatinine Clearance (mL/min)	73.7±18.2	71.8±19.2	0.001
Bleeding history			
Major Bleeding (%)	134 (6.2)	88 (3.8)	0.001
Minor bleeding (%)	555 (25.8)	287 (12.4)	0.001
History of stroke (%)	307 (14.2)	356 (15.2)	0.333
CHA_2DS_2VASc score	3.2±1.67	3.3 ±1.52	0.035
HAS-BLED score	1.63±1.17	1.57±0.99	0.074
Duration of therapy (months)	33.9±32.5	11.5±12.8	0.001

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-074

The effect of synthetic cannabinoids on P-wave dispersion: an observational study

Murat Sünbül[1], Esra Aydın Sünbül[2], Ayşe Terzi[2], Sümeyye Çallı[2], Esra Koca[2], Rabia Çallı[2], Serhat Çıtak[2]

[1]Marmara University Faculty of Medicine, İstanbul
[2]Erenköy Psychiatry and Neurology Training and Research Hospital, İstanbul

Introduction: Synthetic cannabioids (SC) consumption has become widespread, despite law enforcement and regulatory control measures. SC may lead to increased risk of cardiovascular disease (CVD). P wave dispersion (PD) is a non-invasive marker of disorganized atrial repolarization, and was used as a predictor of the increased risk of CVD. The aim of the present study is to investigate the effect of SC on PD in patients with SC consumption.

Materials and Method: The study population included 40 patients with SC consumption and 20 age and sex matched healthy controls. The severity of addiction was detected by using addiction profile index (BAPI). PD was measured through 12-lead ECG obtained during the admission of patients.

Results: Age and sex distribution were similar between two groups (26.9±7.3 years vs 26.2±6.4 years and 39 male vs 19 male, p=0.687, 0.611, respectively). Mean duration of SC consumption was 1.8±0.7 years. Mean BAPI score of patients with SC consumption was 13.8±2.8. Patients with SC consumption have significantly higher PD value than controls (41.2±13.8 ms vs 32.3±7.6, p=0.002). BAPI score was significantly correlated with PD value (r=0.528, p=0.003). Among PD value, age and heart rate that were included in the linear regression model, PD value was shown to be significantly and independently affecting BAPI score (r2 of the model=0.298; p=0.025).

Discussion and Conclusion: Our results demonstrated that SC consumption may lead to increased risk of CVD through prolonged PD. A simple and cheap ECG may help the clinician to assess cardiovascular risk in patients with SC consumption.

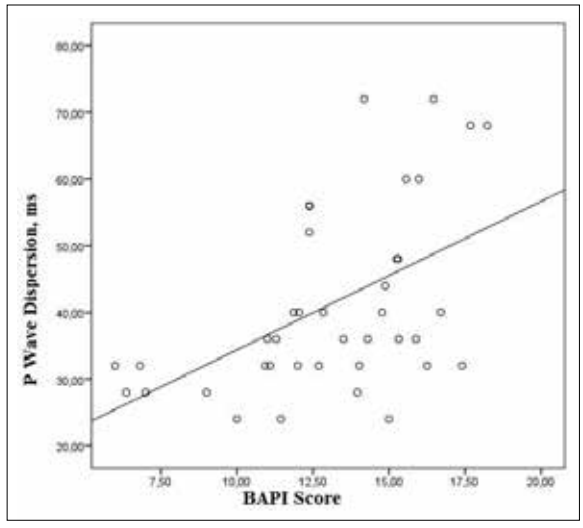


Figure 1. Correlation analysis (r=0.528, p=0.003)

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-075

Effect of chronic toluen exposure on heart rhythm parameters

Şükrü Arslan, Işıl Uzunhasan, Betül B. Koçaş, Gökhan Çetinkal, Cüneyt Koçaş, Okay Abacı, Mustafa Yıldız, Cengiz Çeliker, Cengizhan Türkoğlu

İstanbul University Institute of Cardiology, İstanbul

Introduction: Toluene is an aromatic hydrocarbon found in glues, cements and organic solvents. Toluene is extensively used in a variety of industrial processes, and an increasing number of workers are exposed to its vapour. Cardiac abnormalities, which have been reported in association with toluen exposure(with toxic doses) are atrioventricular conduction abnormalities, sinus bradycardia, ventricular tachycardia, recurrent myocardial infarction,dilated cardiomyopathy and coronary vasospasm.In the present study, we aimed to investigate the effects of chronic toluene exposure on cardiac rhythm.
Materials and Method: In this study, 40 workers in polishing industry with more than 3 months exposure to a mixture of organic solvents including toluene and 38 control subjects working in other fields matched by age, sex, smoking, habits, and living accomodation were investigated. 12 lead surface ECG and 24h Holter recordings were performed to determine QRS duration, PR duration, P wave dispersion, corrected QT dispersion and heart rate variability (HRV) parameters (SDNN (standard deviation of all normal-to-normal (NN) intervals), SDANN (Standard Deviation of the Averages of NN Intervals in All 5-Minute Segments), RMSDD (the root mean squared differences of successive NN intervals), HRV Triangular İndeks, LF (Low frequency), HF (High frequency), LF/HF). Also hyppuric acid levels were measured for confirmation of toluene exposure.
Results: Maximum heart rate was significantly lower in toluene exposed group compared to control group (130,5±15,1vs. 138,6±16,0; p=0,02). dLF and dLF/dHF were also significantly lower in toluene exposed group (43,6±7,2, vs. 50,7±10,5, p=0,01; 1,4±0,4 vs. 2,2±1,0; p<0,01 respectively). Mean dHF, RMSSD, and SDANN values were significantly higher in toluene exposed group (32,8±8,1 vs. 25,4±8,2; p=<0,01; 74,0±46,1 vs. 60,3±59,4; p=0,02; 149,5±77,0 vs. 108,9±43,2; p=0,01 respectively). Minimum heart rate was significantly higher in patients with higher urine hippuric acid levels (>1600 mg/dl) compared with patients who had normal urine hippuric acid levels (52,8±5,3 vs. 47,1±6,3; p=0,02). nHF, SDNN,and RMSSD values were significantly lower in patients with higher urine hippuric acid levels compared with patients who had normal urine hippuric acid levels (28,5±4,0 vs. 34,0±8,6; p=0,01; 123,8±28,9 vs. 173,9±43,6; p=<0,01; 50,6±19,6 vs. 80,8±49,5; p=0,02). An intermediate positive correlation was detected between urine hyppuric acid levels and minimum heart rate (r:329; p=0,03). Also, there was an intermediate negative correlation between exposure duration of toluene and RMSSD (r:-451; p<0,01) and SDNN (r:-430; p<0,01).
Discussion and Conclusion: This study implicates that chronic toluene exposure disturbs cardiac autonomy especially by supressing sympatic activity, and with increasing exposure duration parasympathic supression also occurs. We also demonstrated that chronic toluene exposure was not associated with major cardiac arryhtmias and rhythm conduction system disorders.

Table 1. Speckle tracking echocardiography parameters

	Kontrol n:20	VEV hasta grubu n:21	p değeri
LV circ mid	-22,70 ± 6,736	-17,67±6,036	0,016
LV circ apikal	-22,05 (-35,-14)	-18,67 (-31,-11)	0,056
LV circ bazal	-22,05±5,520	-17,19±4,501	0,004
LV circ global	-22,30 (-34,-14)	-17,71 (-26,-11)	0,007
LV long apikal 2	-19±3,569	-14,43±4,501	0,001
LV long apikal 4	-20,65 (-25,-16)	-14,14 (-27,-7)	<0,001
LV long apikal 3	-19,25 (-30,-15)	-15,71 (-28,-8)	0,002
LV long global	-19,4±1,875	-14,9±4,11	<0,001
LA global long (res)	41,9±10,052	33,52±9,943	0,011
PA lateral (ms)	57,15±6,64	79,71±15,89	<0,001
PA septal (ms)	47,35±6,06	59,67±12,80	<0,001
PA trikuspit (ms)	37,0±5,62	48,57±12,64	0,001
İnteratrial geçikme (ms)	20,15 (14-27)	31,33 (15-66)	<0,001
LA intraatrial geçikme (ms)	9,8±2,58	19,0±7,28	<0,001
RA intraatrial geçikme (ms)	10,35 (8-15)	12,62 (5-48)	0,692

Table 2. Effect of ventriculoatrial conduction

	VA iletisi olmayan n:10	VA iletisi olan n:11	p değeri
LV global circ strain	-18,30±5,14	-17,18±4,45	0,599
LV global long strain	-15,50±4,57	-14,36±3,77	0,541
PALS	33,0±9,38	34,0±10,86	0,825
LA intraatrial geçikme (ms)	21,0±8,38	17,18±5,94	0,24
RA intraatrial geçikme (ms)	11,90±4,36	13,27±11,95	0,736
İnteratrial geçikme (ms)	32,40±10,94	30,36±13,76	0,714

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-076

Eveluation of left atrial and ventricular mechanics in patients with frequent RVOT VES and Pef according to ventriculoatrial conduction

Ahmet Seyfeddin Gürbüz[1], Mustafa Akçakoyun[1], Semi Öztürk[2], Süleyman Çağan Efe[1], Taylan Akgün[1], Alev Kılıçgedik[1], Serdar Demir[1], Mehmet Emin Kalkan[1], Arzu Kalaycı[3], Ahmet Güler[1], İbrahim Akın İzgi[1], Cevat Kırma[1]

[1]Kartal Kosuyolu Education and Research Hospital, İstanbul
[2]Haseki Training and Research Hospital, İstanbul
[3]Eskişehir Yunusemre Hospital, Eskişehir

Introduction: Aim of this study is to compare left atrial deformation and atrial electromechanical delay time of patients with frequent RVOT VES and preserved ejection fraction (Pef) with control group and determine the relationship between these parameters and left ventricular diastolic function, deformation parameters, retrograde ventriculoatrial conduction.
Materials and Method: 21 (8 male) patients with Pef and more than 10000 RVOT VES on 24 hours Holter monitoring who underwent electrophysiological study/ablation and 20 healthy age and sex matched control subjects were examined with transthoracic echocardiography.
Results: Left ventricular global longitudinal and circumferential strain were significantly impaired in VES group compared with control group (p<0,001; p:0,007). Similarly, peak atrial longitudinal strain (PALS) was significantly impaired in VES group (p:0,011). Interatrial and left atrial conduction delay time were significantly different between groups (p<0,001, p<0,001), however right atrial conduction delay time was not different.In both two groups left ventricular global circumfrential strain is mildly correlated with peak atrial longitudinal strain (PALS) (r:-0,32, p:0,04), interatrial conduction delay time (r:0,45, p:0,003), left atrial conduction delay time (r:0,469, p:0,002). Left ventricular global longitudinal strain is mildly correlated with interatrial conduction delay time (r:0,31, p:0,49), left intratrial conduction delay time (r:0,38, p:0,013), PALS (r:-0,334, p:0,033). PALS and left intraatrial conduction delay time is mildly correlated (r:-0,36, p:0,020).
Discussion and Conclusion: Our study showed significant impairment of left ventricular global longitudinal and circumferential strain and PALS and also significant interatrial and left intraatrial conduction delay time prolongation in VES group. Despite, these impaired functions were not related with left ventricular diastolic dysfunction and retrograde ventriculoatrial conduction.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-077

The Relationship between osteopontin and atrial fibrillation recurrence after cryoballoon catheter ablation

Hacı Murat Güneş[1], Ekrem Güler[1], Gamze Babur Güler[1], Günhan Güntekin Demir[1], Filiz Kızılırmak[1], Taylan Akgün[2], Mehmet Onur Omaygenç[1], Bilal Boztosun[1], Fethi Kılıçaslan[1]

[1]İstanbul Medipol University, İstanbul
[2]Kartal Koşuyolu Education and Research Hospital, İstanbul

Introduction: Atrial fibrillation (AF) is the most common sustained arrhythmia associated with increased morbidity and mortality. Atrial fibrosis is associated with increased recurrence following AF catheter ablation. Osteopontin is a multifunctional molecule involved in physiopathologic conditions including fibrosis. In this study we aimed to investigate the relationship between osteopontin levels and AF recurrence after AF cryoablation.
Materials and Method: The study population consisted of 60 patients with paroxysmal (n:47) and persistent (n:13) AF. Osteopontin levels were measured both before and 6 months after AF ablation with cryoballoon.
Results: Preoperative and postoperative osteopontin levels did not differ between types of AF (p:0,335, p:0,493, respectively). Postoperative osteopontin levels were increased significantly compared to preoperative osteopontin levels (32,18 vs. 15,58; p:<0,001). Univariate analyses revealed that left atrial diameter, AF type, preoperative osteopontin levels were significantly associated with recurrence after AF ablation (p:<0,05). An age adjusted multivariate logistic regression analysis was performed to evaluate the independent risk factors of AF recurrence. Among these, AF type (β:2,211 p:0,004, OR:9,124, 95% CI [2,026-41,094]) was found to be the most important independent variable of AF recurrence. Preoperative osteopontin levels were also determined as an independent risk factor for the recurrence of AF (β:0,059, p:0,048, OR:1,061, 95% CI [1,001-1,125]).
Discussion and Conclusion: Persistent AF and elevated preoperative levels of osteopontin in patients undergoing cryoballoon AF ablation are predictors for AF recurrence. Association of a biochemical marker with recurrence following ablation may be beneficial for selecting appropriate patient population for cryoballoon procedure and assessing long-term procedural success.

Table 1. Multivariate analysis of ind. predictors of AFrec

	β	p	OR	95% CI
AF type	2.211	0.004	9.124	2.026-41.094
Preop Osteopontin	0.059	0.048	1.061	1.001-1.125

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-078

Is cardiac memory whether sympathetic T wave or parasympathetic T?

Sinan İşcen, Salim Özenç

Diyarbakır Military Hospital, Diyarbakır

Introduction: Recently studies, the reversible repolarization ECG changes including cardiac memory, have reported that causal link between a local cardiac sympathetic disruption and the reversible TWI have been presented (sympathetic T wave). Aim of the our study, cardiac memory, that is one of these T wave changes, is whether sympathetic T wave evaluated with indices of HRV such as SDNN, confirming that sympathovagal balance can be the modulator of ventricular repolarization changes.
Materials and Method: During a 1-year period, 30 patients with overt posteroseptal accessory pathways underwent successful ablation at the our center. ECG and 24-hour holter ECG records that were taken over the the first month postablation and the sixth month postablation compared with those were taken preablation for evaluated sympathovagal balance.
Results: In ours study, the main findings in the time domain analysis is a significant rise in values of SDNN (p:0.015),RMSSD (p:0.012) and PNN50 (p:0.048) during the first month. But one month after ablation came back preablation levels. Our results displayed a rise in the activity in the low frequencies (LF) (p<0.001) and high frequencies(HF) (p<0.001) with ablation. However, contrary to previously studies, the parasympathetic contribution to the heart was more clear.
Discussion and Conclusion: This is the first study to show significant changes in HRV parameters after cardiac memory due to WPW ablation depending on the completeness of normalizasion of the cardiac memory. In our study,patients with cardiac memory experience as a codominance pressure of the parasympathetic nervous and sympathetic, but the parasympathetic contribution to the heart was more clear rather than changes in the expression of local cardiac sympathetic disruption.

Table 1. Comparison of heart rate variability

	preablation	postablation first month	postablation sixth month	p
SDNN(ms)	32,23±12,39	41,53±12,13	34,60±13,39	0,015
RMSSD(ms)	25,03±13,35	34,16±10,08	32,00±12,74	0,012
HF(ms2)	33,80±10,45	46,90±12,04	38,80±11,16	<0,001
LF(ms2)	38,36±10,10	52,23±13,84	50,20±14,50	<0,001
Total power (ms2)	1172,86±362,95	1627,43±418,13	1346,36±387,52	<0,001
HR(bpm)	69,17±6,83	68,67±6,98	69,47±6,61	>0,05
LF/HF	1,30±0,75	1,12±0,25	1,37±0,52	>0,05
PNN50(%)	39.53 ±8.32	51.86 ±12.84	38.42±9.31	0.048

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-079

The effect of colchicine use on quality of life after pulmonary vein isolation

Alim Erdem, Serkan Öztürk, Fatma Hızal Erdem, Osman Yıldırım, Suzi Selim Ayhan, Mehmet Fatih Özlü, İbrahim Dönmez, Mehmet Yazıcı

Abant İzzet Baysal University Bolu Faculty of Medicine Health Research and Application Hospital, Bolu

Introduction: Colchicine is a microtubule depolymerizing agent which has anti-inflammatory, anti-arrhythmic and anti-anginal effects. It was previously shown that colchicine may have a role in prevention of atrial fibrillation (AF) recurrences after ablation procedure. Most of patients have transient and intermittent chest discomfort after the first three months of the ablation procedure. This study aimed to investigate the effect of colchicine use on quality of life after pulmonary vein isolation (PVI) for AF.
Materials and Method: This study included 54 consecutive patients with symptomatic, drug-resistant, non-valvular paroxysmal AF who underwent PVI with radiofrequency catheter ablation. Patients were randomly assigned to colchicine (n=30) and control (n=24) groups. In colchicine group, patients were treated with 0.5 mg colchicine/day for 3 months after the procedure. The 26-item short form of the World Health Organization quality of life scale was used in order to assess the quality of life 3 months after the procedure.
Results: Baseline and clinical characteristics of the two groups were well balanced. The incidence of AF in colchicine group was lower than the control group, however the difference was statistically nonsignificant (p>0.05). Quality of life scores were significantly poorer in the control group than colchicine group (p0.05).
Discussion and Conclusion: The use of colchicine after PVI for AF may increase quality of life. Colchicine may be used for its anti-anginal effect after AF ablation procedure.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-080

Neutrophil to lymphocyte ratio (NLR) predicts appropriate shocks in ischemic and non-ischemic CMP patients with implanted ICD for primary prevention

Fatih Mehmet Uçar[1], Esra Gücük İpek[2], Burak Açar[2], Murat Güİ[2], Serkan Çay[2], Serkan Topaloğlu[2], Dursun Aras[2],

[1]Denizli State Hospital, Denizli
[2]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: Implantable cardioverter-defibrillator (ICD) reduces mortality in patients with heart failure and reduced left ventricular function. There were clinical studies investigating the association of clinical and haematological parameters and appropriate ICD Shocks. The aim of this study was to investigate whether an enflamatuar marker of NLR (Neutrophil to lymphocyte) predicts appropriate ICD shocks in non ischemic cardiomyopathy (CMP) patients.
Materials and Method: We examined 169 HF patients (mean age 57 years; %79,3 male) who underwent primary prevention of defibrillator implantation. Serum WBC levels were measured before ICD implantation. The primary endpoint was appropriate ICD therapy [either appropriate shock or (ATP) antitachycardia pacing].
Results: Over a median follow-up period of 43 months (Range 7-125). 62 (36,7%) patients experienced appropriate ICD shocks or ATP. The baseline NLR levels were significantly higher in patients that had appropriate ICD shock (2,47 (1.81-3.16) vs. 3,47 (2.5-4.88) p<0.001). NLR was predictor of appropriate ICD activation and remained significant when entered into multivariable analysis. (HR:1.41; 95% CI:0,65 to 2,17; p<0.001).
Discussion and Conclusion: NLR levels were associated with higher risk of appropriate ICD activation. The use of this marker may be useful in identifying individuals most likely to benefit from this costly intervention, and more specifically, in the identification of a group at lower risk in whom ICD implantation may be deferred.

Table 1. Baseline characteristics of the patients

	Shock (-) (n=107)	Shock (+) (n=62)	p
Male	80.4% (86)	77.4% (48)	0,65
Age	58 (52-67)	56 (47-65)	0,15
HT	54.2% (58)	54.8% (34)	0,94
DM	23.4% (25)	19.4% (12)	0,54
Smoke	14% (15)	16.1% (10)	0,71
Sist.	110 (100-130)	110 (100-126.3)	0,69
Diast.	75 (70-80)	77.5 (70-80)	0,77
Heart Rate	72.5 ± 11.9	73.9 ± 13.1	0,46
EF	30 (25-33)	28 (25-30)	0,84
ACE-ARB	89.7% (96)	87.1% (54)	0,6
Spironolak	48.6% (52)	54.8% (34)	0,43
Digoxin	28% (30)	27.4% (17)	0,93
Diüretik	73.8% (79)	66.1% (41)	0,29
Statin	42.1% (45)	25.8% (16)	**0,03**
Beta-bloker	96.3% (103)	96.8% (60)	1

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-081

Increased serum uric acid level is associated with cardioembolic stroke in patients with paroxysmal atrial fibrillation

Nermin Bayar[1], Şakir Arslan[1], Göksel Çağırcı[1], Erkan Köklü[1], İsa Öner Yüksel[1], Selçuk Küçükseymen[1], Serkan Çay[2]

[1]Antalya Education and Research Hospital, Antalya
[2]Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: Since atrial fibrillation (AF)-related strokes have a worse prognosis, it is important to recognize AF patients with high stroke risk. In this study, we aimed to investigate the value of serum uric acid levels in predicting stroke and transient ischemic attacks among patients with paroxysmal AF.
Materials and Method: We enrolled patients with paroxysmal AF who applied to and diagnosed in our clinic between 2012 and 2014. Clinical and demographic features of the patients were recorded, CHA_2DS_2VASC scores were calculated. Electrocardiographic and transthoracic echocardiographic evaluation were performed. Uric acid levels were also recorded from biochemisty results. Patient groups with and without history of stroke and transient ischemic attack were compared for their serum uric acid levels.
Results: A total of 180 patients were enrolled in this study of whom 62 had a history of ischemic stroke/transient ischemic attack (symptomatic group). CHA_2DS_2VASC score in symptomatic group was 5.0±1.2 while it was 2.6±1.4 in asymptomatic group. It was also shown that uric acid levels were higher in symptomatic group when compared to asymptomatic group (7.64±1.12 mg/dl vs 5.06±1.16 mg/dl, p<0.001, respectively). Multivariate analysis revealed that serum uric acid level higher than 6.35mg/dl was independently associated with having a history of stroke/transient ischemic attack.
Discussion and Conclusion: There is an association between high uric acid levels and stroke/transient ischemic attack among patients with paroxysmal AF. Therefore, assessment of uric acid levels in addition to CHA_2DS_2VASC score might be useful in patients with paroxysmal AF to select patients with higher risk of stroke/transient ischemic attack.

Table 1. Evaluation factors affecting stroke/TIA history

Variable	OR (95% CI)	P value
SUA 7.6 35mg/dl	74.77 (15.83-353.20)	<0.001
DM	1.33 (0.24-7.30)	0.745
HT	0.31 (0.04-2.34)	0.256
HL	0.76 (0.15-3.98)	0.749
>65 years	1.66 (0.35-7.88)	0.524
Smoking	0.46 (0.07-2.91)	0.410
Male sex	1.93 (0.39-9.52)	0.417

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-082

Evaluation of right ventricular function using tissue Doppler systolic velocity in patients who experienced syncope in head-up tilt tabletest

Sadık Volkan Emren, Uğur Kocabaş, Ersin Şimşek, Fatih Levent

İzmir KÇÜ Atatürk Training and Research Hospital, İzmir

Introduction: Vasovagal syncope, which is the most common cause of syncope, is characterized by an increase and instability in sympathetic and parasympathetic activity. The increase in sympathetic activity causes an increase in cardiac contractions. The present study evaluated tissue Doppler s velocity as the measure of increase in myocardial contraction in patients who experienced vasovagal syncope during head-up tilt test.
Materials and Method: Patients, who experienced syncope between January 2012 and March 2014, were included in the study. The patients underwent head-up tilt testing followed by transthoracic echocardiography (TTE).
Results: A total of 89 patients were evaluated in this study. Fifty patients experienced syncope during head-up tilt testing. There was no significant difference between patients, who experienced syncope versus who did not, in terms of gender, age, mitral lateral annular systolic (s) velocity, and septal annular systolic (s) velocity (p>0.05). However, tricuspid valve lateral annular systolic (s) velocity was higher in patients, who experienced syncope (17±2.7 versus 15±3.0, =0.003). Area under the curve for the diagnosis of syncope using the right venticle s' velocity is 0.704 (95% confidence interval:0.588 to 0.819 p:0.001)
Discussion and Conclusion: Right ventricular contraction is more powerful in patients who experience syncope during head-up tilt test. This is reflected by an increase in tissue Doppler systolic velocity on echocardiography, which can contribute to the diagnosis of vasovagal syncope.

Table 1. Syncope types

Syncope type	N,(%)
Mixed syncope	20 (40%)
Cardioinhibitor syncope	20 (40%)
The vasodepressor syncope	10 (20%)

N,(%):Number,percentage

Table 2. Differences of patients

	Syncope positive n:39	Syncope negative n:50	P
Women n,(%)	17 (44%)	22 (44%)	0.969
Age years (n±SD)	26±12	26±10	0.402
Left ventricular Lateral s' cm/sn (n±SD)	14±3.8	13±3.6	0.625
Septal s' cm/sn (n±SD)	11±3.7	10±1.8	0.980
Right ventricular lateral s' cm/sn (n±SD)	17±2.7	15±3	0.003

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-083

The drug therapy choices of maternal supraventricular tachycardia in pregnant patients in emergency room

Ersin Sarıçam, Mustafa Özkan, Nadir Barındık

Koru Ankara Hospital, Ankara

Introduction: Acute supraventricular tachyarrhythmia (ASVT) in pregnancy is very important problem because of impairing of maternal and fetal blood circulation. Adenosine is first choice in such patients (ACC / AHA class I). If adenosine treatment fails, other antiarrhythmic strategies may be need and decide in terms of benefit-to- harm ratio. In this study, 18 pregnant women admitted to diagnose with supraventricular tachyarrhythmia were analyzed in terms of drug therapy choices.
Materials and Method: We analyzed 18 pregnant women patients. The electrocardiographic diagnosis were atrioventricular nodal reentrant tachycardia (13 patients), atrial tachycardia (5 patients). The patients' ages were between 21 to 42 years. In emergency room, If vagal maneuvers failed, firstly intravenous adenosine was given. This drug was effective in 12 patients. Unsuccessful 6 (all with AVNRT rhythm) patients took intravenous metoprolol, secondly. Two patients results were successful. Rest other patients (4 patients) took intravenous verapamil.
Results: Intravenous adenosine was effective in 12 patients, but these patients suffered chest pain and or dyspnea. Unsuccessful 6 (all with AVNRT rhythm) patients took intravenous metoprolol, secondly. Two patients result were successful, but severe hypotension developed on unsuccessful 4 patients. Rest other patients (4 patients) took intravenous verapamil. No side effect developed none of the verapamil group.
Discussion and Conclusion: Supraventricular tachyarrhythmia in pregnancy can be dangerous important problem in terms of maternal and fetal circulation. If non-invasive maneuvers fail, adenosine should be the first-line agent for treatment in pregnancy. If adenosine resistant arrhythmia, verapamil may be a good choice instead of metoprolol in emergency condition, because of less adverse hemodynamic effect.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-084

Cryptogenic ischemic stroke and silent atrial fibrillation: can we predict?

Mustafa Karaca[1], Deniz Aytekin[2], Aslı Köşdereliođlu[3], Muhteşem Gedizlioğlu[3]

[1]İzmir Atatürk Training and Research Hospital, İzmir
[2]Medikalp Heart Disease Clinic, İzmir
[3]İzmir Bozyaka Training and Research Hospital, İzmir

Introduction: Atrial fibrillation is responsible for up to one-third of ischemic strokes and associated with silent cerebral infarctions and transient ischemic attacks (TIAs). The self-terminating and often asymptomatic nature of paroxysmal atrial fibrillation (PAF) may lead to underdiagnose. We suggest that a significant proportion of these unexplained strokes or TIAs can be related with undiagnosed PAF. Although the documentation of AF is crucial; it requires long term rhythm monitoring which can be practically impossible. Any method that predicts the stroke or unmasks the silent PAF would contribute to the treatment of ischemic stroke. Interatrial conduction time (ICT) has been shown to be associated with intermittent atrial fibrillation.
Materials and Method: In this study, we evaluated the value of interatrial conduction time detected by transthoracic echocardiography (TTE) in normal population and in patients with cryptogenic ischemic stroke to predict PAF. Patients with atypical symptoms admitted to cardiology clinics without any risk factor for cardiac disease and found to be normal constituted group 1. The patients with cryptogenic ischemic stroke and with normal left ventricular function without valvular disease are included in group 2. Age, gender, weight, height, echocardiographic parameters and interatrial conduction time were compared between groups. The beginning of the P wave was marked in modified lead DI, in which the right arm electrode was attached the top right of the manubrium and the left arm electrode in the fifth intercostal space at the right parasternal line (Lewis lead). The last atrial activity was marked as the top of the A wave trace which was obtained from left atrium free wall next to mitral annulus with tissue Doppler record (Figure 1).
Results: 63 and 64 subjects were included in group 1 and 2, respectively. Two groups were similar according to age and gender. Among the parameters studied, left atrial diameter and height of the patients were significantly higher in group 2 (38±4 vs 40±2 years, p<0,001 and 163±9 vs 167±9 cm p=0,027, respectively) ICT was significantly higher in group 2, (118±13 vs 131±16 msec, respectively, p<0,000).
Discussion and Conclusion: Although this study was not designed to reveal the relationship between PAF and ICT, it showed an association between ICT and stroke. Whether the prolongation of ICT can predict intermittent AF remains unclear. But this technique can be applied widely and lead the clinicians to appropriate therapy.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-085

EuroSCORE II predicts postoperative atrial fibrillation after elective isolated coronary artery bypass surgery

Veysel Oktay

İstanbul University Institute of Cardiology, İstanbul

Introduction: In this study we aimed to investigate the role of EuroSCORE II for the prediction of postoperative atrial fibrillation (POAF) after CABG.
Materials and Method: 113 patients who underwent elective isolated CABG in our institute between January 2014 and December 2014, were included in this study. Patients were divided into two groups (Group 1: Patients developed POAF; Group 2: Patients remained in sinus rhythm) according to development of POAF. The association of EuroSCORE II and POAF in addition to other clinical parameters were evaluated between the two groups retrospectively.
Results: POAF was developed in 37 patients (%32) and 76 patients were remained in sinus rhythm (%68). In group 1, hematocrit levels were lower than group 2 (37±5 vs. 40±5 p=0,012) and patients in group 1 were significiantly older than group 2 (65±7 vs. 59±8 p<0,001). EuroSCORE II levels were higher in patients group 1 [1,62 (0.55-5.08) vs. 0,83 (0,50-5,87) p<0.001]. In multivariate logistic regression analysis EuroSCORE II was found the only independent predictor of POAF (odds ratio (OR): 0.034, %95 confidence interval (CI) 0.615-1.626; p<0.001).
Discussion and Conclusion: EuroSCORE II is an useful predictor of POAF after elective isolated CABG.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-086

Uric acid predicts appropriate shocks in CMP patients with primary prevention ICD's

Fatih Mehmet Uçar, Esra Gücük İpek, Burak Açar, Murat Gül, Serkan Çay, Serkan Topaloğlu, Dursun Aras

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: Implantable cardioverter-defibrillator (ICD) reduces mortality in patients with heart failure and reduced left ventricular function. There were clinical studies investigating the association of clinical and haematological parameters and appropriate ICD Shocks. The aim of this study was to investigate whether an oxidative stress marker of Uric acid predicts appropriate ICD shocks in ischemic and non ischemic cardiomyopathy (CMP) patients.
Materials and Method: We examined 169 HF patients (mean age 57 years; 79,3% male) who underwent primary prevention of defibrillator implantation. Serum uric acid and WBC levels were measured before ICD implantation. The primary endpoint was appropriate ICD therapy (either appropriate shock or antitachycardia pacing).
Results: Over a median follow-up period of 43 months (Range 7-125). 62 (36,7%) patients experienced ap-

propriate ICD shocks. The baseline Uric Acid levels were significantly higher in patients that had appropriate ICD shock (5.4 mg/dl (4.8-6.68) vs. 7.8 mg/dl (6.6-9) p<0.001). Uric acid was a predictor of appropriate ICD activation and remained significant when entered into multivariable analysis (hazard ratio 1.83, 95% confidence interval 1.110–2,560, p<0.001) and In ROC analysis uric acid >6.5 mg/dl is 79% sensitive and 74% specific for appropriate ICD shocks.

Discussion and Conclusion: Uric acid levels were associated with higher risk of appropriate ICD activation. The use of this marker may be useful in identifying individuals most likely to benefit from this costly intervention, and more specifically, in the identification of a group at lower risk in whom ICD implantation may be deferred.

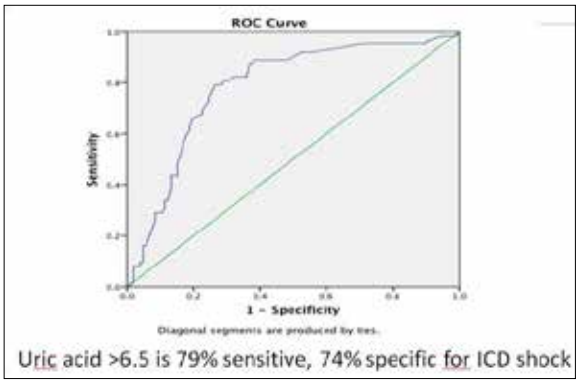


Figure 1. ROC curve analysis of UA for ICD shock

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-087

Appropriateness of rivaroxaban use in patients with non-valvular atrial fibrillation: results from the RAMSES Study

Özcan Başaran[1], Edip Güvenç Çekiç[1], Nesrin Filiz Başaran[1], Mehmet Tekinalp[2], Onur Taşar[3], Ahmet İlker Tekkeşin[4], Sabri Seyis[5], Gökhan Gözübüyük[6], Arif Arısoy[7], İdris Pektaş[8], Cevat Kırma[9], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Kahramanmaraş Necip Fazil State Hospital, Kahramanmaraş
[3]Elazığ Training and Research Hospital, Elazığ
[4]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[5]Mersin Private Dogus Hospital,Mersin
[6]Malatya State Hospital, Malatya
[7]Gaziosmanpaşa University Faculty of Medicine, Tokat
[8]Mersin University Faculty of Medicine, Mersin
[9]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Non-vitamin K antagonist oral anticoagulants (NOACs) were introduced as alternatives to vitamin K antagonists in patients with non-valvular atrial fibrillation. Rivaroxaban is the second introduced and the only once-daily drug of NOACs. Two different dosage forms of rivaroxaban; 2.5 mg and 5 mg are currently available. The lower dose of this drug should only be spared for patients with renal insufficiency. The purpose of the present study was to demonstrate the current status of rivaroxaban use in patients with NVAF.

Materials and Method: RAMSES (ReAl-life Multicenter Survey Evaluating Stroke Prevention Strategies) study is an observational, multicenter, nationwide, prospective survey of the NVAF patients. 942 patients from RAMSES study who were on rivaroxaban therapy included in this study. Cockroft-Gault formula derived creatinine clearance was used to define inappropriate use of the drug with a cut-off value of 50 ml/min.

Results: Of the 942 patients who were on rivaroxaban therapy, 20 mg was prescribed in 609 patients (64.6%) and 15 mg was prescribed in 333 patients (35.4%) (Table). After excluding 40 patients with missing data, 308 patients on low dose and 594 patients on high dose rivaroxaban were analysed for appropriate use. Patients using the lower dose of rivaroxaban were older and had higher CHA_2DS_2VASc and HASBLED scores compared to patients using higher dose of rivaroxaban. Our analysis showed that low-dose rivaroxaban was not appropriate in 270 patients (%87.6) and lower dosage could be more convenient in 53 (8.9%) patients who were on high dose rivaroxaban.

Discussion and Conclusion: Oral anticoagulant therapy is a double-edged sword, it reduces the risk of thrombotic events but increases the risk of hemorrhage. The reason of higher inaccurate prescription incidence of rivaroxaban should be discussed in detail.

Table 1. Comparison of rivaroxaban doses

	Rivaroxaban 15 (n=333)	Rivaroxaban 20 mg (n=609)	P value
Male (%)	121 (36.3)	235 (38.6)	0.527
Age (mean±SD)	74.7 ± 9.2	68.2 ± 9.7	0.001
Smoking (%)	37 (11.1)	103 (16.9)	0.017
Alcohol (%)	5 (1.5)	18 (3)	0.191
CHA_2DS_2VASc (mean±SD)	3.93 ± 1.49	3.09 ± 1.51	0.001
HAS-BLED (mean±SD)	1.74 ± 1.07	1.46 ± 0.91	0.001
History of major bleeding (%)	5 (1.6)	26 (4.3)	0.33
History of minor bleeding (%)	49 (15.3)	86 (14.3)	0.696

Coronary artery disease / Acute coronary syndrome

PP-088

Distal region of a myocardial bridge is still protected aganist development of atherosclerosis even in patients with high framingham risk score

Nurullah Çetin[1], Selcen Yakar Tülüce[2], Kamil Tülüce[1], Veysel Yavuz[3], Onur Dalgıç[1], Ferhat Özyurtlu[4], Caner Topaloğlu[1], Hakan Tıkız[5],

[1]Karşıyaka State Hospital, İzmir
[2]İzmir Atatürk Training and Research Hospital, İzmir
[3]Akhisar State Hospital, Manisa
[4]Grand Medical Hospital, Manisa
[5]Celal Bayar University, Faculty of Medicine, Manisa

Introduction: Myocardial bridge (MB) is the most common form of congenital coronary artery anomalies whereby a segment of coronary artery is either partially or completely covered by surrounding myocardium. Myocardial bridges were reported to cause myocardial ischemia. Tendency of patients with MB to developing atherosclerosis in the proximal or distal part of to the bridged segment was presented. In this study, we investigated cardiovascular risk scores of patients with both coronary atherosclerotic disease (CAD) and a MB and assessed the association between the cardiovascular risk score and development and location of CAD in these patients.

Materials and Method: 172 patients with a MB were screened. 81 (47%) patients had both a MB and CAD. Framingham risk scores of the patients were assessed. The main angiographic evidence of a MB was accepted as the narrowing of a systolic coronary artery resulting in reduction of lumen diameter in comparison with the diastolic phase. Intracoronary 200 µg gliseriltrinitrate was administered to each patient in order to exclude coronary arterial vasospasm and better visualize and determine the severity of MB. Location of the MB, narrowing rate and associated atherosclerotic narrowing were reviewed on coronary angiography. Angiographically determined percent narrowing of the MB was calculated as {(end-diastolic diameter- end-systolic diameter)/end-diastolic diameter}x 100. Framingham coronary heart disease risk score calculater was used to estimate cardiovascular risk scores of the patients with MB. Based on the risk score profiles, patients were divided into three groups: Low; intermediate and high risk groups. Angiographic, demographic and clinical characteristics of the three groups were compared.

Results: Atherosclerotic occlusive disease was present in 81 (47%) of 172 patients and 61 patients had both CAD and a MB in the same vessel. Of the 61 patients, only one had atherosclerosis in the distal region of MB who had a high Framingham risk score. Among 61 patients with both atherosclerosis and a MB in the same vessel, 32 patients had high Framingham risk scores, 18 had intermediate, and 11 had low Framingham risk scores.

Discussion and Conclusion: As the Framingham risk score increases the propensity to develop coronary atherosclerotic disease in the proximal region of MB increases, however; the distal part of the vessel is still protected aganist development of atherosclerosis even in patients with high Framingham score.

Coronary artery disease / Acute coronary syndrome

PP-089

Predictive value of admission red cell distribution width-platelet ratio for no-reflow phenomenon in acute ST segment elevation myocardial infarction

Şevket Balta[1], Turgay Çelik[1], Mustafa Demir[1], Ali Osman Yıldırım[1], Mehmet Güngör Kaya[2], Cengiz Öztürk[1], Sait Demirkol[1], Murat Ünlü[1], Selim Kılıç[1], İbrahim Aydın[1], Atila İyisoy[1]

[1]Gülhane Military Medical Academy (GMMA) Ankara, Ankara
[2]Erciyes University Faculty of Medicine, Kayseri

Introduction: The red cell distribution width-platelet ratio (RPR), a novel inflammatory marker has currently predicted inflammation in chronic diseases. It may be associated with adverse outcomes among artery disease but its prognostic value in ST-segment elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention (pPCI) has not been fully investigated. There is no data regarding the association between RPR and in-hospital major adverse cardiovascular events (MACEs). This study evaluated the relations between pre-procedural RPR and the in-hospital and long-term outcomes in STEMI patients undergoing pPCI.

Materials and Method: This study included 580 STEMI patients (77% men, mean age=59±12 years). The patients were divided into 2 groups according to thrombolysis in myocardial infarction (TIMI) flow grades after primary PCI. No-reflow was defined as a post-PCI TIMI flow grade of 0, 1 or 2 (Group 1). Angiographic success was defined as TIMI flow grade 3 (Group 2).

Results: WBC count, neutrophil and lymphocyte percentages, RDW, platecrit, neutrophil-lymphocyte ratio (NLR) and RPR values were higher among patients with no-reflow (Figure 1). On multivariate analysis, pain to balloon time, multivessel disease, TIMI thrombus grade, tirofiban, aspirin, previous CAD, NLR, platecrit and RPR remained independent predictors of no reflow after primary PCI. Patients in no-reflow group tended to be higher percent in-hospital MACE, including nonfatal MI and cardiovacular mortality compared to those of reflow patients.

Discussion and Conclusion: Admission NLR, platecrit and RPR are independent correlates of no-reflow and in-hospital MACEs among patients with STEMI undergoing pPCI.

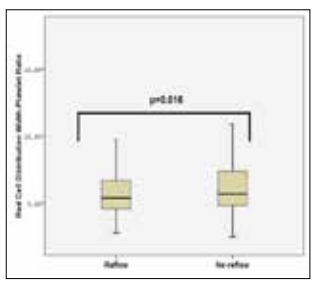


Figure 1. The RPR were higher in no-reflow group

Coronary artery disease / Acute coronary syndrome

PP-090

Predictors of no-reflow phenomenon in young patients with acute STEMI undergoing primary percutaneous coronary intervention

Turgay Çelik[1], Şevket Balta[1], Cengiz Öztürk[1], Mehmet Güngör Kaya[2], Mustafa Aparcı[3], Ali Osman Yıldırım[1], Mustafa Demir[1], Atila İyisoy[1]

[1]Gülhane Military Medical Academy (GMMA) Ankara, Ankara
[2]Erciyes University Faculty of Medicine, Kayseri
[3]Kasımpaşa Military Hospital, İstanbul

Introduction: The etiopathogenesis of no-reflow phenomenon have investigated in many studies. Many factors especially distal embolization of the plaque/thrombus following balloon inflation play a role in the development. It may be associated with adverse outcomes among artery disease. It is well-known prognostic value in ST-segment elevation myocardial infarction (STEMI). However, it has not been fully investigated in young patients. This study evaluated the relation between young patients and potential predictors of no-reflow phenomenon in STEMI patients undergoing pPCI.
Materials and Method: We examined data of consecutive 885 STEMI patients treated by primary PCI. A total of 145 young STEMI patients (90.3% men, mean age=42±3 years) admitted within 12 hours from symptom onset were included into the study. Patients were classified into 2 groups based on postintervention Thrombolysis In Myocardial Infarction (TIMI) flow grade. No-reflow was defined as a post-PCI TIMI flow grade of 0, 1 or 2 (Group 1). Angiographic success was defined as TIMI flow grade 3 (Group 2). Baseline clinical, demographical and laboratory parameters were determined in all of study group.
Results: The patients with TIMI flow grades 0-2 formed no-reflow group (n=27, 21 men, mean age=42±4 years) and reflow Group 2 (n=118, 110 men, mean age = 43±4 years), respectively. Regarding to demographical parameters there are more woman in no-reflow group compared to that of reflow group (22.2% vs. 6.8%, p=0.014). With respect to risk factors, patients with no-reflow were more diabetic and hypertensive as compared to those of patients with reflow (for diabetes, 29.6% vs. 11.0%, p=0.013 and for hypertension, 59.3% vs.27.1%, p=0.001). Pain to balloon time in no-reflow group was longer than that of the patients in reflow group (6.0 vs. 4.5 hours, p<0.001). Also no-reflow group had higher frequency of tirofiban use than that of reflow group (59.3% vs.25.4%, p=0.001). According to admission whole blood cell count results, the patients in no reflow group had significantly higher mean platelet volume(MPV) and platecrit values compared to those reflow patients (for MPV, 10.8 fl vs. 8.8 fl, p=0.001 and for platecrit, 0.26 vs. 0.23, p=0.013). On multivariate analysis female gender, pain to balloon time, high TIMI thrombus grade, tirofiban, MPV and PLR remained independent predictors of no reflow after primary PCI. Adjusted odds ratios were calculated as 13.79 for female gender (p<0.001; CI=1.88-101.26), 2.09 for pain to balloon time (p<0.017; CI=1.14-3.812, 12.29 for high TIMI thrombus grade (p=0.012; CI=1.74-86.94), 0.04 for tirofiban (p<0.001; CI=0.01-0.22), 5.19 for MPV (p<0.001; CI=2.44-11.01) and 1.008 for PLR (p=0.034; CI=1.001-1.016).
Discussion and Conclusion: A female gender, pain to balloon time, high TIMI thrombus grade, tirofiban, MPV and PLR remained independent predictors of no reflow in patients with young STEMI undergoing pPCI.

Coronary artery disease / Acute coronary syndrome

PP-091

25-Hydroxy-Vitamin D level may predict presence of coronary collaterals in patients with chronic coronary total occlusion

Yasemin Doğan, Eyüp Özkan, Bahadır Şarlı, Ahmet O Baktır, Serkan Kurtul

Kayseri Training and Research Hospital, Kayseri

Introduction: Vitamin D is a steroid hormone which has been related to increased prevelance of hypertension, left ventricular hypertrophy, heart failure, peripheral artery disease, coronary artery disease, myocardial infarction and cardiovascular mortality. In this study, we aimed to investigate whether there is an association between serum 25-Hydroxy-Vitamin D levels and development of CCC in patients with coronary CTO.
Materials and Method: A total of 188 patients with CTO at coronary angiography were included in this study. Vitamin D and parathyroid hormone (PTH) levels were measured on the day of coronary angiography. Development of collateral circulation was graded according to the Rentrop classification after coronary angiography. Then, patients were divided into two groups on the basis of CCC grades: group 1 included 68 patients (36%) with poorly developed CCC, and group 2 included 120 patients (64%) with well-developed CCC.
Results: Patients with poorly developed CCC had significantly lower serum 25-Hydroxy-Vitamin D levels compared to those with well-developed CCC, (20±3 vs. 30±6 ng/ml, p<0.0001). Multivariate logistic regression analysis provided serum 25-hydroxyvitamin D [25(OH) D] (OR 1.794, 95% confidence interval (CI) 1.453-2.216; p<0.001) as an independent predictor of poor collateral flow in patients with CTO.
Discussion and Conclusion: Low Vitamin D level is an independent predictor of poor CCC in patients with CTO.

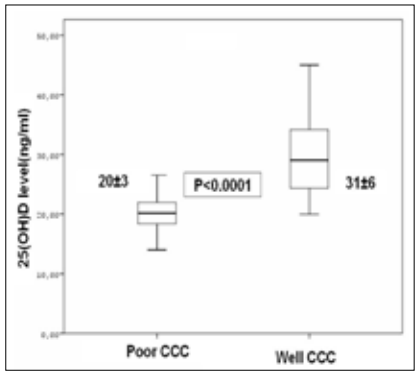


Figure 1. Vitamin D levels in poor and well developed CCC

Coronary artery disease / Acute coronary syndrome

PP-092

Clinical markers of clopidogrel resistance in patients with percutaneous coronary intervention

Osman Kayapınar, Hakan Özhan, Sinan Albayrak, Gülşah Aktüre, Hakan Tibilli, Seda Aytekin, Egemen Sayın, Esra Koç

Düzce University Faculty of Medicine, Düzce

Introduction: Antiplatelet therapy is an indispensable part of the contemporary coronary artery disease, resistance of ADP inhibitors leads to developing unwanted cardiovascular events. İn this study we aim to detection of clopidogrel resistance markers in patients undergoing percutaneous coronary procedures.
Materials and Method: The consecutive 80 patient were inrolled in the study who performed Percutan coronary intervention due to coronary artery disease and identified clopidogrel resistance at the end of the first week after coronary intervention. (38 clopidogrel resistance, 42 control) Verifynow test >208 platelet reactivity units, clopidogrel resistance and >550 aspirin reaction unit was considered aspirin resistant. 28 patients with ST elevation MI, 18 patients with non-ST elevation MI and other patients with stable coronary disease had been treated. Demographic characteristics of patients, personal and family variables, body mass index, ejektion fractions, aspirin resistance and biochemical parameters were compared.
Results: The average age of patients was 59±12 and 15 were female. Cases detected clopidogrel resistance was significantly, older. Females sex, lower hemoglobin levels, history of hypertension, and smokers were more likely. In the logistic regression analysis age [odds ratio = 1.04; 95% confidence interval (1.007-1.08), p=0.018] and hemoglobin (in the opposite direction; odds ratio = 0.79; 95% confidence interval (0656-0954), p=0.014]) significantly predicted clopidogrel resistance.
Discussion and Conclusion: Age and low hemoglobin levels are predicted to clopidogrel resistance independent of other clinical variables.

Coronary artery disease / Acute coronary syndrome

PP-093

Post-procedural left ventricular end diastolic pressure is correlated with reperfusion parameters after primary percutaneous coronary intervention

Murat Cap, Rezzan Deniz Acar, Çetin Geçmen, Tuba Unkun, Servet İzci, Çagatay Önal, Fatih Yılmaz, Ruken Bengi Bakal, Nihal Özdemir, Emrah Erdoğan

Kartal Kosuyolu Education and Research Hospital, İstanbul

Introduction: Left ventricular end diastolic pressure (LVEDP) was shown as an independent predictor of adverse outcomes in patients with ST elevation Myocardial infarction (STEMI) undergoing primary percutaneous intervention (PCI). We aimed to evaluate the relationship between the LVEDP, impaired epicardial perfusion pressure, tissue -level perfusion with myocardial blush grade by coronary angiogram and ST segment resolution by Electrocardiography (ECG), after primary PCI in patients with STEMI.
Materials and Method: The study group comprised 51 patiens (8 female, 43 male, mean age 56±8.8 years) with STEMI who successfully revascularized by primary PCI. LVEDP was monitored during the PCI procedure using a pig-tail catheter before and after primary PCI. Coronary perfusion pressure was obtained by calculating the difference between the diastolic aortic pressure and the left ventricular end-diastolic pressure. The MBG was graded using the contrast density (CD); 0 denotes no CD,1 denotes minimal CD, 2 denotes moderate CD and 3 denotes normal CD, comparable with that obtained during angiography of a non–IRA coronary artery. The ECG data describing the magnitude and extent of ST-segment elevation and deviation before and early after (60 minutes) primary PCI were analysed. Sum of the ST segment resolution (STR) is expressed as the % from baseline, and STR was calculated from the single lead showing maximum deviation. The pain-to-needle time 3,2±2,1 hours, and door-to-baloon time were <15 minutes in all patients. Thrombectomy and adjuvant glycoprotein IIb3a receptor inhibitor were used in 68% and 58% of the patients.
Results: Coronary perfusion pressure did not show significant difference before and after primary PCI; (53±10 vs. 51±9.9 mmHg, p=0.188, respectively). However, LVEDP, systolic and diastolic aortic pressure were significantly improved after primary PCI (22±4.8 vs.19±4.7 mmHg, p=0.000, 136±20 vs. 128±20 mmHg, p=0.000, 75±10 vs. 71±9.1 mmHg, p=0.003, respectively). There was a significant correlation between LVEDP and post procedural coronary perfusion pressure (r:-0.406, p=0.003). Also, LVEDP is negatively correlated with MBG (r:-0.430, p=0.002). However, LVEDP was found negatively correlated with STR (r:-0.467, p=0.001).
Discussion and Conclusion: Our study shows that the LVEDP which is an independent predictor of adverse outcomes in patients with STEMI undergoing primary PCI was negatively correlated with coronary perfusion pressure, MBG and STR. In conclusion, better MBG, higher coronary perfusion pressure and STR may suggest lower LVEDP.

Coronary artery disease / Acute coronary syndrome

PP-094

Relation between syntax score and new-onset atrial fibrillation in patients with acute coronary syndromes

Levent Korkmaz[1], Ömer Faruk Çırakoğlu[1], Hakan Erkan[1], Ali Rıza Akyüz[2], İsmail Gürbak[2], İhsan Dursun[1], Şükrü Çelik[1]

[1]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[2]Akçaabat Haçkalı Baba State Hospital, Trabzon

Introduction: The new onset atrial fibrillation is associated with a worse prognosis at follow up patients with acute coronary syndromes (ACS). Predicting and prevention new onset AF is therefore a crucial step in improving prognosis of patients with ACS. The purpose of present study was to investigate the association between Syntax score(SxScore) and new onset AF in patients with ACS.

Materials and Method: Two hundred fifty one patients with first time diagnosis of ACS were enrolled consecutively. Sxscore was calculated by a computer software. New onset AF was defined by developing AF during the hospitilisation.
Results: Forty nine patients developd AF. Patients with AF had higher SxScores (Fig 1.) 1. (21±6.2 vs 13±7.4, p<0.001). In univariate analyse, age (p<0.001), diabetes (p=0.012), diagnosis of STEMI (p<0.001), female gender (p<0.001) and SxScore (p<0.001) were significantly associated with new onset AF. Multivariate analyse demonstrated age (95% confidence interval, CI, 1.008–1.0.88, p=0.017, STEMI (95% CI, 2.34–14.68, p<0.001), and SxScore (95% CI, 1.038–1.159, p<0.001) as an independent determinant of new onset AF. Analysis using the receiver operating characteristic curve has demonstrated that SxScore of 22 constitutes the cut-off value for the development of AF with 75% sensitivity and 82% specificity (Fig 2.) (area under the curve: 0.782, 95% confidence interval 0.534-0.986).
Discussion and Conclusion: SxScore may be used to identify the patients who would develop AF in the setting of ACS.

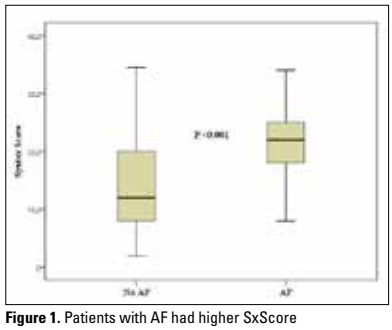


Figure 1. Patients with AF had higher SxScore

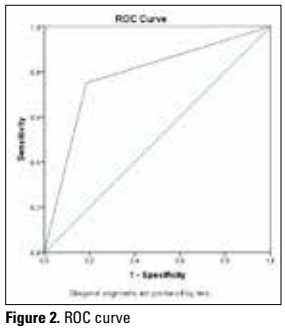


Figure 2. ROC curve

Coronary artery disease / Acute coronary syndrome

PP-095

A novel oxidative stress marker in acute myocardial infarction; Thiol/ disulphide homeostasis

Harun Kundi[1], İhsan Ateş[1], Emrullah Kızıltunç[1], Mustafa Çetin[1], Hülya Çiçekçioğlu[1], Salim Neşelioğlu[2], Özcan Erel[2], Ender Örnek[1]

[1]Ankara Numune Training and Research Hospital, Ankara
[2]Ankara Atatürk Education and Research Hospital, Ankara

Introduction: The aim of this study was to investigate a novel oxidative stress marker (thiol/ disulphide homeostasis) in patients with acute myocardial infarction (AMI), and compare the results with healthy controls for the first time in literature.
Materials and Method: A total of 450 participants including 300 patients with AMI, and 150 healthy individuals were included in the study. Left ventricular ejection fraction, body mass index, peak troponin I levels, triglyceride, total cholesterol, LDL, HDL, native thiol, total thiol, and disulphide, as well as disulphide/native thiol and disulphide/total thiol ratios were compared between the groups.
Results: There were significant differences between AMI patients and the controls for LVEF, and troponin, HDL, native thiol, total thiol, and disulphide levels, as well as disulphide/ native thiol and disulphide/ total thiol ratios (p<0.05). Stepwise logistic regression model indicated that HDL (OR=0.923: p<0.001) and disulphide levels (OR=0.548: p<0.001), and disulphide / total thiol ratio (OR=0.356: p<0.001) were significantly and independently related to AMI. The cut-off value of disulphide / total thiol ratio percentage on admission to predict AMI in all population was 4.3, with a sensitivity of 70%, and a specificity of 69%.
Discussion and Conclusion: Thiol/ disulphide homeostasis may be used as a novel oxidative stress marker in patients with AMI because it is readily available, easily calculated and relatively cheap. Further studies are needed to confirm the pathophysiological role of thiol/ disulphide homeostasis in AMI.

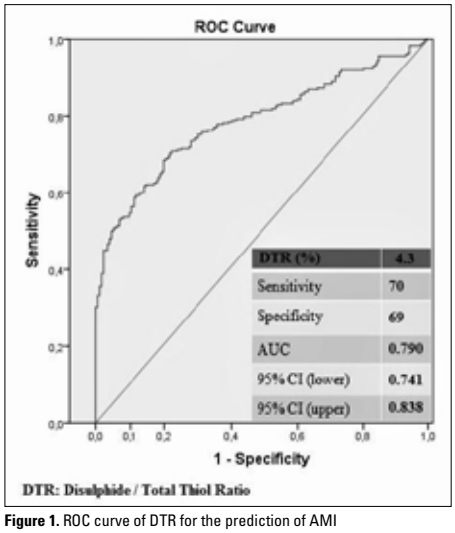


Figure 1. ROC curve of DTR for the prediction of AMI

Coronary artery disease / Acute coronary syndrome

PP-096

Prognostic significance of whole blood viscosity in patients with ST elevation myocardial infarction undergoing primary PCI

Mehmet Serkan Çetin, Elif Hande Özcan Çetin, Fazıl Arısoy, Emek Ediboğlu, Kadir Ocak, Serkan Topaloğlu, Ahmet Temizhan

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: We aimed to investigate the association of whole blood viscosity (WBV) with in-hospital and long-term outcomes in ST elevation myocardial infarction (STEMI) patients undergoing primary percutaneous coronary intervention (pPCI).
Materials and Method: 1835 consecutive patients who admitted with acute STEMI between 2010 and 2014 were included and followed-up for median 34.6 months. WBV was calculated for both low shear rate (LSR) and high-shear rate (HSR) from hematocrit and total plasma protein with a validated formulation.
Results: During the index hospitalization, major adverse cardiovascular events (MACE), stent thrombosis, non-fatal MI and cardiovascular mortality for both in-hospital and long-term were higher in ascending order of WBV tertiles at LSR and HSR. In multivariate logistic regression analysis, WBV at LSR (OR:1.236 95% CI:1.174-1.302 p<0.001) and WBV at HSR (OR:1.152 95% CI:1.057-1.268 p=0.002) were found as independent predictors of in-hospital MACE. Moreover, WBV at LSR (OR:1.243 95% CI:1.213-1.272 p<0.001) and WBV at HSR (OR:1.195% CI:1.181-1.266 p<0.001) were also found as independent predictors of long-term MACE. Kaplan-Meier analysis according to the long-term MACE free survival revealed that there was a higher occurrence of MACE in third tertile compared with first and second tertiles of WBV at LSR and WBV at HSR.
Discussion and Conclusion: Not only as the index of stasis but also a contributor to established cardiovascular risk factors, WBV seems to be an important prognostic indicator of short- and long-term cardiovascular adverse events and mortality in patients with STEMI undergoing pPCI. WBV may utilize the risk stratification in STEMI patient population and tailoring the individual preventive therapy.

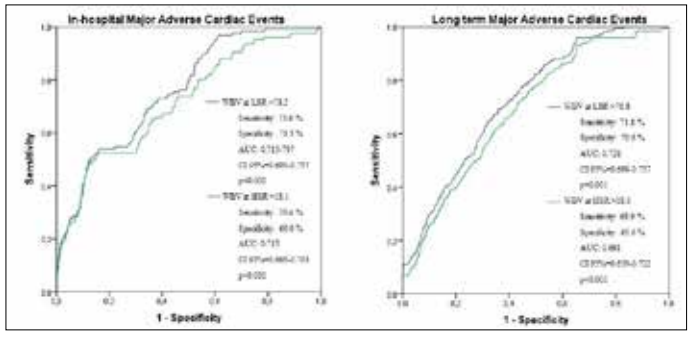


Figure 1. ROC curve analysis

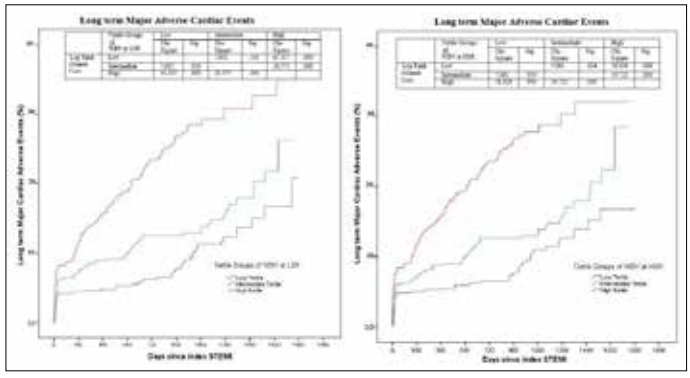


Figure 2. Kaplan Meier Survival Curve

Coronary artery disease / Acute coronary syndrome

PP-097

Relation of neutrophil/lymphocyte ratio to right ventricular dysfunction in patients with inferior ST-elevated myocardial infarction undergoing PCI

Barış Yaylak[1], Hüseyin Ede[2], Erkan Baysal[1], Bernas Altıntaş[1], Şükrü Akyüz[3], Utkan Sevuk[1], Güney Erdoğan[4], Nuri Cömert[5], Rojhat Altındağ[1], Züleyha Karahan[1], Önder Bilge[1], Kemal Çevik[1]

[1]Diyarbakır Training and Research Hospital, Diyarbakır
[2]Bozok University, Faculty of Medicine, Yozgat
[3]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul
[4]Ordu State Hospital, Ordu
[5]Memorial Antalya Hospital, Antalya

Introduction: Acute inferior STEMI is associated with increased in-hospital morbidity and mortality particularly among patients with coexisting right ventricular (RV) involvement. High NLR is an independent predic-

tor of major adverse cardiac events (MACE) and mortality in patients with acute myocardial infarction (MI). This study evaluated the relationship between the NLR and RV dysfunction and, in-hospital adverse cardiac events among patients with inferior STEMI who undergone primary PCI.

Materials and Method: A total of 213 subjects with inferior STEMI presented within 12 hours from the symptom onset were included in the study. The patients were divided into two groups according to the presence of RV dysfunction. The groups were compared according to NLR and receiving operating characteristics (ROC) analysis was performed to access the predictability of NLR on having RV dysfunction. Backward stepwise logistic regression analysis was used to assess independent predictors of RV dysfunction and in-hospital adverse cardiac events.

Results: The NLR was significantly higher in the group with RV dysfunction compared to that without RV dysfunction (p<0.001). In ROC analysis, NLR >3.6 predicted RV dysfunction with sensitivity of 83% and specificity of 54%. In a multivariate regression analysis, NLR remained an independent predictor of RV dysfunction (OR: 1.5, ≤95% confidence interval 1.277-1.766; p<0.001) and in-hospital adverse cardiac events (OR: 1.269 with 95% CI 1.112-1.449; p<0.001).

Discussion and Conclusion: Our results suggest that NLR was an independent predictor of RV dysfunction and an independent prognostic indicator for in-hospital adverse cardiac events in patients with inferior wall MI who undergoing primary PCI. Thus, NLR which can be easily obtained from routine blood tests might be used as a predictor for RV dysfunction in inferior wall MI patients.

Coronary artery disease / Acute coronary syndrome

PP-098

The predictors of non-adherence of regular physical activity after coronary revascularization

Burak Açar[1], Cengiz Burak[1], Meryem Kara[1], Fatih Bayraktar[1], Esra Gücük İpek[1], Fatih Mehmet Uçar[2], Ümit Güray[3], Burcu Demirkan[3], Yeşim Güray[1]

[1]Türkiye Yüksek İhtisas Hospital, Ankara
[2]Denizli State Hospital, Denizli
[3]Ankara Numune Training and Research Hospital, Ankara

Introduction: Coronary heart disease is the leading cause of mortality worldwide. Regular physical activity stands as a comprehensive management strategy for these patients. We investigated the parameters that influence physical activity in patients with a history of coronary revascularization

Materials and Method: We included outpatients who had a history of coronary revascularization at least 6 months prior to enrollment. Data of physical activity habits, demographics, and clinical characteristics were collected with a questionnaire

Results: A total of 202 consecutive outpatients (age 61.3±11.2 years, 73% males) were enrolled. One hundred and 4 (51%) patients had previous percutaneous coronary intervention, 67 (33%) patients had coronary bypass graft surgery, and 31 (15%) patients had both of the procedures. Of all, 46 (23%) patients were engaging in regular physical activity. Patients were classified into two subgroups according to their physical activity habits. There were no significant differences in age, comorbid conditions or revascularization type between subgroups. In the univariate regression analysis, absence of regular physical activity was associated with female gender, low education level, unemployment, low household income, implantation of bare metal stent (vs. drug eluted stent) and absence of regular follow-up visits. Stepwise multivariate regression analysis concluded that low education level (OR=3.26, 95% CI:1.31-8.11, p=0.01), and absence of regular follow-up visits (OR=2.95, 95% CI:1.01-8.61, p=0.04) were independent predictors of non-adherence of regular physical activity among study subjects

Discussion and Conclusion: Regular physical activity rates were lower in outpatients with previous coronary revascularization. Education level and regular follow-up visits were associated with physical activity adherence in these patients.

Cardiac imaging / Echocardiography

PP-099

The evaluation of pulmonary artery distensibility by echocardiography in patients with rheumatoid arthrtitis

Önder Akci, Serkan Bektur, Gülay Özkeçeci, Özlem Solak, Ümit Dündar, Ömer Dikici, Alaettin Avşar, Ersel Onrat

Afyon Kocatepe University, Faculty of Medicine, Afyon

Introduction: Rheumatoid arthritis is a systemic inflammatory disease that has pulmonary system involvement. Fibrosis of the lungs and interstitial lung disease are associated with RA, and early diagnosis is a cornerstone in treatment. Pulmonary artery distensibility has been investigated using MRI and has been found to correlate well with the severity of pulmonary hypertension. The aim of this study was to investigate whether echocardiographic measurement of the right pulmonary artery distensibility (percentage change in diameter of the right pulmonary artery in systole and diastole) may be of value in assessing the presence and severity of occult pulmonary disease before it is symptomatic or before it can be diagnosed by conventional methods.

Materials and Method: 43 patients (6 male, mean age: 55.3±12.3, mean disease duration:12.9±9.7 years) with RA and age and sex matched 18 healthy subjects (4 male, mean age: 42.6±15.7) recruited for the study. The body mass index values were similar in both groups. The RA group was clear of lung involvement proved with symptoms and chest x-rays. In addition to conventional echocardiographic evaluation all subjects are evaluated for right pulmonary artery distensibility index (RPAD Index), which is calculated as the difference in diameter of the right pulmonary artery in systole and diastole.

Results: Mean RPAD was 0.17±0.05 mm in patient group and 0.21±0.06 mm in control group. RPAD was higher in patient group but there wasn't a statictically significant difference for RPAD between patient and control group.

Discussion and Conclusion: According to this study results, RPAD is worsened in patients with RA but it's statistically significant. The prevalance of lung involvement may be as low as %5 in patients with rheumatiod arthirits. So lowered RPAD may be an early sign of lung involvement in RA but it should be verified with follow-ups for longer duration.

Cardiac imaging / Echocardiography

PP-100

The evaluation of the relationship between pulse wave velocity and internal mammarian artery flow in candidates for coronary artery bypass grafting

Önder Akci, Gülay Özkeçeci, Serkan Bektur, Mustafa Aldemir, Fahri Adalı, Evren Tecer, Osman Tansel Darçın, Alaettin Avşar, Ersel Onrat

Afyon Kocatepe University, Faculty of Medicine, Afyon

Introduction: Atherosclerosis is a chronic, inflammatory and focal disease of the middle and large arteries. Coronary arteries, popliteal arteries and internal mammarian arteries (IMA) are middle sized arteries and they are prone to early atherosclerosis. Conventional risk factors of atherosclerosis (hypertension, diabetes mellitus, hyperlipidemia, advanced age, smoking, male sex) are a sign of extension of atherosclerosis and their existence correlated well with pulse wave velocity (PWV). Increased PWV is also an independent risk factor for cardiovascular mortality and morbidity. IMA is the most widely preffered artery for anastomosis in coronary artery bypass grafting (CABG). Because IMA is also an artery that is prone to atherosclerosis, the size and the blood flow through IMA has always been an interest for surgeants preoperatively. We investigated the relationship between PWV and IMA size ve blood flow in patients who are candidates for CABG.

Materials and Method: We recruited 21 patients (16 male, mean age 64,3) planned for CABG operation. Aortic PWV values are evaluated by echocardiography (GE, vivid E9, Solingen, Germany). IMA size and flow parameters are evaluated intraoperatively by cardiovasular surgeants.

Results: According to the early resuts of this prospective study, mean PWV value was 9,32±1,69, mean IMA diameter was 1,53±0,05 mm and mean IMA flow was 29,2±1,2 cc/min.

Discussion and Conclusion: We found a statistically significant correlation between the IMA flow and IMA diameter (p<0,05). But there wasn't a significant correlation between the IMA flow or diameter and PWV (p>0.05).

Cardiac imaging / Echocardiography

PP-101

Assessment of atrial electromechanical delay and left atrial mechanical functions in patients with ulcerative colitis

Gökay Nar[1], Bilal Ergül[1], Gökhan Aksan[2], Sinan İnci[3]

[1]Ahi Evran University Research and Education Hospital, Kırşehir
[2]Şişli Etfal Training and Research Hospital, İstanbul
[3]Aksaray State Hospital, Aksaray

Introduction: Ulcerative colitis (UC) is a common inflammatory bowel disease and the systemic inflammation caused by UC could also affect the cardiovascular system, as well as several organ systems. The aim of the current study is to evaluate left atrial (LA) mechanical functions and duration of atrial electromechanical delay (AEMD) with echocardiography in patients with UC.

Materials and Method: A total of 91 patients, 45 patients with UC (group: 1) and 46 healthy individuals as the control group (group: 2) were included in the study. The demographical and laboratory data were recorded and echocardiographic measurements were performed in all patients. Left atrial mechanical functions and AEMD durations were calculated.

Results: In the evaluation of basal clinical and laboratory findings, no difference was detected between the two groups, except WBC (p=0.013) and CRP (p<0.001). The echocardiographic assessment revealed that the diastolic parameters such as E (p=0.09), E/A (p=0.013),and E' (p=0.008) waves decreased in the UC group when compared to the control group; furthermore, LA volumes and mechanical functions were also different between groups There was a significant difference between the groups in terms of AEMD durations, except tricuspid PA (Table 1). The correlation analysis revealed that age and the disease duration were correlated with AEMD.

Discussion and Conclusion: The current study reported that LA volume and mechanical functions degenerated and AEMD increased in patients with UC when compared to the control group. These findings demonstrates that depending on the disease duration, UC affects LA electromechanical functions.

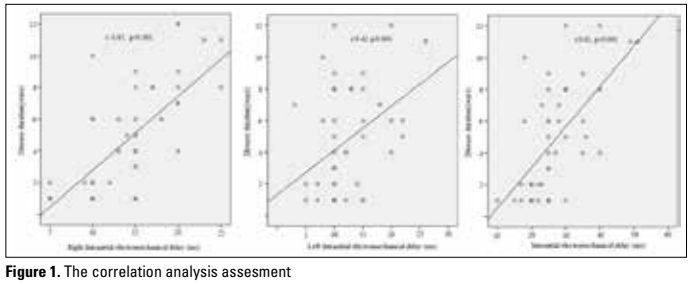


Figure 1. The correlation analysis assesment

Table 1. Tissue Doppler echocardiographic findings

	Group 1 (n = 45)	Control Group (n = 46)	p-value
PA Lateral (ms)	127.8 ± 11.1	121.8 ± 9.1	**0.005**
PA Septal (ms)	115.3 ± 9.9	110.0 ± 8.4	**0.007**
PA Tricuspid (ms)	100.9 ± 8.9	100.2 ± 7.3	0.628
IA-EMD (ms)	26.9 ± 8.3	21.6 ± 7.1	**0.002**
IRight-EMD (ms)	14.4 ± 5.0	9.8 ± 4.9	**<0.001**
intra left	12.5 ± 5.2	11.8 ± 4.9	0.478

Cardiac imaging / Echocardiography

PP-102

The pulmonary artery stiffness and its relation to left ventricular diastolic functions in patients with rheumatoid arthritis

İbrahim Halil Altıparmak[1], Muslihittin Emre Erkuş[1], Mustafa Polat[2], Ahmet Tutoğlu[1], Ahmet Boyacı[1], Özgür Günebakmaz[1], Yusuf Sezen[1], Zekeriya Kaya[1], Recep Demirbağ[1]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Gaziantep Sehitkamil State Hospital, Gaziantep

Introduction: Rheumatoid arthritis (RA) is a common clinical condition characterized with systemic inflammation. The syndrome may affect pulmonary and cardiovascular system including heart functions. We aimed to investigate the association between pulmonary artery stiffness (PAS) and left ventricle diastolic dysfunction in patients with RA.
Materials and Method: This study was conducted from March to June 2015. Study participants consisted of twenty one RA patients in whom remission had been achieved. Control group consisted of twenty-five apparently healthy age and sex matched subjects. Echocardiographic assessment was performed in all participants, and pulmonary artery stiffness (PAS) was calculated by the formula; PAS (kHz/s) =maximal frequency shift/acceleration time.
Results: Both groups were similar with regard to the clinical and demographic variables (all of p > 0.05). Left ventricle ejection fraction, diastolic and systolic diameters and wall thickness were similar in two groups (all of p>0.05). PAS (kHz/s) and pulmonary artery systolic pressure (PASP, mmHg) significantly increased in RA group compared with control (27±7 vs 17±3, and 27±6 vs 22±5, p<0.001, and p=0.002, respectively). Deceleration time of E wave (ms), mitral E/A, and Tissue Doppler E'/A' in RA group were significantly lower than control (134±22 vs 156±28, 0.90±0.27 vs 1.34±0.31, and 0.86±0.41 vs 1.68±0.71, p=0.005, p<0.001, and p<0.001, respectively). Furthermore, left atrial volume (LAV, cm^3) in RA group was significantly higher than control (36±9 vs 26±6, p<0.001). The correlation analyses showed significant correlation between PAS and left ventricular diastolic dysfunction parameters and PASP (all of p<0.001) (Figure). Linear regression analyses showed that PAS was an independent predictor for LAV and PASP (β=0.428, p=0.007, and β=0.325, p=0.02, respectively).
Discussion and Conclusion: Increased PAS may be an indicator for left ventricular diastolic dysfunction and pulmonary hypertension in patients with RA.

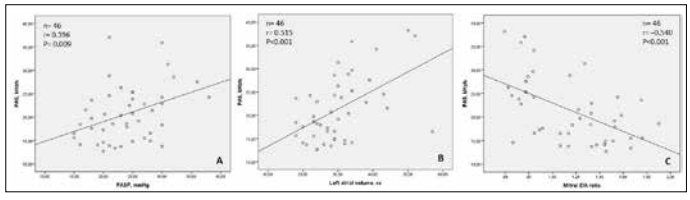


Figure 1. The graphic showing correlations between variables

Cardiac imaging / Echocardiography

PP-103

Evaluation of ventricular functions using tissue Doppler echocardiography in patients with FMF

Kayıhan Karaman[1], Arif Arısoy[1], Metin Karayakalı[1], Fatih Altunkaş[1], Ahmet Demirtaş[1], Ertuğrul Erken[1], Mustafa Öztürk[2], Köksal Ceyhan[1]

[1]Gaziosmanpaşa University Faculty of Medicine, Tokat
[2]Çaycuma State Hospital, Zonguldak

Introduction: Subclinical cardiac involvement is common in inflammatory rheumatic diseases. Isovolumetric acceleration (IVA) is a Tissue Doppler (TDI) parameter for the assessment of systolic function of left and right ventricle. The aim of this study was to assess left and right ventricular functions in patients with Familial Mediterranean fever (FMF) by using IVA method.
Materials and Method: Thirty-three patients (23 women, 10 men; mean age 28.4±5.2 years) with FMF and 26 age- and sex-matched healthy subjects (20 women, 6 men; mean age 31.4±8.5 years) were evaluated by conventional echocardiography (ECHO) and TDI ECHO. IVA was calculated as the ratio of TDI derived peak myocardial velocity during isovolumetric contraction divided by the acceleration time.
Results: There were no significant differences between study groups in terms of two-dimensional ECHO and Tissue Doppler velocities. IVA findings of both ventricles were similar among the two groups (Table 1).
Discussion and Conclusion: In our study, IVA was not significantly associated with FMF patients compared to the control group. Multicenter studies with larger patient numbers are needed to evaluate this parameter for clinical practice.

Table 1. Study parameters between the groups

	FMF(-) (n=26)	FMF(+) (n=33)	P values
Age,years	31.4±8.5	28.4±5.2	0.100
Women,(%)	20(46.5)	23(53.5)	0.535
Systolic BP,mmHg	109±10	107±11	0.605
Diastolic BP, mmHg	68±9	70±9	0.384
LVEF,(%)	55.1±4.8	57.1±4.5	0.119
LVIVA, (msec^2)	2.7±0.5	2.9±0.8	0.360
LVMPI	0.44±0.13	0.40±0.05	0.087
RVIVA, (msec^2)	3.5±1.0	3.4±0.9	0.765
RVMPI	0.49±0.11	0.49±0.05	0.970

BP: blood pressure; LVIVA: left ventricular (LV) isovolumic acceleration; LVMPI: LV myocardial performance index; RVIVA: right ventricular (RV) isovolumic acceleration; RVMPI: RV myocardial performance index; LVEF: LV ejection fraction

Cardiac imaging / Echocardiography

PP-104

Relationship between pulmonary venous flow and prosthetic mitral valve thrombosis

Sinan Cerşit[1], Sabahattin Gündüz[1], Mustafa Tabakçı[1], Macit Kalçık[2], Mahmut Yesin[1], Emrah Bayam[1], Mehmet Özkan[1]

[1]Kartal Kosuyolu Education and Research Hospital, İstanbul
[2]Çorum İskilip State Hospital, Çorum

Introduction: Prosthetic valve thrombosis (PVT) may impair pulmonary venous flow (PVF) and left atrial appendage (LAA) functions. We investigated the association between left superior PVF and LAA functions and mitral PVT.
Materials and Method: This observational cross-sectional study included 100 consecutive patients (87 female, age 58.3 ± 6 years) with mechanical mitral PVT and 50 age and sex matched otherwise healthy controls with normally functioning mitral prostheses. All patients were included after comprehensive transesophageal echocardiography (TEE) examination for presence and quantification of PVT, the diameter of left atrium and length of LAA. Peak systolic velocity (PSV), velocity-time integral of systolic flow (VTI-s), peak diastolic velocity (PDV), velocity-time integral of diastolic flow (VTI-d), systolic fraction (SFr) of left upper PVF and the flow of LAA orifice were recorded using color guided pulsed wave Doppler.
Results: The PSV (35.01±16.56 cm/s vs. 44.72±16.56 cm/s, respectively, p=0.002), VTI-s (3.04±2.19 cm vs. 5.35±2.76 cm, respectively, p<0.001), SFr (45.54±11.92% vs. 52.49±14.77%, respectively, p=0.008), VTI-d (3.5±2.19 cm vs. 4.58±1.98 cm, respectively, p<0.001) and LAA orifice velocity (30.19±15.86 cm/s vs. 39.2±21.7 cm/s, respectively, p=0.011) were significantly lower in patients with PVT compared with controls. However, PDV was similar between the groups (40.74±15.02 cm/s vs. 41.1±13.46 cm/s, respectively, p=0.93). Patients with obstructive PVT (n=21) had lower PDV (35.8±17.4 vs 42±14.1 cm/s, respectively, p=0.029) and higher VTIdia (4.4±1.9 cm vs 3.3±2.2 cm, respectively, p=0.006) compared those with non-obstructive PVT. The PSV, VTI-s, SFr and LAA orifice velocity were similar between obstructive vs non-obstructive PVT subgroups, but lower in both PVT subgroups compared with controls.
Discussion and Conclusion: Mitral mechanical PVT alters the LUPF flow patterns with diminished systolic flow as compared to control subjects. This alteration was maintained in both obstructive and non-obstructive PVT subgroups. The obstructive PVT patients had lower PDV but higher VTI-d values than that of non-obstructive PVT patients. This indicates further limitation of diastolic flow velocity with a compensatory prolongation of diastolic flow of LUPV in those with obstructive PVT.

Cardiac imaging / Echocardiography

PP-105

Adult degenerative scoliosis associated with increased aortic diameter and plaque burden and composition

Burak Ayça[1], Taşkın Rakıcı[2], Yunus Atıcı[3], Murat Avşar[1], Yasin Yüksel[2], Fatih Akın[4], Ertuğrul Okuyan[1], Mustafa Hakan Dinçkal[1]

[1]Bağcılar Training and Research Hospital, İstanbul
[2]İstanbul Training and Research Hospital, İstanbul
[3]Baltalimanı Bone Diseases Training and Research Hospital, İstanbul
[4]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla

Introduction: We aimed to investigate the relationship between adult degenerative scoliosis (ADS) and the aortic plaques and diameters.
Materials and Method: We included 219 patients with ADS and 100 control patients without ADS. Diameters of ascending, arch, descending and abdominal aorta and number, localization and types of the aortic plaques and the Cobb angles of all patients were measured from computed tomography (CT) images. We divided the patients with ADS into three groups according to the Cobb angle, and divided them into four groups according to level of spine deformity.
Results: The patients with ADS had a larger aorta and more aortic plaques (both, p<0.001). The patients with ADS had more fibro-fatty and mix plaques (both, p<0.001). The patients with severe ADS had larger diameters of the ascending and arch of the aorta (p=0.026 and p=0.027, respectively). The patients with the main thoracic curve had a larger ascending aorta and the patients with a thoracolumbar curve had more aortic plaques (p=0.035 and p=0.029, respectively). In multivariate regression analysis, the ADS was an independent risk factor for both aortic dilatation (>3.6 cm) and aortic plaque build-up (both, p<0.001).
Discussion and Conclusion: The ADS may be a risk factor for aortic dilatation and aortic atherosclerosis.

Cardiac imaging / Echocardiography

PP-106

Assessment of atrial electromechanical delay and left atrial mechanical functions in patients with end stage renal disease

Gökay Nar[1], Aydın Güçlü[1], Gökhan Aksan[2], Sinan İnci[3], Atilla İçli[1]

[1]Ahi Evran University Research and Education Hospital, Kırşehir
[2]Şişli Etfal Training and Research Hospital, İstanbul
[3]Aksaray State Hospital, Aksaray

Introduction: Cardiovascular complications play an important role in the end stage renal disease (ESRD). Prolongation of the duration of atrial electromechanical delay (AEMD) is a well-known characteristic of the atrium and it could be associated with ESRD. In the current study, our aims are to investigate mechanical functions of the left atrium (LA) and AEMD durations in ESRD patients.
Materials and Method: A total of 86 patients, 46 with ESRD and 45 as the control group, were included in

the study. The demographical and laboratory data were recorded. Echocardiographic measurements were performed in all patients. Left atrial mechanical functions and AEMD durations were calculated.
Results: In the evaluation of basal clinical and laboratory findings, no difference was detected between the two groups. The echocardiographic assessment revealed that the Ventrıcular septal thickness (IVS), posterior wall thickness (PW), left atrial (LA) dimension and diastolic parameters decreased in the ESRD group when compared to the control group (Table 1); furthermore, LA volumes, mechanical functions and AEMD durations were also different between groups (Table 2). The correlation analysis revealed that serum ferritin levels were correlated with AEMD.
Discussion and Conclusion: In the present study, we found degenerated LA functions and prolongation in the durations of AEMD in the ESRD group compared with the control group. furthermore we found possitive correlations between ferritin levels and AEMD. This outcome may indicate that elevated ferritin levels may be associated with LA functions and AEMD.

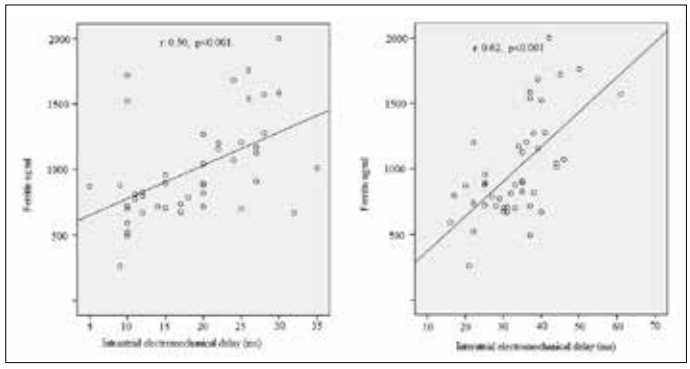


Figure. Correlation analysis between ferritin and AEMD

Table. Electromechanic functions

	Group 1 (n = 46)	Control Group (n = 40)	p-value
PA Lateral (ms)	144.1 ± 13.5	126.3 ± 10.6	**<0.001**
PA Septal (ms)	129.4 ± 13.1	116.8 ± 9.7	**<0.001**
PA Tricuspid (ms)	110.9 ± 10.9	103.1 ± 9.1	**0.001**
IA-EMD (ms)	33.2 ± 9.1	22.7 ± 7.7	**<0.001**
IRight-EMD (ms)	18.5 ± 7.7	13.2 ± 6.4	**0.001**
ILeft-EMD (ms)	18.5 ± 7.7	13.7 ± 5.7	**0.002**

Cardiac imaging / Echocardiography

PP-107

Pseudoaneurysm of mitral-aortic inetrvalvuler fibrosa: single center experience

Ekrem Şahan[1], Murat Gül[2], Suzan Şahan[3], Omaç Tüfekçioğlu[3]

[1]Atatürk Lung Disease and Thorax Surgery Training and Research Hospital, Ankara
[2]Erciş State Hospital, Van
[3]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: Pseudoaneurysm of mitral-aortic intervalvular fibrosa (MAIVF) is a rare but potentially life-threatening condition. Both transtorasic echocardiography (TTE) and transesophageal echocardiography (TEE) can detect pseudoaneurysm of MAIVF with sensitivity rates 43% and 90%. The typical finding of echocardiography is a pulsatile eco-free sac which expands in systole and collapses in diastole. Pseudoaneurysm of MAIVF is often associated with infection or surgical trauma. While it is likely to maintain an asymptomatic course, symptoms of shortness of breath, heart failure, valvular disease, chest pain, endocarditis, cerebrovascular events are common clinical presentations. The most recommended treatment is surgical approach. However, conservative therapy is an alternative approach for high risk patients or refused the surgery with a reasonable follow-up with echocardiography in a timeline of 6 to 12 months. We aimed to share our experience about this rare condition.
Materials and Method: From January 2004 to January 2015, ten patients were diagnosed with pseudoaneurysm of MAIVF. Clinical features data and visuliazation features data of our patients collected retrospectively from pateints files.
Results: Seven patients had a clinical history of valvular surgery, three patients with native heart valves. At the time of admission, three patients presented with endocarditis and five patients had symptoms of heart failure, two patients were asypmtomatic. For the diagnosis; transthoracic echocardiography (TTE), transesophageal echocardiography (TEE) and multdetector computed tomography (MDCT) were performed. All patients refered to the surgery. Three patients refused surgery and one of them was lost to follow-up, one of them continued follow-up visits regularly. The other one, in the follow-up period he died because of pneumonia. Seven patients accepted surgical treatment and six of them were alive after the surgery. One patient had cerebrovascular event and a few hours after admission she died following worsening of her neurologic status.
Discussion and Conclusion: As we mentioned previously, pseudoaneurysm of MAIVF is rare but potentially life-threatening situation. With the increasing number of cardiac valve surgery and diagnosis of infective endocarditis, a likely increment in the new diagnoses of pseudoaneurysm is expected.

Cardiac imaging / Echocardiography

PP-108

Quantification of mitral stenosis severity with three dimensional echocardiography

Nurten Sayar[1], Gülay Gök[2], Betül Erer[2], Dilaver Öz[2], Ahmet Ekmekçi[2], Aycan Zencirci[2], Adnan Kaya[2], Mehmet Eren[2]

[1]Marmara University Faculty of Medicine, İstanbul
[2]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul

Introduction: Measurement of the mitral valvular area (MVA) and the mean transmitral gradient are the major parameters for defining the severity of the disease. Unfortunately, pathology and its hemodynamic consequences (orifice area vs flow) are not always in concordance The severity of mitral stenosis (MS) should be assessed by a multimodality approach that incorporates valve area, mean Doppler gradients, pulmonary artery pressure and functional status of the patient. The aim of this study is to compare the Three dimensional mitral valve area 3D-MVA with conventional 2D echocardiographic parameters mentioned above
Materials and Method: 54 consecutive patients referred to our institution for the assessment of the suitability of percutaneous mitral baloon valvuloplasty (PMBV) were studied. Fourteen patients were excluded either due to poor image quality (n=8) or presence of more than moderate mitral regurgitation (n=6). Images were acquired using an iE33 ultrasound system (Philips Medical Systems;Andover Massachusetts) equipped with a 2D and fully sampled 3D matrix-array transducer for transesophageal echocardiography MVA was defined as the narrowet orifice at the time of maximal MV opening and measured by 2D planimetry in the short-axis view. The Doppler technique was used with continuous wave recordings to calculate the maximal and mean transvalvular gradient and to assess the MVA by the transmitral pressure half-time index. Full- volume images of 3 cardiac cycles were acquired within 5-7 seconds of breath holding in patients with sinus rhythm. In patients with atrial fibrillation live 3D images were acquired instead of full-volume images because of variability in cardiac cycle duration. 3D data were transferred to an offline analysis system (Q-Lab, Philips; Andover, Massachusetts). By using the crop function for the image formatting, parallel sections through scanned volumes in perpendicular planes were obtained.
Results: The mean age was 51.1±11.6 years, with 78% female. 12 patients (30%) were in atrial fibrillation. The mean left ventricle ejection fraction was 59.8±1.8%. Measurement of 3D MVA takes 1.1±0.3 minutes. Intraobserver agreement was excellent: It was 0.94 for 3D MVA and, interobserver agreement for 2D MVA, 3D MVA was good, with the mean absolute differences of MVA 0.05±0.03 cm^2 (10± 5%) 3D MVA measurements were significantly lower compared to 2D MVA (mean difference: -0.12±0.27 cm^2, p=0.01) and MVA PHT(mean difference: -0.10±0.32 cm^2, p=0.55). 3D MVA showed good correlation with 2DMVA and PHT method, respectively (r=0.74 and r=0.66, p<0.001). There was no correlation between mean transmitral gradient and 3D MVA measurements.
Discussion and Conclusion: MVA planimetry is feasible in patients with mitral stenosis using 3D echocardiography. This method enables true visualization of the true stenotic orifice by multiplane imaging. 3D MVA planimetry must be the routine evaluation in patients with mitral stenosis.

Valve diseases

PP-109

Association of pentraxin-3 with the severity of rheumatic mitral valve stenosis

Nihat Polat, Abdülkadir Yıldız, Sait Alan, Nizamettin Toprak

Dicle University, Faculty of Medicine, Diyarbakır

Introduction: Inflammation is involved in the pathogenesis of rheumatic mitral valve stenosis (RMVS). Pentraxin-3 (PTX3) indicates the inflammatory state of humans. However, circulating PTX3 levels in patients with RMVS, remain largely unknown. In this study, we investigated whether there is an association between the severity of RMVS and PTX3.
Materials and Method: Forty-one patients with RMVS who were admitted to our cardiology clinic between December 2013 and April 2014 were enrolled in the study. Thirty-one age- and gender-matched healthy subjects were included in the control group. Patients with acute infection, chronic inflammatory disorders, coronary artery disease, pregnancy, chronic renal or hepatic disease and malignancies were excluded from the study.
Results: The study population included 72 subjects (41 patients with RMVS and 31 healthy subjects, 56 female) with a mean age of 40±13 years. Patients with RMVS had higher left atrial diameters than healthy subjects. PTX3 and hsCRP were significantly higher in patients with RMVS when compared to control subjects and this difference was more significant in PTX3 compared to hsCRP (3.37±1.11 vs 2.86±0.59, p=0.014 and 2.36±1.48 vs 1.72±0.73, p=0.019, respectively). PTX3 was positively correlated with Wilkins score, mitral valvular area, mitral pressure gradient and left atrium diameter.
Discussion and Conclusion: We demonstrated that plasma PTX3 and hsCRP levels were increased in patients with RMVS. Compared to hsCRP, PTX3 was more closely related with the severity of mitral valve stenosis. These findings suggest that PTX3 may participate in the pathophysiology of RMVS.

Valve diseases

PP-110

The impact of percutaneus trasluminal mitral valvuloplasty on red cell distribution width in patients with severe rheumatic mitral stenosis

Hamidullah Haqmal, Şevket Balta, Cengiz Öztürk, Turgay Çelik, Mustafa Aparcı, Mustafa Demir, Ali Osman Yıldırım, Atila İyisoy, Zekeriya Arslan

Gülhane Military Medical Academy (GMMA) Ankara, Ankara

Introduction: Red blood cell distribution width(RDW) independently predicts mortality rate and cardiovascular events in many conditions. However, the impact of percutaneous transluminal mitral valvuloplasty

(PTMV) on RDW has never been studied. The aim of this study was to evaluate the prognostic impact of the PLR before and one month after PTMV procedure in patients with SRMS and atrial fibrillation(AF).

Materials and Method: The study was conducted retrospectively and examined data of consecutive 47 patients (27 women and 17 men) tertiary referral center from December 2013 to March 2015. All subjects were evaluated with a detailed medical history and physical examination. RDW levels were analysed in patients with SRMS before and one month after the procedure. 14 patients were excluded in this study because of some condition to be changed to RDW levels and 2 patients were also excluded due to failure PTMV. Before and one month after PTMV, mitral valve area (MVA), transmitral gradient (TMG), left atrium diameter (LAD) and estimates systolic pulmonary artery pressure (esPAP) were measured using transthoracic echocardiography (TTE).

Results: Twenty one patients with SRMS were included in this study. In patients with SRMS (mean age: 43±27 years, and 17 (%90.2) were women), MVA was increased significantly after PTMV compared with before procedure (1.17±0.16 and 1.9±0.26 respectively p<0.001), LAD, TMG and esPAP (53.9±12.2 and 39.1±9.7 respectively p<0.001) were significantly decreased after PTMV compare with before procedure. NYHA functional capacity (2.47±0.5 and 1.38±0.49 p<0.001) and six minute walk test (267.2±60 and 463.3±78 respectively p<0.001) were importantly increased one month after procedure. RDW levels were decreased one month after PTMV procedure compared with before procedure (14.08±1.57 and 12.94±1.21 p<0.001).

Discussion and Conclusion: Red blood cell distribution width is an easy, accessible and useful inflammatory marker in in patients with SRMS. We concluded that RDW may be useful predictor marker of systemic inflammatory status in patients with SRMS. We believe that RDW values may be used as an inflammatory status in these patients.

Valve diseases

PP-111

The usefulness of serum troponin levels to predict 1-year survival rates in infective endocarditis

Esra Gücük İpek[1], Yeşim Güray[1], Burak Açar[1], Habibe Kafes[1], Lale Dinç Asarcıklı[2], Gizem Çabuk[3], Burcu Demirkan[1], Mevlüt Serdar Kuyumcu[1], Ümit Güray[4]

[1]Türkiye Yüksek İhtisas Hospital, Ankara
[2]Ankara Dışkapı Training and Research Hospital, Ankara
[3]Buca State Hospital, İzmir
[4]Ankara Numune Training and Research Hospital, Ankara

Introduction: Infective endocarditis (IE) is associated with increased mortality and morbidity. In this study, we aimed to evaluate the role of troponin levels in predicting long-term survival in patients with IE.

Materials and Method: A retrospective analysis of the medical database of Yuksek Ihtisas Education and Research Hospital was performed to reach the patients that received the diagnosis of definite IE according to Duke criteria. Out of 84 definite IE cases, 48 patients (mean age 45.6±17.3, 39.6% female) that had troponin T levels measured upon hospital admission were included. The survival status of the study subjects was assessed during a follow-up period of 1 year.

Results: A total of 20 (41.7%) patients died during the follow-up. Baseline median troponin T levels were significantly high in fatal cases (0.08 [0.02-0.24] ng/ml vs. 0.02 [0.01-0.04] ng/ml p=0.003). The optimal troponin T level to detect mortality was 0.05 ng/ml according to receiver operating characteristic curve (area under the curve 0.75, 95% CI [0.61-0.9], p=0.003) with 70% sensitivity and 79% specifity. Patient with elevated troponin levels were older, were more likely to be male and tended to have enterococcal infection. These patients had also higher creatinine levels and increased systolic pulmonary pressures. Troponin T ≥0.05 ng/ml was associated with increased 1-year mortality rates in the log-rank analysis (p=0.002). In the multivariate Cox regression analysis, renal failure (hazards ratio (HR) 8.23 confidence interval 95% 2.53-26.9, p<0.0001), heart failure (HR 4.48, CI 95% 1.73-11.61, p=0.002) and troponin T ≥0.05 ng/ml (HR 3.11, CI 95% 1.13-8.56, p=0.03) were associated with increased mortality rates.

Discussion and Conclusion: In conclusion, baseline troponin T levels may provide valuable information regarding the long-term outcome of the IE and potentially identify high-risk patients that need more aggressive treatment. Without an evidence of myocardial injury, IE may have a benign course.

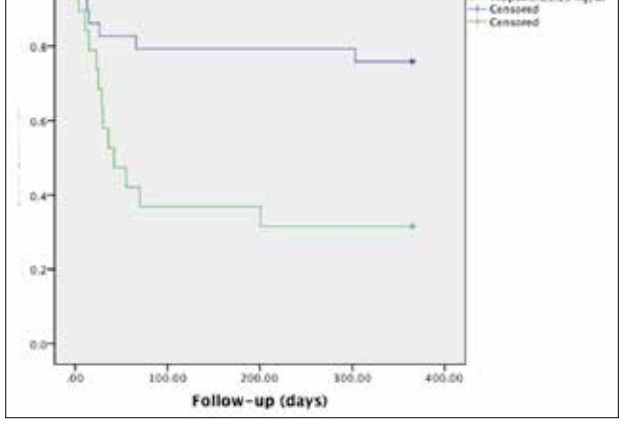


Figure. Kaplan Meier survival curves in patient subgroups

Valve diseases

PP-112

Evaluation of left atrial mechanical function in patients with isolated bicuspid aortic valve

Arif Arısoy[1], Kadriye Memiç[2], Selami Demirelli[3], Kayıhan Karaman[1], Fatih Altunkaş[1], Metin Karayakalı[1], Yusuf Karavelioğlu[2], Ataç Çelik[1]

[1]Gaziosmanpaşa University Faculty of Medicine, Tokat
[2]Hitit University Medicine Faculty, Çorum
[3]Erzurum Regional Training and Research Hospital, Erzurum

Introduction: Bicuspid aortic valve (BAV) represents the most common cardiac congenital malformation in the adult age. Recent studies have shown that BAV is associated with abnormal aortic elasticity, impaired left ventricular (LV) systolic and diastolic function. But, the left atrial (LA) mechanical functions have not been adequately investigated in these patients. In our study, we aimed to assess LA mechanical function in patients with isolated bicuspid aortic valve.

Materials and Method: A total of 34 patients with BAV and 29 controls were included. Left atrial volumes (maximal, minimal, and pre-systolic) were measured by area-length method in the apical four-chamber view. Mechanical function parameters of the LA were calculated. Parameters of aortic elasticity were calculated.

Results: Patients and control subjects were similar in baseline characteristics. Aortic stiffness index and aortic elastic modulus were higher in patients with BAV than in controls. The maximal and at the beginning of atrial systole LA volumes and LA active emptying fraction were significantly higher in BAV patients (p=0,004, p=0,029, p=0,003 respectively) (Table 1). Also, there was a positive corelation between aortic stiffness index and LA active emptying fraction (Figure1).

Discussion and Conclusion: Our study demonstrated BAV is associated with increased LA volume and active emptying fraction. Also, there was a correlation between these parameters and aortic elasticity parameters.

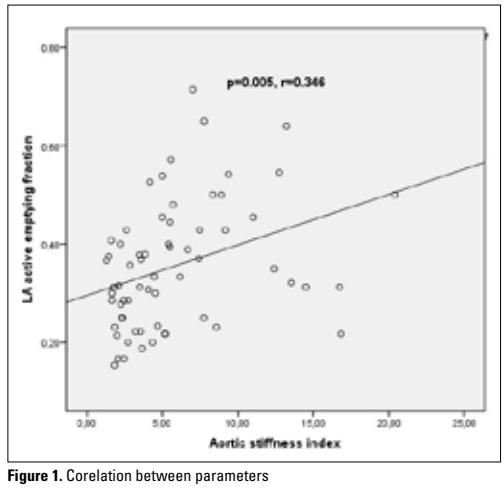


Figure 1. Corelation between parameters

Table 1. Study findings

	Control (n=29)	BAV (n=34)	p value
Age (year)			
Sex (female)			
LV EF (%)			
LA maximum volume (ml/m2)			
LA minimum volume (ml/m2)			
LA presystolic volume (ml/m2)			
LA active emptying fraction (%)			
LA passive emptying fraction (%)			
Aortic Stiffness Index			
Aortic Elastic Modulus (dyn.cm^{-2})			

Valve diseases

PP-113

The limited ability of real-time three dimensional transesophageal echocardiography in the evaluation of aortic paravalvular leaks

Mahmut Yesin[1], Macit Kalçık[1], Sabahattin Gündüz[1], Mustafa Ozan Gürsoy[1], Süleyman Karakoyun[2], Mehmet Ali Astarcıoğlu[1], Emrah Bayam[1], Sinan Cerşit[1], Mehmet Özkan[2]

[1]Kartal Kosuyolu Education and Research Hospital, İstanbul
[2]Kafkas University Faculty of Medicine, Kars

Introduction: Although real-time three dimensional (RT3D) transesophageal echocardiography (TEE) is an established diagnostic method for paravalvular leaks (PVL) in mitral position, it has limited value for aortic PVLs. We aimed to evaluate the ability of RT3D TEE in the visualization of aortic PVLs as compared with two-dimensional (2D) TEE.

Materials and Method: Overall 88 patients with aortic PVLs all diagnosed by 2D TEE were enrolled in this study. Subsequently RT3D TEE was performed for the evaluation of paravalvular defects (Fig. 1a). Full volume color flow utility was used to confirm the regurgitant jet through the defects detected by RT3D TEE (Fig 1b).

Results: Study population consisted of 23 (26.1%) mild, 37 (42%) moderate and 28 (31.9%) severe aortic PVL patients. There were more than one paravalvular defect in 22 patients (total defects: 112). RT3D TEE

detected 12 (10.7%) paravalvular defects in 11 (12.5%) patients (10 severe, 1 moderate PVL). The minimum defect size detected by RT3D TEE was 3x5 mm.
Discussion and Conclusion: RT3D TEE has a limited ability in the evaluation of aortic PVLs as compared with 2D TEE. Severe PVLs are more likely to be detected by RT3D TEE.

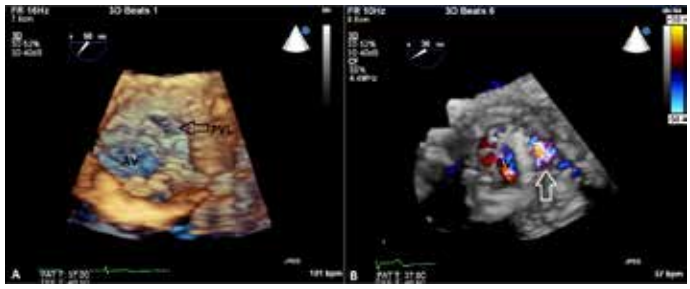


Figure 1. 3D TEE images of aortic paravalvular leaks

Valve diseases

PP-114

The relationship between aortic valve calcification grade and epicardial fat thickness in severe aortic stenosis patients

İlker Gül[1], Ahmet Taştan[1], Mustafa Zungur[1], Muhammed Esad Çekin[1], Ertan Damar[2], Nevzat Uslu[1], Talat Tavlı[1], Faik Fevzi Okur[2]

[1]Şifa University Faculty of Medicine, İstanbul
[2]Şifa University Hospital, İzmir

Introduction: Increased EFT is associated with extension and burden of the coronary artery disease, hypertension, insulin resistance and inflammatory processes such as diabetes mellitus and metabolic syndrome. In this study we aimed to evaluate the relationship between EFT and aortic valve calcification grade (ACG).
Materials and Method: The present study evaluated 114 patients undergoing aortic stenosis (59 females, mean age: 78.0±7.3 years) from June 2013 to April 2015. The degree of aortic valvular calcification (ACG) in patients with aortic stenosis was determined with prospectively ECG-gated 128-MDCT. EFT was measured with echocardiographic methods at the end of the diastole. Briefly, the AV calcifications were graded qualitatively as grade 1 (no calcification), grade 2 (mildly calcified; small isolated spots), grade 3 (moderately calcified; multiple larger spots); or grade 4 (heavily calcified; extensive calcification of all cusps). In our study patients devided three groups according to the ACG.
Results: There was no difference between the groups in terms of mean age, body mass index, smoking, the number of the patients with hypertension, diabetes mellitus and laboratory (Table 1). Grade-4 ACG groups, EFT mean was higher than Grade-2 ACG group (p=0.018) (Figure 1). The correlation coefficient (r) Agatston score and EFT was found to be 0.314.
Discussion and Conclusion: In our study, the agatston score showed a moderate level positive correlation with end-diastolic EFT. In conclusion, calculating the EFT thicknes in the patients with aortic stenosis may provide useful information about aortic valve calcification during the echocardiographic evaluation of patients.

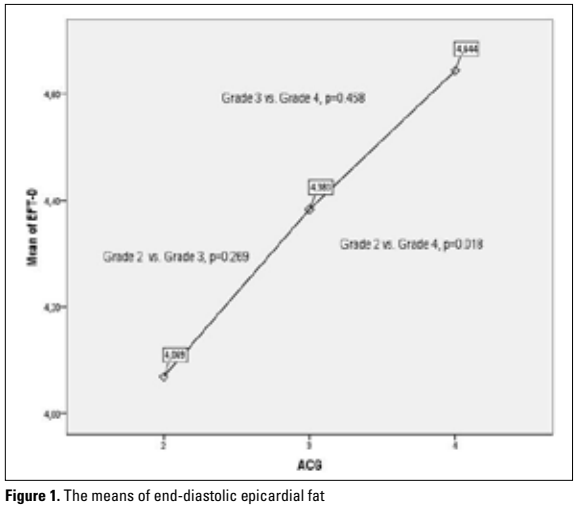


Figure 1. The means of end-diastolic epicardial fat

Table 1

	Grade 2	Grade 3	Grade 4	p value
Coronary Artery Disease, %	26 (57.8%)	16 (44.4%)	19 (57.6%)	0.419
Hypertension, %	31 (68.9%)	19 (52.8%)	18 (59.6%)	0.260
Diabetes Mellitus, %	15 (33.3%)	8 (22.2%)	9 (27.3%)	0.539
Hyperlipidemia, %	22 (48.9%)	13 (36.1%)	14 (42.4%)	0.512
Agatston score	1573±553	3217±880	5319±1036	<0.001
EFT (mm)	4.07±0.76	4.39±0.76	4.64±1.19	0.023

Valve diseases

PP-115

The value of mitral transprosthetic gradients obtained by transthoracic echocardiography in estimation of severe paravalvular leaks

Macit Kalçık[1], Mahmut Yesin[2], Mustafa Ozan Gürsoy[2], Sabahattin Gündüz[2], Mehmet Ali Astarcıoğlu[2], Süleyman Karakoyun[3], Emrah Bayam[2], Sinan Cerşit[2], Mehmet Özkan[3]

[1]İskilip Atıf Hoca State Hospital, Çorum
[2]Kartal Kosuyolu Education and Research Hospital, İstanbul
[3]Kafkas University Faculty of Medicine, Kars

Introduction: Paravalvular leakage (PVL) is one of the serious complications after prosthetic valve replacement. Although transesophageal echocardiography (TEE) is the fundamental diagnostic method, transthoracic echocardiography (TTE) may predict the presence of PVL necessitating further evaluation of the patient by TEE. We aimed to evaluate the value of TTE derived transprosthetic gradients in prediction of severe mitral PVL as confirmed by TEE.
Materials and Method: Three groups of patients with prosthetic mitral valves (129 with severe PVL, 91 with mild to moderate PVL and 100 controls without PVL) were enrolled retrospectively in this study. All subjects had undergone TTE and subsequently TEE examination for evaluation of prosthetic mitral valves. Patients with additional obstructive prosthetic valve pathologies were excluded. Mean and maximum transmitral gradients and effective mitral orifice areas (MVA) obtained by TTE and TEE were recorded. The heart rate was maintained between 60-80 beats/min during all echocardiographic examinations.
Results: There was a good correlation in terms of mean and maximum transmitral gradients and MVAs between TTE and TEE results of all study population (r=0.91, p<0.001; r=0.93, p<0.001 and r=0.87, p<0.001 respectively). The mean gradients by TTE did not differ significantly between patients with severe PVL, mild to moderate PVL and controls (7.6±1.2; 7.4±0.9 and 7.3±1.2 respectively p=0.207) (Fig. 1a) while there was a significant difference in terms of maximum gradients between the groups (20.2±2.8; 15.1±2.6 and 11.6±2.1 respectively p<0.001) (Fig. 1b). A maximum transmitral gradient of >21.5 mmHg while mean gradient was <0.001) by receiver-operating characteristic curve analysis.
Discussion and Conclusion: Increased transthoracic maximum gradients in patients with normal mean gradients may be a predictor for mitral PVL necessitating further TEE examination.

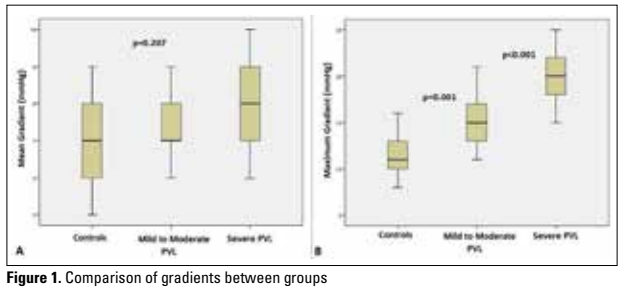


Figure 1. Comparison of gradients between groups

Heart failure

PP-116

Psychosocial assessment of left ventricular assist device and heart transplantation candidates

Hicran Tülüce, Tolga Sinan Güvenç, Murat Sargın, Ahmet Ekmekçi, Gökçen Orhan, Serap Aykut Aka, Mehmet Eren

[1]Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul

Introduction: Psychosocial factors may affect postoperative left ventricular assist device (LVAD) and heart transplantation (HT) outcomes. Preoperative psychosocial assessment serves identify potential risk factors and provides psychosocial information about patients. The aim of this study is psychosocial assessment of LVAD and HT candidates and manage the psychosocial interventions.
Materials and Method: We interviewed patients with heart failure who undergo LVAD and HT between February 2013 and April 2015 and prospectively applied the PACT (The Psychosocial Assessment of Candidates for Transplantation). Prior to LVAD implantation and HT surgery, patients underwent a psychosocial evaluation based on a 50-90 minute semi-structured interview by transplant psychologist. Interviews was included medical history, social history, life style factors and psychological health. The PACT has been used after interview and each patient was rated according to PACT (PACT rating of 0-4). Additionally partners of patients underwent an interview to assess psychosocial support by families. Multidisciplinary team discussed on psychosocial characteristics and risk factors and decided on candidacy of HT and LVAD and psychosocial interventions.
Results: We reviewed 42 adult patients (83.3% men, 16.7 % women, mean age 44,05) with heart failure before LVAD implantation and HT. 4 (9.5%) patients found to be unacceptable candidates for LVAD implantation and HT on psychosocial grounds (PACT rating of 0). After psychosocial assessment, psychosocial support and interventions was planned for 15 patients with low scores (PACT rating of 1 and 2). 8 (19.0%) patients referred to psychiatric treatment. During this period, 5 patients underwent to HT and 20 patients underwent to LVAD implantation. Our preliminary findings indicated that low scoring candidates (PACT rating of 1 and 2) has some compliance problems after LVAD implantation and HT. Psychosocial support was given both these patients and their partners.
Discussion and Conclusion: Preoperative psychosocial assessment of HT and LVAD candidates and perioperative psychosocial screening process should be a part of treatment. HT and LVAD patients needs psychosocial support at the all stages of their treatment. The PACT is a useful instrument for psychosocial assessment and screening of candidates for LVAD and HT. Further psychosocial research and intervention programs should be developed to determine the psychosocial needs and to enhance the compliance of LVAD patients.

Heart failure

PP-117

Association of osteopontin with left ventricular diastolic dysfunction in obesity

Musluhittin Emre Erkuş[1], İbrahim Halil Altıparmak[1], Hatice Sezen[1], Recep Demirbağ[1], Zekeriya Kaya[1], Emin Savik[1], Nurten Aksoy[1], Abdulselam İlter[2], Enes Çon[1]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Şanlıurfa Training and Research Hospital, Şanlıurfa

Introduction: Expression of osteopontin increases in myocardium subject to pathological states such as myocardial infarction. The increased expression is shown to be associated with heart failure. Obesity is the predictor of cardiovascular events. The study aims to investigate whether osteopontin is related to left ventricular diastolic dysfunction (LVDD) in asymptomatic subjects with body mass index (BMI) ≥25.
Materials and Method: One hundred three apparently healthy subjects were included in the study. The subjects were divided into the three groups according to their BMI and presence of LVDD: Group I (control group, BMI <25, n=41), group II (BMI ≥25, with LVVD, n=32), and group III (BMI ≥25, without LVDD, n=30). In all subjects; an ELISA assay kit (Quantikine; R&D Systems) was used to measure osteopontin levels and transthoracic echocardiography was used for diagnosis of LVDD.
Results: Mean age of the subjects was 39.6±8.2 years (21 to 62 years) (60% men). Baseline characteristics were shown in table 1. Osteopontin levels were the highest in the group III, and the significant difference in the groups was shown between the group III and the others (all of p <0.05, ANOVA). LVDD was associated with osteopontin in logistic regression model (p=0.025, OR=0.175 (95% CI; 0.038-0.804).
Discussion and Conclusion: Presence of LVDD was associated with increased osteopontin levels. This result suggests that myocardial injury has been existed, even if they are asymptomatic.

Heart failure

PP-118

The role of hepcidin molecule in anemia of chronic heart failure and the relationship between increased rdw (red blood cell distribution width)

Selda Doğan[1], Dilek Yeşilbursa[1], Saim Sağ[1], Bülent Özdemir[1], Zehra Serdar[2], Osman Akın Serdar[1], Ali Aydınlar[1]

[1]Uludağ University Medical Faculty, Bursa
[2]Uludağ University Medical Faculty Biochemistry Department, Bursa

Introduction: Anemia and increased red cell distribution width (RDW) has been demonstrated to be independently associated with increased risks of hospitalization and all-cause mortality in patients with chronic heart failure (CHF). The mechanisms underlying anemia in CHF are not fully understood and probably multifactorial. Hepcidin is an iron regulatory peptide that is synthesized in the liver to suppress iron absorption and utilization. In this study we aimed to investigate the relationship between the increase in the RDW and hepcidin levels and to understand the role of hepcidin in CHF with anemia.
Materials and Method: Fifty-eight CHF patients (anemic group = 30; non-anemic group = 28) and 25 controls were included in the study. Patients were compared in terms of demographics and clinical characteristics, transthoracic echocardiography, haemogram and anemia parameters, hepcidin-25 levels, pro-BNP (brain natriuretic peptide) and renal function tests.
Results: Among patients with anemia, 83% of these had iron deficiency anemia and 17% of these had chronic disease anemia. In 46 patients RDW values were above 14,5%. Twenty-five of these patients were in the anemia group and 21 patients were in the non-anemic group. Levels of hepcidin-25 were found the lowest in CHF patients with anemia, were highest in the CHF patients without anemia (p=0,049). CHF patients with iron deficiency anemia had lower values of hepcidin-25 as expected but in CHF patients overall hepcidin-25 values were higher, furthermore ferritin, an acute phase reactant of inflammation, was also higher in this group, so we interpreted this result as an indicator of inflammatory process. As the median values for the three groups were evaluated, RDW values were significantly different among the groups (p<0,001). The group with the highest value of RDW was the CHF with anemia. RDW was negatively correlated with left ventricular ejection fraction (r=-0,586, p<0,001), and positively correlated with proBNP (r=0,410, p=0,001). Hepcidin-25 was negatively correlated with RDW although was not statistically significant (r=-0,212, p=0,073).
Discussion and Conclusion: In conclusion, increased RDW and anemia were known as poor prognostic factors in CHF patients and it is important to slow down this multifactorial pathological process and raising the level of hemoglobin. Low levels of hepcidin-25 seem to be the result rather than a cause of anemia in patients with heart failure. However, to better understand the role of hepcidin-25 in this process, multicentered, randomized studies with larger patient groups are required.

Heart failure

PP-119

Low-level vitamin d is associated with atrial fibrillation in patients with chronic heart failure

Erdal Belen[1], Ahmet Çağrı Aykan[2], Ezgi Kalaycıoğlu[2], Mustafa Azmi Sungur[3], Aylin Sungur[3], Mustafa Çetin[4]

[1]Okmeydanı Training and Researc Hospital, İstanbul
[2]Ahi Evran University Research and Education Hospital, Kırşehir
[3]Kahramanmaraş State Hospital, Kahramanmaraş
[4]Private Tayyip Erdoğan University, Rize

Introduction: Atrial fibrillation (AF) frequently accompanies heart failure (HF), and causes exacerbation of symptoms and treatment failure in such patients. Vitamin D was recently suggested to be an important mediator of cardiovascular disease, including HF.The aim of this study was to evaluate the relationship between vitamin D deficiency and AF in patients with chronic HF.
Materials and Method: The study included 180 chronic HF patients that were were divided into 2 groups based on having sinus rhythm [AF (–) group] or chronic AF [AF (+) group]. Vitamin D status was assessed via measurement of the serum 25-hydroxyvitamin D (25[OH]D) concentration.
Results: Mean age of the patients was 66 ± 8.7 years and 53.9% were male. There weren't any significant differences in age, gender, body mass index, etiology or chronic HF stage between the 2 groups. The vitamin D level in the AF (+) group was significantly lower than in the AF (–) group (11.05 ng /mL vs. 20 ng/mL, p<0.001) and the parathyroid hormone level was significantly higher in the AF (+) group (76.7 vs. 55 pq mL, p<0.001). The left atrium to body surface area ratio (LA/BSA) was significantly higher in the AF (+) group (45.03 mm/m² vs. 42.05 mm/m², p<0.01). Independent predictors (based on multiple regression) of AF were vitamin D level (OR = 0.854, 95% CI: 0.805-0.907, p<0.001) and LA/BSA ratio (OR = 1.077, 95% CI: 1.003-1.156, p<0.05). The optimal vitamin D cut-off value for the prediction of AF was 16.50 ng /mL, with a sensitivity of 76.0% and specificity of 65.5% (AUC = 0.75, 95% CI: 0.67-0.82).
Discussion and Conclusion: A low plasma vitamin D concentration was strongly associated with AF in patients with chronic HF.

Heart failure

PP-120

Biomarkers in prediction of decompensation and mortality after hospitalisation for acute heart failure

Azra Durak-Nalbantic[1], Alden Begic[2], Mirza Dilic[2], Mehmed Kulic[1], Alen Lekic[3], Nafija Serdarevic[4], Nerma Resic[1]

[1]University Clinical Center Sarajevo, Institute for the Heart, Cardiology Clinic
[2]University Clinical Center Sarajevo, Bosnia And Herzegovina, Clinic for Vascular Diseases
[3]Sanofi Representative Office, Sarajevo, Bosnia And Herzegovina
[4]Institute For Biochemistry, Clinical Center University of Sarajevo

Introduction: B-type natriuretic peptide (BNP) is well established marker for diagnosis of heart failure (HF) and today it has been recognized more than 40 bio-markers reflecting different active pathological pathways in HF. Aim of this study was to determine levels of BNP, ovarian tumor marker CA125, high-sensitivity cardiac troponin I (hs-cTnI) and cystatin-C (cys-C) in acute heart failure (AHF) and their possible prognostic role.
Materials and Method: A total of 30 consecutive patients admitted with signs and simptoms of AHF were evaluated prospectively. Patients with acute coronary sindrome were exluded from study. At admission blood samples were collected for the measurement of serum BNP (BNP 1), CA125, hs-cTnI and cys-C. On discharge we tested again BNP (BNP 2) for calculation of its procentual reduction. Patients were followed for next 6 months for 2 endpoints: hospital readmission due to decompensation and death.
Results: The median age of the patients was 75 years (IQR 62-78 years). Heart failure with preserved ejection fraction (HFpEF) was present in 7 (23.3%) and heart failure with reduced ejection fraction (HFrEF) in 23 patients (76.7%). During follow-up period 13 patients (43%) were hospitalised due to decompensation and 7 patients died (23.3 %). Median BNP 2 levels were higher in HFrEF group compared to HFpEF group: 571,6 (IQR 346,2-1511,5) pg/ml vs 264 (IQR 192,3-388,6)pg/ml, p=0.023). Patients with HFrEF had higher median CA125 levels compared to patients with HFpEF: 193,8 (129,9-331)U/ml vs 74 (IQR 36,8-256,2) U/ml, p=0.015). Comparing HFrEF and HFpEF group, we didn' t find difference in levels of hs-cTnI (34.4 vs 38 pg/ml, p=0.228), as well of the cys-C (1.54 vs 1.22 mg/l, p=0.109). Percentage of BNP reduction was higher in non-hospitalized (65.67±21.89 %) than in readmitted patients (40.71±27.66%), with difference of 24.95 (95% CI 4.91-44.99), p=0.017). Discharge BNP median values (BNP2) for readmitted patients (1094.75 pg/ml) were higher compared to non-hospitalized patients (333.25 pg/ml), p=0.008. We didn't find significantly higher levels of CA125, hs-cTnI and cys-C in patient with decompensation endpoint.
Discussion and Conclusion: Patients who were hospitalised due to decompensation had higher BNP discharge levels and less pronounced reduction of BNP. Levels of BNP, CA125, hs-cTnI and cys-C were not lower in survivors compared to patients with death endpoint. Higher BNP and CA125 levels in patients with HFrEF are reflecting more extensive myocytes stress, volume overload and congestion compared to population with HFpEF.

Heart failure

PP-121

Alternative medicine and heart failure: should we focus on perception?

Hakkı Kaya[1], Osman Beton[2], Hasan Yücel[1], Selda Eraslan[3], Burcu Yağmur[4], Burak Açar[5], Ahmet Çelik[6], Ahmet Ekmekçi[7], Didem Oğuz[8], Hasan Güngör[9], Mevlüt Demir[10], Kurtuluş Karaüzüm[11], Gürkan Acar[12], Meltem Refiker Ege[13], İbrahim Sarı[14], Mehmet Birhan Yılmaz[1]

[1]Cumhuriyet University, Faculty of Medicine, Sivas
[2]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[3]Eskişehir Osmangazi University Faculty of Medicine, Eskişehir
[4]Ege University Faculty of Medicine, İzmir
[5]Türkiye Yüksek İhtisas Hospital, Ankara
[6]Mersin University Faculty of Medicine, Mersin
[7]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[8]Başkent University Faculty of Medicine, Ankara
[9]Adnan Menderes University, Faculty of Medicine, Aydın
[10]Ankara Numune Training and Research Hospital, Ankara
[11]Kocaeli University Faculty of Medicine, Kocaeli
[12]Kahramanmaraş Sütçü İmam University Faculty of Medicine, Kahramanmaraş
[13]Private Koru Hospital, Ankara
[14]Marmara University Faculty of Medicine, İstanbul

Introduction: Alternative medicine remains as a problematic area in the management of HF patients
Materials and Method: TREAT-HF (Turkish Research Team-Heart Failure) is a network of 16 HF centers in

Turkey. Herein, combined cohort of 2013-2014 was evaluated and patients who utilize alternative medicine (group1) were compared with those who were not (group2).
Results: Mean age of whole cohort was 60.8±13.8 years, and there were 891 HF patients who responded to the question of "do you utilize alternative medicine" in the questionnaire. There were less females in group1 than in group 2 (M/F, 146/41 vs 490/214, p=0.023). Mean EF was 32±9% versus 32±9% (p=0.815) in group1 and group 2 respectively. Distribution of NYHA Class was similar in group 1 and group 2 (9.7-44.6-38.3-7.4% vs. 11.1-47.3-37.5-4.2%, p=0.328). There was no difference with regard to educational level such that 7.5% of patients in group 1 versus 6.7% of patients in group 2 educated from a university (p=0.683). However, 98.4% of patients in group 1 stated that "HF is a dangerous disease" versus 92.2% of patients in group 2 (p=0.023). 47.3% of patients in group1 versus 60.7% of patients in group 2 were keeping HF-related dietary advices (p=0.001). Furthermore, 33.3% of patients in group1 versus 23.7% of patients in group2 think that some of their guideline directed medical therapy is useless (p=0.008). 138 patients were followed up for HF-related rehospitalization and CV death for 11.9±4.3 months. Group1 patients experienced >2 HF-related rehospitalizations more frequently than group2 patients on follow up (20.7% vs 7.4%, p=0.040), and there was no difference with regard to survival (85.3% vs 87.4%, p=0.905).
Discussion and Conclusion: Use of alternative medicine seems to be associated with rehospitalizations along with undesired attitudes.

Heart failure

PP-122

Perceived benefits of implantable cardioverter defibrillator implantation among heart failure patients and its relation to quality of life

Kevser Balcı, Mustafa Balcı, Mehmet Kadri Akboğa, Fatih Şen, Burak Açar, Samet Yılmaz, Emek Ediboğlu, Orhan Maden, Hatice Selçuk, Timur Selçuk, Ahmet Temizhan, Sinan Aydoğdu

Türkiye Yüksek İhtisas Training and Research Hospital, Ankara

Introduction: Patients with heart failure and implantable cardioverter defibrillators may misunderstand the indication of cardioverter defibrillator implantation due to unsatisfactory information. The goal of this study is to evaluate the patient perspective of implantable cardioverter defibrillator indication and its relation to quality of life, as well as to identify probable communication gaps between doctors and implantable cardioverter defibrillator receivers.
Materials and Method: A total of 119 patients with heart failure who were implanted VVI-implantable cardioverter defibrillators were evaluated in outpatient clinics. In a questionnaire, patients were asked about the indication of the implantable cardioverter defibrillator procedure.
Results: This study showed that most of the patients (n=92, 77.3%) believed that implantable cardioverter defibrillator was implanted for improvement of heart dysfunction or for symptom relief. According to the perceived benefits groups, physical function, general health, vitality, and role physical scores were significantly lower in the symptom relief group (p<0.05).
Discussion and Conclusion: Patients with heart failure and implantable cardioverter defibrillators mostly believed that the cardioverter defibrillator implanted for improving heart function or symptom relief. Doctors play a significant role when a patient is first referred for cardioverter defibrillator implantation because less informed patients are more prone to misunderstand the procedure's benefits. Moreover, unfulfilled expectations may lead to loss of confidence in applied therapies and result in worse health outcomes.

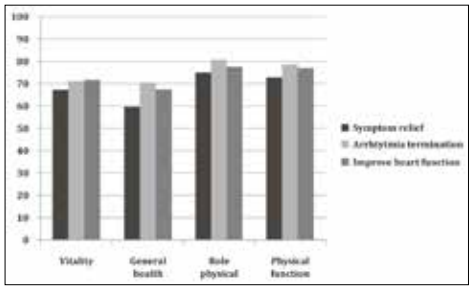


Figure 1. Difference in QOL structs

Table 1. Demographic and clinical data

Variables	All patients (n=119)	Symptom relief (n:45)	Arrhythmia termination /save life(n:27)	Improve heart function (n:47)	p-value
Age	60.13±11.5	63.74±9.15	52.67±11.70	60.89±11.78	<0.001
Sex					<0.001
Male	102 (85.7%)	35 (77.8%)	23 (85.2%)	44 (93.6%)	0.045
Female	17 (14.3%)	10 (22.2%)	4 (14.8%)	3 (6.4%)	0.044
Education level					<0.001
Uneducated	30 (25.2%)	15 (33.3%)	2 (7.4%)	13 (27.6%)	
Primary school	43 (36.2%)	14 (31.1%)	8 (29.6%)	21 (44.6%)	
Middle school	23 (19.3%)	13 (28.8%)	4 (14.8%)	6 (12.7%)	
High school/ University	23 (19.3%)	3 (6.8%)	13 (48.2%)	7 (15.1%)	
Primary prevention	80 (67.3%)	35 (77.7%)	8 (29.6%)	37 (78.7%)	p<0.05
Secondary prevention	39 (32.7)	10(22.3%)	19 (70.4%)	10 (21.3%)	<0.001
LVEF (%)	24.95±5.15	24.24±5.21	24.59±4.42	25.83±5.44	0.253

Heart failure

PP-123

The relationship between iron deficiency and aortic elastic properties in patients with heart failure

Gökay Nar[1], Sinan İnci[2], Gökhan Aksan[3], Özgür Kaplan[4]

[1]Ahi Evran University Research and Education Hospital, Kırşehir
[2]Aksaray State Hospital, Aksaray
[3]Şişli Etfal Training and Research Hospital, İstanbul
[4]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul

Introduction: Recent studies have demonstrated that independent from the hemoglobin level, the decreased iron concentration is an important predictor in prognosis of patients with heart failure (HF). The aim of the current study is to evaluate the relationship between iron deficiency (ID) and arterial stiffness by calculating the elastic parameters of aorta, which were measured echocardiographically in patients with heart failure.
Materials and Method: A total 126 patients were included in the study.The patients were divided into three groups as the patients with HF who had ID and anemia (group 1, n=42), the patients with HF who hadID but no anemia (group 2, n=44), and the patients with HF who had no ID (control group, n=40). The basal clinical characteristics and laboratory findings were recorded in all patients. The echocardiographic measurements were performed and elastic properties of aorta were calculated.
Results: When the groups were evaluated in terms of basal clinical characteristics, drug use, and laboratory parameters, there was a significant difference between group 1, group 2, and group 3 in terms of heart rate (p<0.001), iron (p<0.001), ferritin (p<0.001), and transferritin (p<0.001) levels. The aortic strain, distensibility, and aortic stiffness index were significantly different in three groups (Table). In correlation analysis, there was a significant correlation between elastic parameters of the aorta and ferritin levels.
Discussion and Conclusion: The current study demonstrated that the aortic stiffness increased in both anemic and non-anemic patients with HF. Furthermore, we detected a significant correlation between iron levels and the elastic properties of the aorta. These findings demonstrate that iron levels affect aortic stiffness in patients with HF.

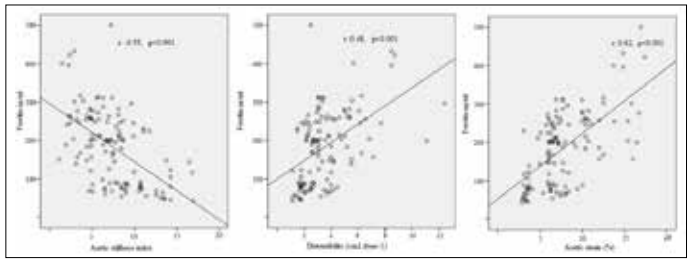


Figure 1. Correlation of ferritin and aortic stiffness

Table 1. The measurement of aortic elastic properties

	Group I (n=42)	Group II (n=44)	Group III (n=40)	P
Aortic strain (%)				
	5.60±2.08	7.61±2.80¶	9.98±3.99¶§	<0.001
Distensibility (cm2.dyne-1)				
	2.45±0.93	3.52±1.40¶	4.74±2.45¶§	<0.001
Aortic stiffness index				
	9.40±3.02	7.38±3.69¶	5.28±2.26¶§	<0.001

Heart failure

PP-124

Simpliffied Thoracic ultrasound in diagnosis of heart failure

Mikheil Tsverava

[1]Chapidse Cardiology Center

Introduction: Pulmonary edema (PE), due to fluid retention and redistribution is the cardinal manifestations of heart failure (HF). The aim of this investigation was to study the effectiveness of simplified thoracic sonography in diagnosis of PE.
Materials and Method: Material and Methods. 400 patients with II-IV NYHA functional class HF were evaluated (105 patients with diastolic and 295 with systolic HF). The control group consisted of 160 patients with different heart diseases (CHD, Hypertension, Aortic valve diseases), without HF. Sonographic examination of a lung was done with 3,0-4,0 MgHz convex or sector probe, from 10 points on thoracic wall, which corresponded to the projection of lower, middle and upper lobes of right lung and upper and lower lobes of left lung.
Results: During ultrasound examination 94.5% of patients with HF had "Comet tail phenomenon" (CTPh), which was registered only in 35,5% patients without HF (p > 0,001). In DHF group CTPh was registered in 90,5% and in systolic HF group in 95,9% patients. In 91% of patients with HF CTPh was registered from 3 and more registration points. In control group CTPh was registered from more than 3 points only in 2 (1,3%) patients. The best results in diagnosis of DHF can be achieved if we take "3 and more registration points" as a reference point for diagnosis of pulmonary congestion (sensitivity - 0,911, specificity - 0,942, positive predictive value 0,975). The time of examination by simplified method for evaluation of CTPh and pleural space took 3-4 minutes.
Discussion and Conclusion: In patients with HF during pulmonary ultrasound examination significantly often was registered CTPh. The count of registration points from the thoracic wall of CTPh 3 and > is sensitive and specific sign of HF. The simplified thoracic ultrasound is highly effective in diagnosis of PE in patiets with HF.

Heart failure

PP-125

One-year follow-up outcomes ESC Heart Failure Long-Term Registry (ESC-HF LT) and differences to EORP registry HF Center in the Clinical Hospital Mostar Bosnia and Herzegovina

Emir Fazlibegović, Mustafa Hadiomerović, Danijel Pravdić, Diana Zelenika, Benjamin Palić, Majo Ceško, Omer Manov

Clinical Hospital Mostar, Bosnia and Herzegovina

Introduction: The ESC-HF Long-Term registry was aimed to describe clinical epidemiology and 1-year outcomes of patients with heart failure (HF) and to identify the prognostic predictors of these outcomes compared with HF Centre Mostar in Clinical Hospital Mostar, Bosnia and Herzegovina.

Materials and Method: The ESC-HF Long Term Registry is a prospective, observational study conducted in 211 Cardiology Centers of 21 European and Mediterranean countries, members of the European Society of Cardiology (ESC), a total of 12,440 patients were enrolled (from May 2011 to April 2013), 40.5% with acute HF (hospitalized patients) and 59.5% with chronic HF (outpatients) included the 291 patients from Mostar Center (255 hospitalized HF and 36 CHF). Kaplan-Meier mortality rate at 1 year was 23.6% for acute HF patients and 6.4% for chronic HF outpatients in EORP Regisry, and Cumulative survival is 40% for Hospitalized HF and 60% for chronic HF in Mostar Center.

Results: There were differences in mortality in Mostar Center, which may reflect differences in the characteristics and management of these patients.

Discussion and Conclusion: The ESC-HF-LT registry shows that 1-year mortality of patients with acute heart failure is still high while the mortality of chronic HF patients is low. This registry provides the opportunity to know the management and outcomes of patients with HF and identify areas for improvement. Our data in Mostar Center show that short-term survival is better in men compared to that of female patients. The better survival rates were observed in patients with non-ischemic heart failure, while other risk factors (diabetes, previous stroke or transitory ischemic attack, arterial hypertension, chronic obstructive lung disease and renal insufficiency) were associated with higher rates of mortality.Patients with high CRP and normal leucocites have more mortality.

Cardiovascular surgery

PP-126

The predictive value of fragmented QRS complex for in-hospital cardiovascular mortality in patients with ST segment elevation myocardial infarction U

Derya Öztürk[1], Ömer Çelik[1], Mehmet Ertürk[2], Serkan Aslan[2], Hüseyin Çakmak[2], Ender Öner[2], İhsan Bakır[2]

[1]İstanbul Mehmet Akif Ersoy Training and Research Hospital, İstanbul
[2]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul

Introduction: Urgent CABG may be considered in the patients with STEMI after unsuccessful or complicated PCI, mechanical complications of acute MI, late presentation or recurrent ischemia, cardiogenic shock, after failed fibrinolysis, life-threatening ventricular arrhythmias The presence of fQRS was demonstrated as an independent predictor of decreased myocardial perfusion and left ventricular function in patients with ischemic heart diseaseThe aim of the present study was to investigate the predictive value of fQRS complex on admission electrocardiography (ECG) for in-hospital cardiovascular mortality in patients with STEMI undergoing urgent coronary artery bypass grafting.

Materials and Method: In this retrospective study, 102 patients, who were diagnosed with STEMI and underwent urgent CABG operation between September 2009 and January 2015, were included.The electrocardiography of the study patients were reviewed for the presence or absence of the fQRS complex on admission ECG. Moreover, the in-hospital outcomes of all study patients were recorded from the patient files.

Results: In hospital cardiovascular mortality rate was 11.7%. The rate of fQRS complex was higher in the non-survivor group than the survivors (p=0.03). In the univariate analysis, LVEF, troponin, creatinine, grade 3 ischemia, f QRS, cardiogenic shock were found to be statistically significant for predicting mortality however Serum creatinine (OR: 4.253; 95% CI: 1.279 -14.140; p=0.01), LVEF (OR: 0.878; 95% CI: 0.771-1.001; p=0.05) and presence of cardiogenic shock (OR: 4.552; 95% CI: 1.126-18.409; p=0.03) were found to be significant independent predictors of in-hospital cardiovascular mortality after adjustment of other risk factors in the multivariate analysis. When we assesed the association between f QRS and long term mortality, in the Kaplan–Meier survival analysis, the long-term survival of f QRS positive patients was significantly lower than those f QRS negative (p=0.04).

Discussion and Conclusion: The major predictors of in hospital mortality in patients underwent urgency CABG were creatinin, low EF and cardiogenic shock. The presence of f QRS was associated with long term survival and it seems related with in hospital mortality. However it was not found independent predictor of in hospital mortality.

Cardiovascular surgery

PP-127

Evaluation of early functional capacity after CABG surgery

Zehra Karahan[1], Hülya Arıkan[2], Yasemin Çırak[3], İlknur Erden[1], Mehmet Arslan[1]

[1]Gülhane Military Medical Academy (GMMA) Ankara, Ankara
[2]Hacettepe University, Ankara
[3]Turgut Özal University, Ankara

Introduction: Coronary heart disease is an important public health problem worldwide. It is also the leading cause of mortality and morbidity in the industrialized world. Therefore, American Heart Association proposed cardiac rehabilitation program as an essential part of care for cardiac patients to improve functional capacity. The aim of this study was to evaluate the effectiveness of phase I cardiac rehabilitation program on functional status and some hemodynamic responses in patients after coronary artery bypass graft (CABG) surgery.

Materials and Method: 30 patients who are planning to undergo elective cardiac surgery were included in our study. Including criterias are being age between 40-80, going fist time cardiac surgery and don't have orthopedic and neurologic problems. Mean age of patients is 55.26±8.61. Functional capacity of patients was evaluated by exercise test, 6-minute walking test and echocardiography at preoperative period. At postoperative period all patients included a inpatient cardiac rehabilitation program consist of gradually mobilisation, nutritional consultation and risk factor management. 6 minute walk test repeated at postoperative 6th day. One week after discharging from hospital functional capacity evaluated by 6 minute walk test again. Heart rate, systolic and diastolic blood pressure, SaO2 were evaluated before and after the tests.

Results: Ejection fraction of patients were 57.99±6.63. The distance walked at preoperative 6 minute walk test decreased at postoperative period (from 503.83±79.07 to 433.90±76.56). 6 minute walk test distance at last test was 459,40±66.94. The differences between the distances walked at tests were statistically significant. Resting heart rate significantly increased after CABG surgery (from 78.63±9.18 to 87.43±9.22). After discharging resting heart rate decreased 86.97±10.26. Similarly, maximal heart rate increased postoperatively and decreased one week after discharging. Resting systolic and diastolic blood pressure were not significantly different between preoperative period, 6.th postoperative day and 7 days after discharging. SaO2 decreased postoperatively but this was not statisticly significant.

Discussion and Conclusion: It seems the early functional capacity of patients is getting worsen after CABG surgery. This can be because of patients' fear of moving and pain of insicions. One week after discharging the distanced walked in 6 minute test improved compared with second test. We can say that as the pain and fear is decreasing, patients start to walk more. But we need large and long term studies for evaluating functional capacity after CABG.

Cardiovascular surgery

PP-128

The effects of NAC on renal functions evaluated by NGAL blood levels in geriatric patients undergoing CABG

Görkem Çarşanba[1], Mustafa Aldemir[1], Halit Buğra Koca[1], Elif Doğan Bakı[1], Nilgün Öztürk Kavrut[2], Ali Sait Kavaklı[2], Fahri Adalı[1], Mustafa Emmiler[2], Osman Tansel Darçın[1]

[1]Afyon Kocatepe University Faculty of Medicine, Afyon
[2]Antalya Education and Research Hospital, Antalya

Introduction: Recent conflicting studies on the renal effects of N-acetyl cysteine (NAC) after cardiac surgery have been published. The aim of this study was to evaluate the renal effects of NAC using neutrophil gelatinase-associated lipocalin (NGAL) blood levels in elderly patients undergoing coronary artery bypass surgery.

Materials and Method: This randomized, double-blinded, placebo-controlled study was conducted among geriatric patients (>65 years) scheduled for CABG. A total of 60 consecutive patients were randomly assigned into two groups. The first group received I.V. NAC (n=30) and the second group received placebo (n=30) at induction of anaesthesia and then for 20 hrs. NGAL values were determined and conventional renal function tests were performed.

Results: Plasma creatinine level at the P.O. 24th hr was significantly higher in the placebo group than the NAC group (1.41±0.63 vs 1.13±0.35, p<0.05). The mean serum NGAL level in the third postoperative hour was higher in the placebo group than in the NAC group (104.94±30.51 vs 87.82±25.18, p<0.05). Its level was similar at all other measurement times for the two groups. The number of patients (%) with increased plasma creatinine ≥1.5 mg/dL or >25% of the baseline value at any time of the study period was 27% in the NAC group and 37% in the placebo group, which was statistically significant (p<0.05).

Discussion and Conclusion: In the present study, we found that I.V. N-acetylcysteine infusion in elderly patients undergoing coronary artery by-pass surgery reduced the incidence of acute kidney injury as determined by blood NGAL and creatinine levels.

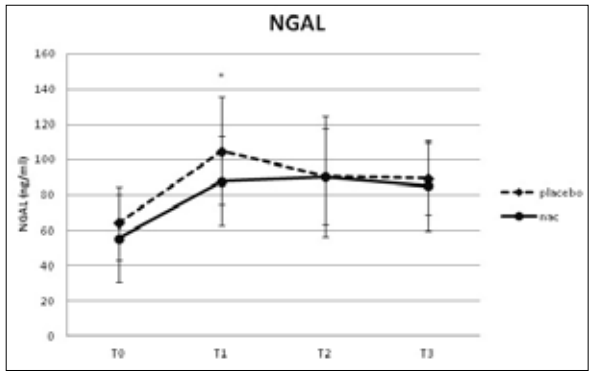


Figure 1. Serum NGAL values during the study

Cardiovascular surgery

PP-129

Is preoperative eosinopenia an independent predictor of early mortality for coronary artery bypass surgery?

Ali Zorlu, Hasan Yücel, Özge Korkmaz, Hakkı Kaya, Sebahattin Göksel, Osman Beton, Öcal Berkan, Mehmet Birhan Yılmaz

Cumhuriyet University, Faculty of Medicine, Sivas

Introduction: Coronary artery bypass graft (CABG) surgery in one the most effective and widely used methods employed in the treatment of ischemic heart disease, but many factors to various degrees are directly associated with perioperative and postoperative problems. In this study, evaluate the relationship between preoperative eosinophil count and postoperative mortality in patients that underwent CABG operation.
Materials and Method: The data of 241 patients (157 males, 84 females), who underwent isolated on-pump CABG operation between 2011 and 2013 in different centers and for whom study data were available, were retrospectively reviewed.
Results: The mean age of patients was 64±11 years. After the follow-up period, 36 (15%) of the 241 patients experienced cardiovascular death. Patients were classified into two groups as those who survived versus those who died. Eosinophil levels were lower among the patients who died compared to the patients who survived (0.8 [0-3.8] vs. 1.7 [0-9.4] 1000 x cells/mm^3, p<0.001). Optimal cut-off level of eosinophil for predicting mortality was determined as ≤1.6 1000 x cells/mm^3, with a sensitivity of 85.7% and specificity of 51.0% (AUC: 0.703, 95% CI: 0.641 to 0.760)
Discussion and Conclusion: Eosinopenia is used as a biomarker for infections, and recently, it was used as the predictor of mortality in pediatric and adult patients in the intensive care units. Eosinopenia after CABG can be related to the endogenous stress hormones, and insufficiency of the existing cardiac status. Eosinophil levels can assist and facilitate risk stratification for patients with CABG.

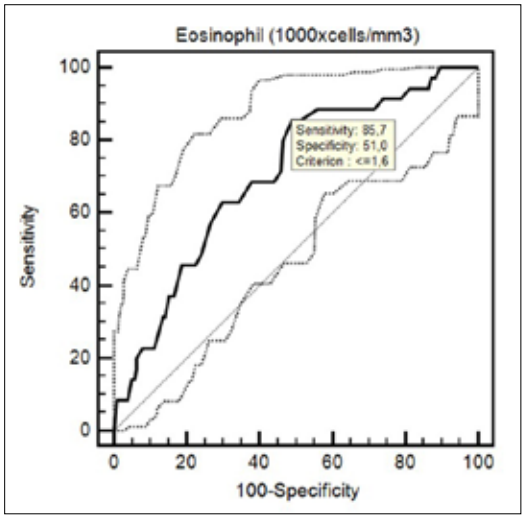


Figure 1. ROC Curve of Eosinophil for mortality

Cardiovascular surgery

PP-130

Investigation of kinesiophopia in patients undergoing cardiac surgery

İlknur Erden, Zehra Karahan, Ufuk Demirkılıç

Gülhane Military Medical Academy (GMMA) Ankara, Ankara

Introduction: Kinesiophopia is defined as fears against activity and physical motion because of painful injury and reccurant injury. Devastating effects of pain increase the fear of recurrent injury and this case increase the avoidence response and result in not use for long time, depression and disability. Aim of our study is evaluate the kinesiophopia in patients undergoing cardiac surgery.
Materials and Method: Mean age of 38.20±11.34 years, 12 male, 5 female patient who have undergone cardiac surgery in GATA Cardivasculary Surgery Clinic, included our study. Patients who have cerebrovascular events, serious aritmias, peripheral vascular disease, communication and concious problems has excluded from study. Ethical committee approval was obtained for this study. Tampa Kinesiophopia Scale-Turkish version is used for evaluating kinesiophopia. Questionaire has done in preoperative, postoperative first day, and 7th day.
Results: As a result of study preoperative kinesiophopia score is 39.82±4.63, postoperative first day 39.00±5.73, 7th day 35.47±5.93 found. These scores shows that patiens have motion fear in preoperative and postoperative first day. Kinesiophopia scores decreased on the postoperative 7th day (p<0.05).
Discussion and Conclusion: Motion fear is present in patients undergoing cardiac surgery. This study can be a guide for the rehabilitation aproach for kinesiophopia. But there is a need further long-term, comprehensive studies.

Cardiovascular surgery

PP-131

Epicardial dissection may solve the saphenous vein graft length problem

Faruk Cingöz

Gülhane Military Medical Academy (GMMA) Ankara, Ankara

Introduction: If a saphenous vein graft length is not enough for proximal anastomosis to the ascending aorta, It will be clarified how to deal with this displeasing situation using epicardial and fatty dissection.
Materials and Method: A saphenous vein graft was anastomosed to the right coronary artery and its proximal site was anastomosed to the ascending aorta. After taking the side clamp, a serious tightening was observed before termination of cardiopulmonary bypass. Epicardial fatty tissue was deeply cut and some venous branches were li-gated with titanium clips. The native right coronary artery line was used to place the vein graft.
Results: Approximately 2 or 3 cm graft length was obtained using this technique. The optimal saphenous vein graft length was proved by this dissection (Fig. 1) and overstretching was corrected.
Discussion and Conclusion: Epicardial dissection should be borne in mind of cardiac surgeons as an alternative approach and can prove to be useful knowledge when a saphenous vein graft is too short in cardiac surgery.

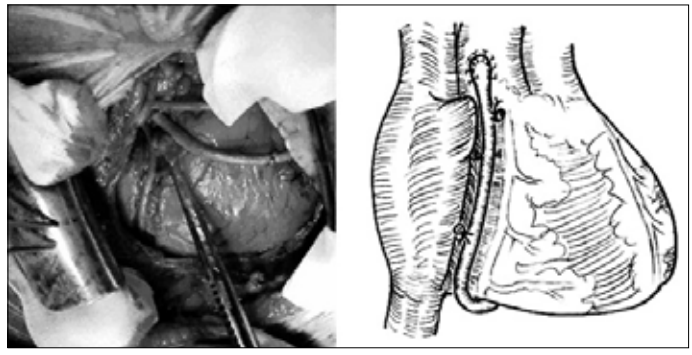


Figure 1. Dissected right coronary artery line

Other

PP-132

Association of pericardial and epicardial adipose tissue with inflammation and oxidative stress and adipose tissue related parameters

Musluhittin Emre Erkuş[1], İbrahim Halil Altıparmak[1], Hatice Sezen[1], Abdullah Taşkın[1], Recep Demirbağ[1], Özgür Günebakmaz[1], Nurten Aksoy[1], Feyzullah Beşli[2]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Şanlıurfa Training and Research Hospital, Şanlıurfa

Introduction: Adipose tissue plays an important part in the development of cardiovascular diseases. It is a metabolically active organ that generates various bioactive molecules, such as adiponectin, resistin and other inflammatory cytokines. The aim of the study is to investigate whether systemic inflammatory, adipose tissue related factors and oxidative stress are associated with pericardial and epicardial fat tissue.
Materials and Method: A total of 81 healthy participants (53 men, 65%) were enrolled in the study. The pericardial and epicardial fat tissue were assessed by transthoracic echocardiography. The serum levels of C-reactive protein (CRP), pentraxin-3, interleukin-6, tumor necrosis factor-α (TNF-α), arylesterase, lipid hydroperoxide (LOOH), adiponectin, and leptin, and plasminogen activator inhibitor-1 (PAI-1) were measured in all participants.
Results: The mean age was 34 ± 9 years. The pericardial and epicardial fat thickness were 4.92±2.62 mm and 1.82±1.10 mm (respectively) and their thickness were similar between male and female subjects (both of p>0.05). The epicardial fat was correlated with age, body mass index (BMI), CRP and IL-6. The pericardial fat thickness was correlated with age, CRP, pentraxin-3, TNF-α, arylesterase, LOOH, adiponectin, and BMI (all of p<0.05). The multivariate linear regression analyses indicated that pericardial fat was independently associated with CRP (ß=0.252, p=0.029), and epicardial fat was independently associated with BMI (ß=0.360, p=0.027).
Discussion and Conclusion: Pericardial fat thickness is more related to inflammatory, adipose tissue related factors and oxidative stress parameters than epicardial fat thickness. Pericardial fat thickness may play a role in the development of cardiovascular diseases.

Other

PP-133

An indicator of subclinical cardiovascular disease in patients with primary osteoarthritis: epicardial fat thickness

Erdal Belen[1], Özgür Karaman[2], Gürkan Çalışkan[2], Oya Atamaner[2], Ömer Aslan[2]

[1]İstanbul Okmeydanı Training and Research Hospital, İstanbul
[2]Kanuni Sultan Suleyman Training and Research Hospital, İstanbul

Introduction: Osteoarhritis (OA) is one of the most common chronic diseases seen in the elderly and it is associated with increased cardiovascular morbidty and mortality. The cause of this association is not fully

known. We aimed to investigate the relationship between epicardial fat and the presence and the grade of primary knee OA for analysing the relationship between visceral adiposity and primary OA and thereby revealing the increased subclinical atherosclerosis and cardiovacsular risk in OA patients.
Materials and Method: In this cross-sectional study, primary knee osteoarthritis and control group were compared with regard to epicardial fat thickness through transthoracic echocardiography. In addition, OA was divided to 4 stages and the relationship between the grade of OA and epicardial fat thickness was analysed. Eighty subjects with primary knee OA and 50 controls were analysed.
Results: There was not a difference between groups with regard to age, gender and BMI. Epicardial fat thickness was greater in primary OA group compared to control group (3,73±1,08 vs 3,30±0,61,respectively, p=0,005). In in-group comparison of OA patients, epicardial fat thickness was detected to increase as the grade of OA increased (p=0,001). A relationship was detected between the presence of OA and epicardial fat thickness and CRP levels in multivariate logistic analysis (p=0,017,p=0,047 respectively).
Discussion and Conclusion: There is a significant relationship between primary OA and epicardial fat thickness which is a part of visceral adipose tissue.These results may indicate the relationship between OA and visceral fat tissue and thereby cardiovascular risk so as not to be able to explain with only body weight.

Other

PP-134

Effects of RAASB on contrast-induced nephropathy and its association with NGAL levels in diabetic patients undergoing coronary angiography

Hüseyin Göksülük, Nurten Kerimli, Yusuf Atmaca, Özgür Ulaş Özcan, Menekşe Gerede, Cansın Tolunay Kaya, Çetin Erol

Ankara University Faculty of Medicine, İbni Sina Hospital, Ankara

Introduction: Contrast-induced nephropathy (CIN) is a common cause of hospital-acquired acute kidney injury (AKI). NGAL represents non-invasive, troponin-like biomarker for the early prediction of AKI in various clinical settings. In this study, we aimed to investigate effects of renin- angiotensin system blockers (RASB) on the development of CIN in diabetic patients after coronary angiography.
Materials and Method: We prospectively enrolled consecutive 80 patients undergoing elective coronary angiography. Serum creatinine (SCr) and plasma NGAL levels were measured at baseline and after intervention (SCr at72. hour and NGAL at 4. hour). CIN was defined as an increase in SCr of ≥25% or 0.5 mg/dl from baseline within 48-72 h after angiography. Patients were divided into two arms based on the use of RASB: RASB (+); Drugs not stopped before the procedure, RASB (-); Drugs stopped 24 h before the procedure.
Results: CIN was observed more common in RASB (+) group than in RASB (-) group, but statisticaly not significant (8 [%19.5] vs. 4 [%10.3], p=0.35). The amount of contrast agent volume and preventive treatment were independent predictors of CIN in multivariete analysis (OR=1,007; 95% CI: 0,999-1,015; p=0.07 for contrast agent volume and OR=6,937; 95% CI: 1,460-32,965; p=0.01 for preventive treatment). Plasma NGAL levels were not elevated at 4. hour post-procedure in CIN(+) patients versus CIN (-) patients (4839±3374 pg/ml versus 4304±1814 pg/ml, p=0.68) (See table).
Discussion and Conclusion: In diabetic patients undergoing coronary procedure, chronic usage of RAASB don't increase the risk of CIN significantly. Plasma NGAL appears to be a powerful early biomarker of AKI, however, in our study NGAL levels didn't increase in contrast-induced nephropathy. In our study, the small sample size and the small number of CIN events are limitations.

Table 1. Comparision of NGAL and serum creatinine levels

Variables	CIN (+) (n=12)	CIN (-) (n=68)	P value
SCr baseline (mg/dl), mean±SD	0,96±0,24	0,89±0,25	0,35
SCr (72. Hour) (mg/dl), mean±SD	1,25±0,30	0,91±0,26	0,001
NGAL baseline (pg/ml), mean±SD	6734±6031	4251±3417	0,56
NGAL (4. Hour) (pg/ml), mean±SD	4839±3374	4304±1814	0,68

Other

PP-135

Assessment of epicardial fat thickness and carotid intima media thickness in preeclemsia

Cihan Altın[1], Haşmet Mesut Özsoy[1], Esin Gezmiş[1], Mustafa Yılmaz[2], Elif Tunç[3], Leyla Elif Sade[4], Haldun Müderrisoğlu[4]

[1]Zübeyde Hanım Research and Practice Hospital, Faculty of Medicine, Başkent University, İzmir
[2]Başkent Universtiy Hospital, Adana
[3]İzmir Military Hospital, İzmir
[4]Başkent University Faculty of Medicine, Ankara

Introduction: Association between preeclampsia (PE) and mortality-morbidity is well known. In third trimester we aimed to investigate carotid intima media thickness (CIMT) and epicardial fat thickness (EFT) which are predictors of subclinical atherosclerosis in PE.
Materials and Method: 72 patients (37 PE and 35 controls) were enrolled. Patients with diabetes mellitus and cardiovascular disease (CVD) were excluded. On B-mode duplex ultrasound; the mean CIMT at the far wall of both left and right common carotid arteries were measured (Figure a). EFT was measured on the free wall of the right ventricle at end-diastole from the parasternal long-axis view by standard transthorasic 2D echocardiography (Figure b).
Results: Groups were similar regarding age and other cardiovascular risk factors. EFT was significantly higher in PE compared to the controls (5.11±1.12 mm vs. 4.21±0.95 mm; p<0.01 respectively). On the other hand there was no significant difference in CIMT between the groups (5.22±1.05mm vs. 4.70±0.87 mm; p>0.05) (Table).
Discussion and Conclusion: EFT is increased in PE unlike CIMT. Non invasive measurement of EFT which is independent predictors of CVD, could be useful to indicate risk of CVD in these patients.

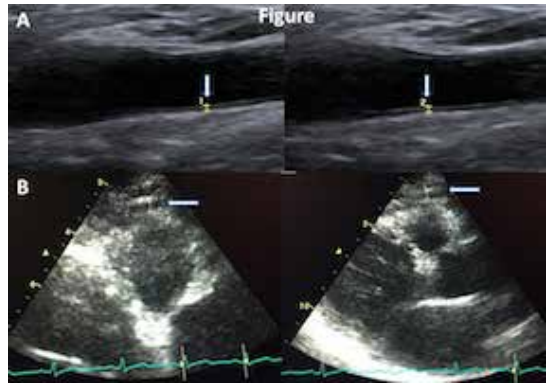


Figure 1. A-B: Preeclampsia, C-D: Control group

Table 1. Comparison of our study group

	Control (n=35)	Preeclampsia (n=37)	P value
Age (years)	30.14±3.52	32.70±6.25	NS
CIMT (mm)	4.70±0.87	5.22±1.05	NS
EFT (mm)	4.21±0.95	5.11±1.12	<0.01

Other

PP-136

Association of epicardial adipose tissue thickness and aortic elastic properties in patients with metabolic syndrome

Musluhittin Emre Erkuş[1], İbrahim Halil Altıparmak[1], Abdullah Taşkın[1], Ali Rıza Akyüz[2], Recep Demirbağ[1], Yusuf Sezen[1], Nurten Aksoy[1], Çağdaş Emre Ayas[1]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Akçaabat Haçkalı Baba State Hospital, Trabzon

Introduction: Metabolic syndrome (MS) is a predictor of cardiovascular disease. In the recent years, it has been shown that epicardial adipose tissue thickness (EATT) is associated arterial stiffness. We aim to investigate that the association of EAAT and aortic elastic properties with MS and its number of components.
Materials and Method: A total of 62 patients (44±8 years, 60% men) with MS and age-gender matched 33 subjects (42±9 years, 62% men) without MS, as the control group, were included in the study. Measurements of MS components were performed according to the standard protocols. Transthoracic echocardiography was used for EATT and aortic measurements. Aortic elastic properties were assessed by aortic strain (AS), aortic distensibility (AD), aortic stiffness index (ASI), and aortic pulse wave velocity (PWV) which was ossilometrically assessed by the Tensiomed arteriograpgh.
Results: Baseline clinical and laboratory characteristics are shown in table 1. As the number of the components of MS increased, whereas aortic strain and aortic distensibility was gradually decreasing, aortic stiffness index was gradually coming down, even if there were no significant difference (all of p>0.05). EATT was also no significant between the groups. However, aortic PWV in patients with MS was significantly higher than the controls (10.17±1.92 vs.8.99±1.67, respectively, p=0.005). In stepwise regression model, aortic PWV was only associated parameters with MS (p=0.023, OR=1.433, 95% CI; 1.052-1.952).
Discussion and Conclusion: In patients with MS, aortic PWV is better for the assessment of aortic elasticity than echocardiographic aortic parameters.

Coronary artery disease / Acute coronary syndrome

PP-137

Body composition and strength in patients with acute myocardial infarction: beyond the obesity paradox

Burak Ayça[1], Fatih Akın[2], Didem Kafadar[1], Fatma Gönül[1], Murat Avşar[1], Sinan Varol[1], Gökmen Kum[1], Ertuğrul Okuyan[1], Mustafa Hakan Dinçkal[1]

[1]Bağcılar Training and Research Hospital, İstanbul
[2]Muğla Sıtkı Koçman Faculty of Medicine, Muğla

Introduction: The impact of obesity on acute myocardial infarction is unknown. The obesity paradox, which states that obesity may be associated with lower morbidity and mortality rates, may be explained by differ-

ent body compositions and increased muscle strength. We aimed to determine whether body composition and muscle strength are correlated with acute myocardial infarction (AMI).
Materials and Method: We studied 218 patients with AMI and 133 age-, gender- and body mass index (BMI)-matched controls without coronary artery disease (CAD). We calculated body composition, including total fat and muscle mass, visceral fat mass and metabolic parameters, including the baseline metabolic rate (BMR), metabolic age and muscle strength of the two groups using a body composition analyser and a handgrip dynamometer.
Results: Patients with AMI had lower weight, total fat mass, BMR and handgrip strength, but greater visceral fat mass in comparison with the control group (p=0.004, p<0.001, p<0.001, p<0.001, and p=0.03, respectively) A multivariate regression analysis demonstrated that increased visceral fat and lower handgrip strength are independently associated with AMI (OR: 1.418; CI 95%: 1.157-1.737, p=0.001 and OR: 0.949, CI 95%; 0.903-0.997, p=0.039, respectively).
Discussion and Conclusion: Increased visceral fat and lower handgrip strength may be associated with CAD.

Table 1. Comparison of patients with AMI and control group

	AMI (n=218)	Control (n=133)	p
BMI	28.1 ± 4.4	28.6 ± 7.3	0.22
BMR	1627 ± 248	1768 ± 284	<0.001
Metabolic age	57.8 ± 12.4	55.4 ± 12.1	0.10
Skeletal muscle mass	31.3 ± 5.0	33.2 ± 4.8	0.01
Handgrip strength	31.9 ± 10.4	38.7 ± 11.7	<0.001
Fatty mass (kg)	21.6 ± 7.8	26.2 ± 12.9	<0.001
Fatty mass (%)	27.6 ± 8.1	29.8 ± 9.8	0.02
Visceral fat (kg)	11.9 ± 3.2	11.0 ± 2.8	0.03

Coronary artery disease / Acute coronary syndrome

PP-138

The association between resistin levels and major advers cardiac events

Ümit Yaşar Sinan, Veysel Oktay, İlknur Calpar Cıralı, Yalçın Dalgıç, Ayşem Kaya, Alev Arat Özkan

[1]İstanbul University Institute of Cardiology, İstanbul

Introduction: Resistin is a novel adipokine that is suggested to be involved in inflammatory conditions and atherosclerosis. We aimed to investigate the association between increased resistin levels and major adverse cardiac events (MACE).
Materials and Method: Patients (n=214) who were referred to catheter laboratory in our institute between December 2011 and December 2012 for coronary angiogram with an initial diagnosis of stable angina pectoris (SAP) and acute coronary syndrome (ACS) without ST segment elevation myocardial infarction (NSTEMI) had been enrolled in a study and we had been established a significant correlation between serum resistin levels and CAD (p=0.01)1. Now we explored medical records and telephone contacts of the CAD subgroup (n=155) backwards from 2015 to 2012 to establish the association between increased resistin levels and MACE.
Results: The mean follow up was three years. There were 39 MACE (25%) in the follow up period of three years. There were 16 in-hospital detahs due to cardiac causes. Eight revascularisations and fifteen rehospitalisation due to acute coronary syndrome or heart failure. The patients with MACE had similiar serum resistin level (median: 71,37 pg/ml) compared to patients without MACE (median: 80,23 pg/ml) (p>0.05).
Discussion and Conclusion: Serum resistin level was increased in patients with CAD and but there was no association between resistin levels and MACE.

Coronary artery disease / Acute coronary syndrome

PP-139

Relationship between cardiovascular risk of obstructive sleep apnea and increased thoracic periaortic adipose tissue

Ömer Akyürek, Harun Karamanlı, Duran Efe

Mevlana University Faculty of Medicine, Konya

Introduction: Aim of this study is to demonstrate the increased thoracic periaortic adipose tissue (TAT) volume which is related to increased cardiovascular risk in patients with obstructive sleep apnea (OSA) compared to control group.
Materials and Method: The study population consisted of 25 newly diagnosed OSA patients (mean (SD) age: 55.0 (±12.1) years, 64% were males) and 34 healthy volunteers (mean (SD) age: 53.2 (±11.8) years, 61.8% were males). Standard overnight polysomnography system had applied to all of the participant and apnea–hypopnea index (AHI) was calculated. In addition, all of the participants underwent thoracic radiographic assessment in the supine position, using an 8-slice multidetector computed tomography scanner and TAT volume was measured. Control group and OSA group was compared according to demographic characteristics, anthropometrics measurements and laboratory findings
Results: In patients with OSA, TAT volume (50.3 (±14.9) cm^3 vs. 19.6 (±8.4) cm^3, p<0.001), AHI (p<0.001), triglyceride (p=0.003) and total cholesterol (p=0.041) levels were significantly higher compared to the control group. While there was a positive correlation between TAT and AHI, no correlation was found with the other parameters. In stepwise regression analysis, AHI emerged as a significant predictor of TAT (â=0.414, p=0.038), contributing to 13.7% of its variability. In OSA patients, no significant difference was noted in TAT levels with respect to gender (p=0.728) or smoking status (p=320).
Discussion and Conclusion: Our findings indicate significantly higher values for TAT in OSA than controls, being associated positively with dyslipidemia and strongly predicted by AHİ levels in OSA patients, while not differing with respect to gender, and smoking status.

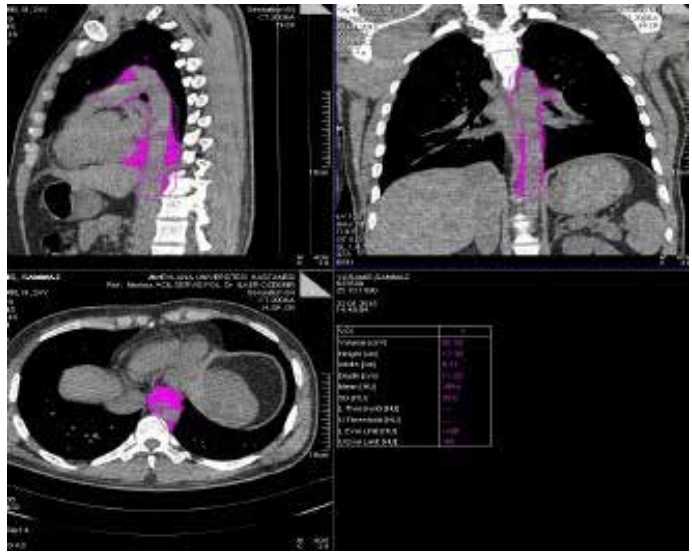


Figure 1. Image of TAT volume on MDCT

Coronary artery disease / Acute coronary syndrome

PP-140

Vitamin D, serum calcium and serum phosphate levels in acute coronary syndrome are lower than stable coronary artery disease

Celal Kilit[1], Türkan Paşalı Kilit[1], Mehmet Ali Astarcıoğlu[2], Taner Şen[2], Adnan Doğan[1]

[1]Dumlupınar University Faculty of Medicine, Kütahya
[2]Dumlupınar University, Kutahya Evliya Çelebi Training and Research Hospital, Kütahya

Introduction: The relationship between vitamin D deficiency and coronary heart disease is well known. Low vitamin D levels have been linked to inflammation, higher coronary artery calcium scores, impaired endothelial function and increased vascular stiffness. The serum ALP level has shown to be a prognostic factor in cardiovascular diseases. Elevated ALP levels are associated with more severe form of coronary artery disease poor prognosis in coronary artery disease. We aimed to compare the vitamin D (25-hydroxyvitamin D3), serum calcium, serum phosphate, alkaline phosphatase and parathormone levels in acute coronary syndrome with stable coronary artery disease.
Materials and Method: A total of 116 consecutive patients with acute coronary syndrome (mean age 62±13 years, 29 female) and 105 patients undergoing elective coronary angiography and coronary atherosclerosis detected (mean age 63±10 years, 42 female) were enrolled in this study. Blood samples were taken before angiographies and serum levels of 25-hydroxyvitamin D3, calcium, inorganic phosphate, alkaline phosphatase and parathormone were determined.
Results: In acute coronary syndrome group, serum vitamin D, calcium and phosphate levels were significantly lower than stable coronary artery disease group (Table 1). There was no significant difference in serum alkaline phosphatase and parathormone levels.
Discussion and Conclusion: Coronary artery disease risk is increased in patients with vitamin D deficiency. Additionally, lower vitamin D levels are associated with an increased risk of acute coronary events.

Table 1. Laboratory parameters of groups

	Acute Coronary Syndrome (n=116)	Stable Coronary Artery Disease (n=105)	*P* value
Vitamin D (ng/ml)	10.9 ± 7.3	17.2 ± 13.1	<0.001
Calcium (mg/dl)	9.25 ± 0.54	9.42 ± 0.43	0.013
Phosphate (mg/dl)	3.22 ± 0.67	3.49 ± 0.68	0.005
Alkaline phosphatase (U/l)	83.84 ± 28.07	85.57 ± 30.54	0.673
Parathormone (pg/ml)	54.77 ± 30.86	58.14 ± 26.84	0.424

Coronary artery disease / Acute coronary syndrome

PP-141

The relation between myocardial blush grade and early ventricular arrhythmias after acute coronary syndrome

Ekrem Şahan[1], Suzan Şahan[2], Murat Gül[3], Murat Karamanlıoğlu[1], Orhan Maden[2], Omaç Tüfekçioğlu[2]

[1]Atatürk Lung Disease and Thorax Surgery Training and Research Hospital, Ankara
[2]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[3]Erciş State Hospital, Van

Introduction: Ventricular arrhythmias can occur in 2% to 20% of acute myocardial infarctions (MIs) and are associated with hemodynamic disorientation and increased in-hospital mortality. However, it remains unclear that the relation between myocardial reperfusion after successful mechanical revascularization and ventricular arrhythmias (VAs). The objective of our study was to identify the relationship between myocardial blush grade and VAs.
Materials and Method: We found retrospectively 75 patients with VA after ST elevated Myocardial Infarction (STEMI) and 75 age and sex matched patients without VA after STEMI participated in this study. Patients with VA named group-1 and patients without VA named group-2. Myocardial Blush Grade (MBG) was determined off-line by a blinded two invasive cardiologist on the final angiogram after percutaneous intervention. All patients had TIMI 3 blood flow after PCI.
Results: The mean age was 62,97 (±7,49) years in patients with ventricular arrhythmia, and 58 were men (74,4%). The mean age was 61,40 (±8,82) years in patients without ventricular arrhythmia, and 51 were men (65,4%). There were no significant differences regarding age, gender,troponin levels and the distribution of diabetes, hypertension, smoking between two groups. Lower ejection fraction values were associated with ventricular arryhthmias (p<0,01) We found that lower MBG scores had statistically significant relation with ventricular arrhythmias (p<0.01). Patients with ventricular arrhythmias had lower MBG values. When we compare patients with ventricular tachycardia and with ventricular fibrillation, the ratio about lower MBG values were higher in patientnts with VF (7/14 patients with VF).
Discussion and Conclusion: Lower MBG values can predict early ventricular arrhythmias in patients with STEMI.

Coronary artery disease / Acute coronary syndrome

PP-142

The association between activities of daily living, functional capacity, quality of life and psychosocial factors in patients with acute coronary syndrome

Mehtap Devrim Oflazoğlu[1], Şerafettin Demir[1], Hülya Arıkan[2]

[1]Adana State Hospital, Adana
[2]Hacettepe University, Ankara

Introduction: The aim of this study was to explore the relationship between activities of daily living, functional capacity, quality of life and anxiety and depression levels in patients with acute coronary syndrome.
Materials and Method: Data were collected from forty-six patients with acute coronary syndrome (%71.7 males, %28.3 females). Activities of daily living were assesed using Canadian Occupational Performance Measure (COPM) and Glittre Activities of Daily Living test (Glittre ADL). The functional capacity was evaluated by 6-minute walk test (6MWT). Short Form-36 (SF-36) and Nottingham Health Profile (NHP) were used for evaluating general quality of life. Anxiety and depression levels were determined using Hospital Anxiety and Depression Scale (HADS).
Results: Statistically significant positive correlation was found between COPM performance score and 6MWT distance value (r=0.58), (p<0.01). There was a significantly positive relationship between COPM satisfaction scores and 6MWT distance value (r=0.57) (p<0.01). The scores of COPM performance correlated negatively with Glittre ADL test time (r=0.64), HADS anxiety (r=0.42), HADS depression (r=0.69) and HADS total (r=0.60) scores (p<0.01). The scores of COPM satisfaction were negatively related with Glittre ADL test time (r=0.61), HADS anxiety (r=0.42), HADS depression (r=0.69) and HADS total (r=0.60) scores (p<0.01). There was a significantly positive correlation between COPM performance scores and SF-36 subscales scores (p<0.01). A significantly positive relationship was found between COPM satisfaction score and SF-36 subscales scores (p<0.01). The scores of COPM performance correlated negatively with NHP subscales except for social isolation (p<0.01). There was a significantly negative correlation between COPM satisfaction scores and NHP subscales except for social isolation (p<0.05).
Discussion and Conclusion: There was a correlation between functional capacity and activities of daily living, quality of life, anxiety and depression levels in patients with acute coronary syndrome. The study showed that when the functional capacity is high, the anxiety and depression scores were low. Therefore functional capacity is very important in patients with acute coronary syndrome.

Coronary artery disease / Acute coronary syndrome

PP-143

Heart fatty acid binding protein elevates with dobutamine stress echocardiography

Sinan Akıncı[1], Akif Serhat Balcıoğlu[1], Gülten Taçoy[2], Yusuf Tavil[2], Murat Özdemir[2]

[1]Başkent University, Alanya Research and Training Center, Alanya
[2]Gazi University Faculty of Medicine, Ankara

Introduction: Heart fatty acid binding protein (HFABP) is a low-molecular weight free protein that is abundant in the intracytoplasmic space of cardiomyocytes. Because of its unique features, serum HFABP levels may be expected to increase in myocardial ischemia. The aim of this study was to evaluate the effect of myocardial ischemia induced by dobutamine stres echocardiography (DSE) on serum HFABP levels.
Materials and Method: Thirty consecutive patients (mean age 54.9±9.6 years, 53% male) with suspected myocardial ischemia were performed DSE examination. Levels of HFABP were measured immediately before and 1 hour after DSE. The patients were grouped into two as DSE positive (ischemia positive) and DSE negative (ischemia negative).
Results: DSE was positive in 8 (27%) and, negative in 22 (73%) patients. The clinical characteristics and laboratory findings of the two groups were similar except for a significantly higher age and a significantly more frequent history of myocardial infarction and CABG surgery in the DSE positive group. The basal HFABP levels were similar in the two groups (1.66±1.18 ng/ml vs. 1.61±0.77 ng/ml, p=0.884). The 1-hour HFABP levels were significantly higher in the DSE positive group as compared to the DSE negative group (2.65±1.34 ng/ml vs. 1.85±0.76 ng/ml, p=0.048). When the basal and 1-hour levels of HFABP were grouped within each group, the 1-hour HFABP rose significantly in the DSE positive group (1.66±1.18 ng/ml vs. 2.65±1.34 ng/ml, p=0.004), where as it remained unchanged in the DSE negative group (1.61±0.77 ng/ml vs.1.85±0.76 ng/ml, p=0.066).
Discussion and Conclusion: Serum HFABP levels increased significantly at 1 hour in the presence of ischemia brought out by DSE. No such increase was evident in the absence of ischemia. Although we were unable to determine whether the increase in HFABP levels were the result of ischemia or necrosis, we think that HFABP levels may be useful for the detection in inducible myocardial ischemia.

Table 1. HFABP levels and WMSI

Variables	DSE positive (n=8)	DSE negative (n=22)	p-value
Initial wall motion score index	1.087±0.117	1.028±0.133	0.279
Final wall motion score index	1.242±0.122	1.026±0.107	**<0.001**
Baseline HFABP (ng/mL)	1.66±1.18	1.61±0.77	0.884
1-hour HFABP (ng/mL)	2.65±1.34	1.85±0.76	**0.048**

DSE: Dobutamine stress echocardiography

Coronary artery disease / Acute coronary syndrome

PP-144

Assessment of 25-OH vitamin D levels and abnormal blood pressure response in patients with cardiac syndrome X

Gamze Babur Güler[1], Ekrem Güler[1], Suzan Hatipoğlu[2], Hacı Murat Güneş[1], Gültekin Günhan Demir[1], İrfan Barutçu[1], Bilal Boztosun[1]

[1]İstanbul Medipol University, İstanbul
[2]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Vitamin D deficiency is associated with coronary artery disease, hypertension, heart failure, endothelial dysfunction and metabolic syndrome. The pathophysiology of cardiac syndrome X (CSX) involves many pathways that are influenced also by vitamin D. The aim of this study is to investigate the relationship between vitamin D deficiency, CSX and abnormal blood pressure response to exercise in patients with CSX.
Materials and Method: Fifty females diagnosed with CSX and 41 healthy age matched females as a control group were included. Female patients with normal epicardial coronary arteries; typical rest or effort angina and who were referred to coronary angiography because of exercise electrocardiography (ECG) test positivity constituted the study group. Controls were females with similar demographic properties, atypical angina and negative exercise ECG study. All patients underwent standard echocardiographic examination and 25-hydroxy (OH) vitamin D level measurement.
Results: Levels of 25-OH vitamin D were significantly lower in CSX patients (9.8±7.3 ng/ml vs 18.1±7.9 ng/ml; p<0.001). Systolic blood pressure (SBP) (188±15 mmHg vs 179±17 mmHg, p:0.013) and diastolic blood pressure (DBP) during peak exercise (98±9 mmHg vs 88±9 mmHg, p<0.001) were higher in CSX patients. Levels of 25-OH vitamin D were negatively correlated with peak SBP (r:-0.310, p:0.004) and peak DBP (r:-0.535, p:<0.001) during exercise. In order to discard multicollinearity problem two different models were used for multivariate analysis. In the first model metabolic equivalent (METs) (p:0.003) and 25-OH vitamin D levels (p:0.001) were independent predictors. METs (p:0.007), 25-OH vitamin D levels (p:0.008) and peak DBP were determined as independent predictors in the second multivariate model.
Discussion and Conclusion: In patients with CSX, 25-OH vitamin D levels are lower than controls, besides 25-OH vitamin D deficiency is also associated with higher levels of DBP during exercise.

Table 1. CSX. Correlations among significant variants in univariate analyses

	Test duration	MET	Peak systolic blood pressure	Peak diastolic blood pressure	25-OH-D vitamin
Test duration	1				
	91				
MET	,982(**)	1			
	,000				
	91	91			
Peak systolic blood pressure	-,135	-,139	1		
	,201	,190			
	91	91	91		
Peak diastolic blood pressure	-,172	-,195	,391(**)	1	
	,103	,064	,000		
	91	91	91	91	
25-OH-D vitamin	,093	,103	-,310(**)	-,535(**)	1
	,402	,353	,004	,000	
	84	84	84	84	84

Anatol J Cardiol 2015; 15 (Suppl 1): 1-104

Coronary artery disease / Acute coronary syndrome

PP-145

Does high serum uric acid level cause aspirin resistance?

Bekir Serhat Yıldız[1], Emel Özkan[2], Fatma Esin[2], Yusuf İzzettin Alihanoğlu[1], Hayrettin Özkan[2], Murat Bilgin[3], İsmail Doğu Kılıç[1], Ahmet Ergin[1], Havane Asuman Kaftan[1], Harun Evrengül[1]

[1]Pamukkale University Faculty of Medicine, Denizli
[2]Denizli State Hospital, Denizli
[3]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara

Introduction: In patients with coronary artery disease (CAD), though aspirin inhibits platelet activation and reduces atherothrombotic complications, it does not always sufficiently inhibit platelet function, thereby causing a clinical situation known as aspirin resistance.Since hyperurisemia activates platelet turnover, aspirin resistance may be specifically induced by a caused by increased serum uric acid (SUA) levels. In this study, we thus investigated the association between SUA level and aspirin resistance in patients with CAD.
Materials and Method: We analyzed 245 consecutive patients with stable angina pectoris (SAP). Venous blood samples were taken to assess aspirin resistance and SUA level, and according to aspirin resistance, two groups were formed: the aspirin resistance group (Group 1) and the aspirin sensitive group (Group 2).
Results: Among all patients, the mean age of whom was 62.93±12.29 years, aspirin resistance occurred in 47.3%.Compared to those of Group 2, patients with aspirin resistance exhibited significantly higher white blood cell counts,neutrophil counts, neutrophil-to-lymphocyte ratios,SUA levels, high sensitivity C-reactive protein levels, fasting blood glucose levels. After multivariate analysis, a high level of SUA emerged as an independent predictor of aspirin resistance (OR:2.48, 95% CI:1.94-3.19; p<0.001). Stratified by quartiles of SUA levels in all patients with cut-off points of 5.65, 6.90, and 7.80 mg/dL, aspirin resistance increased with increased SUA levels (p<0.001).The receiver operating characteristic analysis provided a cut-off value of 6.45 mg/dL for SUA to predict aspirin resistance with 79% sensitivity and 65% specificity.
Discussion and Conclusion: Hyperuricemia may cause aspirin resistance in patients with CAD and high SUA levels may indicate aspirin resistant patients. Such levels should thus recommend avoiding heart attack and stroke by adjusting aspirin dosage.

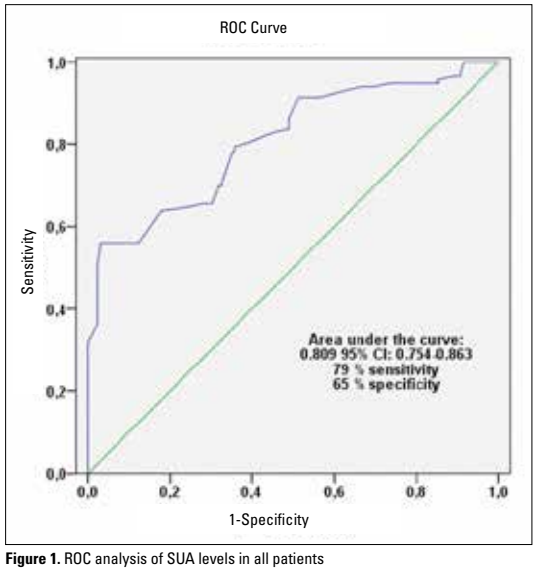


Figure 1. ROC analysis of SUA levels in all patients

	Aspirin resistance (+) (n=116)			Aspirin resistance (-) (n=129)			P-value
	(n)	(%)	Mean±SD	(n)	(%)	Mean±SD	
Age (year) ±SD			64.26 ±11.82			61.74±12.62	0.098
Female	59	(50.9)		75	(58.1)		0.304
Male	57	(49.1)		54	(41.9)		
Weight (kg) ± SD			79.00 ±8.33			75.55±9.33	0.145
Waist circumference (cm) ± SD			92.38±14.14			92.48±13.34	0.547
BMI (kg/m²) ±SD			29.71±5.95			24.58±1.94	0.603
DM	65	(56.0)		64	(49.6)		0.370
HT	82	(70.7)		87	(67.4)		0.678
HLP	64	(55.2)		62	(48.1)		0.306
Smoking	65	(56.0)		77	(59.7)		0.685
CAD history	64	(55.2)		61	(47.3)		0.250
Previous CABG	26	(22.4)		26	(20.2)		0.755
Aspirin	47	(40.5)		41	(31.8)		0.183
Aspirin dose (mg/day) ±SD			176.29±90.28			158.77±71.53	0.166
β-blocker	44	(37.9)		44	(34.1)		0.594
Ca-channel blocker	25	(18.1)		33	(25.6)		0.168
ACE i/ARB	52	(44.8)		69	(53.5)		0.201
Statin	33	(28.4)		33	(25.6)		0.666
OAD	44	(37.9)		53	(41.1)		0.695
Insulin	38	(32.8)		31	(24.0)		0.155
SBP mm/Hg ±SD			144.26 ±19.55			143.29±16.93	0.504
DBP mm/Hg ±SD			92.67 ± 16.00			91.82±13.73	0.554
Hg (g/dl)			13.07±1.06			12.93±1.35	0.250
WBC (k/uL)			9.98±2.64			9.03±2.35	0.011
Neutrophil (k/uL)			6.87±2.56			6.03±2.38	0.007
Lymphocyte (k/uL)			2.49±0.81			2.46±0.63	0.965
N/L ratio			3.13±1.93			2.65±1.35	0.037
Uric Acid (mg/dl)			7.62±1.43			6.06±1.39	0.001
Hs-CRP (mg/L)			3.33±2.02			2.46±1.16	0.001
Fasting Blood Glucose (mg/dl)			142.25±47.08			125.09±44.54	0.001
HDL Cholesterol (mg/dl)			39.43±8.82			40.92±8.69	0.007
CI-ADP (sec)			81.57±8.29			129.24±12.28	0.001
CI-Epi (sec)			143.49±58.19			238.68±27.53	0.001

Figure 2. Characteristics of patients

Coronary artery disease / Acute coronary syndrome

PP-146

The relationship between neutrophil-to-lymphocyte ratio and coronary collateral circulation

Onur Kadir Uysal[1], Buğra Özkan[2], Mustafa Duran[1], Durmuş Yıldıray Şahin[2], Murat Çaylı[2]

[1]Kayseri Training and Research Hospital, Kayseri
[2]Adana Numune Training and Research Hospital, Adana

Introduction: Neutrophil/Lymphocyte ratio (NLR) has been proposed as a prognostic marker to determine systemic inflammatory responce and atherosclerosis. Our aim was to determine the relationship between NLR and development of coronary collateral circulation (CCC) in patients with stable coronary artery disease (CAD).
Materials and Method: A total of 521 consecutive patients with stable CAD who underwent coronary angiography and documented total occlusion in one of those major coronary arteries were included in this study. Patients with grade 0-1 as poor CCC and patients with grade 2-3 as good CCC were classified in our study.
Results: Levels of fasting blood glucose, white blood cell and NLR were significantly higher in patients with poor collateral than good collateral. After multivariate analysis, high levels of NLR was an independent predictor of CCC together with levels of fasting blood glucose. The ROC analysis provided a cut-off value of 2.75 for NLR to predict poor CCC with 65% sensitivity and 68% specifity.
Discussion and Conclusion: We demonstrated an independent association between levels of NLR and development of CCC in patients with stable CAD.

Table 1. Laboratory parameters

	Poor CCC (n=295)	Good CCC (n=236)	p
Glucose (mg/dl)	130 (58-419)	106 (53-308)	<0.01
Creatinine (mg/dl)	0.96 ± 0.31	0.90 ± 0.24	0.06
Total cholesterol (mg/dl)	195.7 ± 54.2	178.6 ± 36.3	0.78
LDL-C (mg/dl)	130.4 ± 49.7	115.6 ± 28.1	0.53
HDL-C (mg/dl)	37.8 ± 10.3	36.9 ± 10.2	0.82
Triglyceride (mg/dl)	139 (53-634)	129 (69-408)	0.28
WBC (x10³/mm³)	9.4 ± 2.7	8.4 ± 2.2	<0.01
NLR	4.29 ±3.1	2.75 ± 1.2	<0.01

Table 2. Multivariate logistic regression analysis

	Sig.	Exp(B)	95% C.I.for EXP(B)	
			Lower	Upper
Creatinin	,131	,562	,266	1,186
Fasting Glucose	,018	,995	,991	,999
Diabetes	,442	,789	,431	1,445
Haemoglobin	,847	,990	,896	1,094
Platelet	,070	,997	,995	1,000
NLR	,000	,708	,620	,809
White Blood Cell	,509	,972	,892	1,058

NLR: Neutrophil to lymphocyte ratio.

Coronary artery disease / Acute coronary syndrome

PP-147

Is there an association between lymphocyte-to-monocyte ratio and coronary collateral circulation in patients with stable coronary artery disease?

Alparslan Kurtul, Sani Namık Murat, Mikail Yarlıoğlueş, Mustafa Duran, İbrahim Etem Çelik, Deniz Elçik

Ankara Training and Research Hospital, Ankara

Introduction: Well-developed coronary collateral circulation (CCC) has a positive impact on the cardiovascular prognosis. Previous studies suggested that inflammatory response is related to CCC development. Lymphocytes and monocytes are the main cells of inflammatory response. Recent studies have shown that lymphocyte-to-monocyte ratio (LMR) has been found to be a significant inflammatory marker to predict prognosis in various malignancies and peripheral arterial disease. We investigated whether LMR has an association with CCC in patients with stable coronary artery disease (CAD).
Materials and Method: The study population consisted of 245 patients with stable CAD who underwent coronary angiography and were found to have at least 95% significant lesion in at least one major coronary artery. Complete blood count and high-sensitivity C-reactive protein (hs-CRP) were measured before angiography. To classify CCC, the Rentrop scoring system was used. The patients were classified into poor CCC (Rentrop grades 0/1, n=87), or good CCC group (Rentrop grades 2/3, n=158).
Results: The LMR values were significantly higher in patients with good CCC than in those with poor CCC (4.41±1.58 vs 2.76±1.10, p<0.001). In multivariate regression analysis, LMR (OR 5.882, 95%CI 2.538-13.513; p<0.001), hs-CRP (OR 0.824, 95% CI 0.729-0.932; p=0.002) and presence of chronic total occlusion (OR 18.518, 95%CI 5.263-66.666; p<0.001) were independent predictors of good CCC. In receiver operating characteristic analysis, optimal cut-off value of LMR to predict good CCC was found as 3.38, with 73.4% sensitivity and 73.6% specificity (area under the curve: 0.812).
Discussion and Conclusion: Higher LMR values are independently associated with well-developed CCC in patients with stable CAD.

Interventional cardiology / Coronary

PP-148

Functional coronary stenosis severity assessment with adenosine and contrast medium induced hyperaemia

Hasan Arı, Ahmet Tütüncü, Sencer Camcı, İbrahim Aktaş, Alper Karakuş, Selma Arı, Gökhan Özmen, İsmet Zengin, Mehmet Melek

Bursa Yüksek İhtisas Training and Research Hospital, Bursa

Introduction: FFR measurement requires to induce coronary hyperaemia in order to maximise blood flow across the stenosis, usually with adenosine. Injection of contrast media to coronary, induces hyperaemia and could be an alternative to adenosine to measure FFR but there is not enough data about this subject. The objective of the study was to establish the diagnostic performance of the contrast medium induced hyperaemia for functional coronary stenosis severity.
Materials and Method: The study population consisted of 23 patients with stable angina pectoris scheduled for FFR measurement. We included patients with a single stenosis in the target vessel (LAD). Heparin (5000 IU) was administered at the beginning of the procedure followed by an intracoronary bolus of nitroglycerine (0.1 mg). Aortic pressure was measured via a 6Fr guiding catheter. Intracoronary distal pressure was measured simultaneously using a 0.014 pressure-sensor guidewire.Haemodynamic signals and the ECG were recorded at the baseline, at the hyperaemic response during intracoronary bolus of adenosine for the LAD (adenosine dose start with 90 µg followed by 150 µg, 300 µg, 450 µg until the achive maximal hyperaemia). The procedure and measurements were repeated throughout reactive hyperaemia induced by a standard 10ml intracoronary bolus of the contrast agent, Iohexol (Omnipaque 350 mgI/ml).
Results: The procedural characteristics of the patients showed in table 1. Adenosine FFR ≤0.80 was determined as cut off for significant coronary stenosis. According to this cut off point 9 patients were had significant stenosis. ROC analysis revealed that the optimal contrast induced FFR threshold value was 0.80 (area under the curve: 0.91±0.06, p=0.001) (Figure 1). The accuracy, sensitivity, specificity, positive and negative predictive values were respectively 0.87%, 0.89%, 0.93%, 0.89% and 93%.
Discussion and Conclusion: Contrast FFR could be an alternative method to adenosine FFR. A contrast FFR threshold value of 0.80 provides good sensitivity, specificity and negative predictive value.

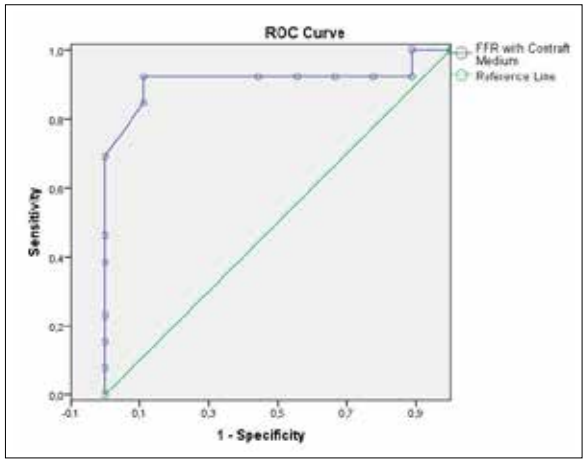


Figure 1. ROC analysis of contrast FFR

Table 1. Baseline patient characteristics

Gender (M/F) 20 (87%) / 3 (13%)	Age (year)	59.0±8.4
Angiographic lesion characteristics	Diameter stenosis, %	53.1±6.9
	Reference diameter (mm)	2.7±0.4
	Basal FFR	0.89±0.04
	Adenosine FFR	0.81±0.06
	Contrast FFR	0.81±0.06

Interventional cardiology / Coronary

PP-149

Stent fracture: the underlying mechanism of restenosis diagnosed with stentboost

Ümit Yaşar Sinan, Veysel Oktay, İlknur Çalpar Çıralı, Alev Arat Özkan, Tevfik Gürmen

İstanbul University Institute of Cardiology, İstanbul

Introduction: Stent fracture (SF) is a rare complication of stent implantation with a reported rate of 0.84-3.2% in various clinical studies with first generation drug eluiting stent (DES) and 29% in autopsy studies. Risk factors for SF are multiple stenting, long stent length, chronic renal failure, RCA intervention and a higher maximal inflation pressure. Image enhancement tecniques like StentBoost are widely available in new generation angiography systems and are used to assess stent expansion, overlap size or localize the postdilation balloon. We aimed to assess the relation between stent fracture diagnosed with StentBoost and restenosis.
Materials and Method: Seventy one patients with suspected stent fracture diagnosed with StentBoost are included in this study between January 2013 and August 2014. The mean follow up was 17±4 months. We explored medical records, angiographic images for investigating clinical or angiographic restenosis.
Results: The study group are constituted of 53 men (75%) and 18 women (25%). There were 25 patients with diabetes mellitus (35,2%), 44 patients with hypertension (62%), 35 cigarette smoker (49%), 32 patients with dyslipidemia (45%) and 3 patients with heart failure (4%). 44 patients (62%) had a prior myocardial infarction history. There were a total of 73 stents (18 bare metal stents-BMS and 55 DES). Clinical or angiographic restenosis was diagnosed in 11 of 71 patients (15.5%). 4 patients are presented with stabil angina pectoris and 7 patients with acute coronary syndrome (ACS).
Discussion and Conclusion: The role of angiography in dignosing SF is limited a fact also questioning the reliability of angiographic data. Image enhancement tecniques like StentBoost (StentBoost Subtract, Philips Healthcare, Best, the Netherlands) are widely available in new generation angiography systems and are used to assess stent expansion, overlap size or localize the postdilation balloon. Stent fracture is one of the most important underlying mechanisms of in-stent restenosis. Our study is small retrospective natured study. Large-scale, prospective studies are needed to prove the association between stent fracture diagnosed with StentBoost and stent restonosis.

Interventional cardiology / Coronary

PP-150

Serum alkaline phosphatase level is a predictor of the coronary blood flow (TIMI grade) in culprit vessel in acute coronary syndrome

Celal Kilit[1], Türkan Paşalı Kilit[1], Adnan Doğan[1], Taner Şen[2], Mehmet Ali Astarcıoğlu[2]

[1]Dumlupınar University Faculty of Medicine, Kütahya
[2]Dumlupınar University, Kutahya Evliya Celebi Training and Research Hospital, Kütahya

Introduction: Alkaline phosphatase (ALP) is an enzyme which catalyzes hydrolysis of organic pyrophosphate, which is an inhibitor of vascular calcification. ALP is noticed to be a regulator or indicator of accelerated vascular calcification. Vascular calcification causes vascular hardening and aging, consequently contributing to atherosclerosis. The serum ALP level has shown to be a prognostic factor in cardiovascular diseases. Elevated ALP levels are associated with more severe form of coronary artery disease poor prognosis in coronary artery disease. We aimed to investigate the predictive value of serum ALP level in estimating coronary blood flow in culprit vessels of patients with acute coronary syndrome who underwent primary percutaneous coronary intervention.
Materials and Method: A total of 100 patients with acute coronary syndrome (USAP n=8, NSTEMI n=48, and STEMI n=44) were evaluated prospectively. Coronary angiography was performed to all patients immediately after the admission to the hospital. Patients were divided into two groups according to the TIMI flow grade in culprit vessel. Patients with TIMI grade 0 and 1 were in the first group (n=43, mean age 62,9 years, 14 female) and patients with TIMI grade 2 and 3 were in the second group (n=57, mean age 62,6 years, 13 female). Upon admission, their ALP levels were measured with an automated analyzer by the enzymatic method.
Results: Groups were similar in terms of age and gender (p=0.93 and p=0.28, respectively). Serum ALP levels were significantly lower in the first group (76.51±27.55 U/L vs 89.54±28.43 U/L, p=0.02) (Figure 1). Patients with USAP and NSTEMI have significantly higher ALP levels than STEMI patients (90.61±28.67 U/L vs 75.45±27.04 U/L, p<0.01).
Discussion and Conclusion: Serum ALP level is a good predictor of culprit vessel's TIMI flow grade in acute coronary syndrome. Higher values are associated with better TIMI flow grades. Also STEMI patients have lower serum ALP levels than USAP and NSTEMI patients.

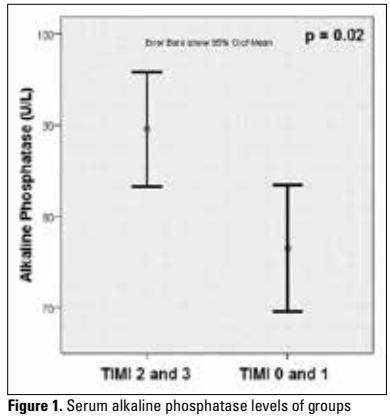


Figure 1. Serum alkaline phosphatase levels of groups

Interventional cardiology / Coronary

PP-151

Relation of presence and severity of coronary artery disease with LV systolic function: a deformation imaging study.

Turgay Işık[1], Halil İbrahim Tanboğa[2], Erkan Ayhan[1]

[1]Balıkesir University, Faculty of Medicine, Balikesir
[2]Atatürk University, Faculty of Medicine, Erzurum

Introduction: We aimed to investigate left ventricular (LV) systolic function by speckle tracking echocardiography in patients with coronary artery disease (CAD) and to show a possible relationship between the severity of CAD and LV systolic function.
Materials and Method: The study population consisted of one hundred twenty-one patients who were un-

derwent coronary angiography for stable angina pectoris. Patients were classified depending on whether the SYNTAX score was 0 (no angiographically apparent CAD) or ≥1 where CAD was present angiographically. Patients with CAD were divided into groups that are not severe (syntax score: 1-22) and severe CAD (syntax score >22). LV strain (S) and strain rate (Sr) were evaluated by apical two- (2C), three- (3C), and four-chamber (4C) imaging. Global S (GS) were calculated by averaging the 3 apical views. Correlation analysis performed to assess the association of GS with the syntax score.

Results: Patients with angiographic CAD had significantly decreased LV ejection fraction (52.1±10.8 vs 59.1±12.2, p:0.001), 4C-S (-13.7±4.0 vs -17.9±5.2, p<0.001), 3C-S (-13.9±4.9 vs -17.2±6.7, p<0.001), 2C-S (-14.3±4.0 vs -18.5±6.2, p<0.001) and GS (-13.9±3.9 vs -17.8±5.7, p<0.001) levels when compared to the patients without CAD. Additionaly patients with severe CAD had significantly decreased LV ejection fraction (47.0±12.4 vs 54.5±9.2, p:0.01), 4C-S (-12.1±3.8 vs -14.5±3.9, p:0.05), 3C-S (-11.4±4.0 vs -14.9±4.9, p:0.004), 2C-S (-12.6±3.6 vs -15.0±4.0, p:0.02) and GS (-12.2±3.3 vs -14.8±3.9, p:0.01) levels when compared to the patients without severe CAD. There was a good correlation between GS and the SYNTAX score (r=0.44, p<0.001), (Figure 1).

Discussion and Conclusion: LV systolic dysfunction assessment by speckle tracking associated with both the presence and severity of CAD.

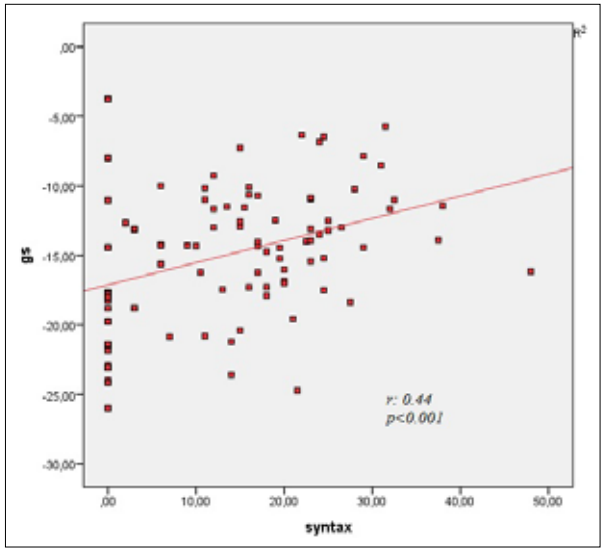


Figure 1. Correlation between GS and SYNTAX score

Interventional cardiology / Coronary

PP-152

Silent neuronal ischemias after elective persuteneous coronary intervention

Hüseyin Göksülük, Sadi Güleç, Özgur Ulaş Özcan, Menekşe Gerede, Veysel Kutay Vurgun, Nil Özyüncü, Çetin Erol

Ankara University Faculty of Medicine, İbni Sina Hospital, Ankara

Introduction: Increased plasma levels of neuron specific enolase (NSE) is related to damage of neurons and neuroendocrine cells. We aimed to investigate elevation of NSE after elective percutaneous coronary intervention (PCI) on the prediction of silent neuronal ischemias (SNIs).

Materials and Method: Patients scheduled for elective PCI (n= 80) and age and sex-matched controls (n=80) with normal coronary arteries were assessed. NSE levels were studied before and 12 hour after the procedure. Patients with high baseline levels of NSE (16 patients in normal coronary artery group and 11 patients in elective PCI group) (n=27) were excluded. Elevation of greater than 0,12 µg/l was considered as SNI.

Results: Thirty-five of the 133 study patients had SNI after the procedure. NSE elevation was significantly more prevalant among patients with PCI than that of controls. Elevation of NSE was observed in 39,1% of elective PCI patients (n=27) and 12,5% of the control group (n=8) (p<0,001). The incidence of SNI was higher in active smokers and patients who had history of myocardial infarction (MI) (%31 versus %15, p=0,03 for active smokers and %25 versus %10, p=0,02 for history of MI, respectively) (See table). However, multivariate analysis failed to identify any independent predictor of NSE elevation after elective PCI.

Discussion and Conclusion: For patients undergoing elective PCI, NSE levels after procedure increases. Invasive coronary procedures have risk of SNIs, even in patients with normal coronary arteries. Increased recognition of SNIs may facilitate therapies aimed at preventing their occurrence and decrease the risk of adverse neurological outcomes.

Table 1. Clinical and angiographic characteristics

Variables	Normal CAG (n=64)	Elective PCI (n=69)	P value
Age,mean±SD	61,7±11,6	62,2±10,1	0,79
Female n(%)	43(67,2%)	17(24,6%)	<0,001
Smoking, n(%)	3(4,7%)	23(33,3%)	<0,001
MI history, n(%)	0 (0%)	19(29,5%)	<0,001
SNI (+), n(%) (NSE≥0.12)	8(12,5%)	27(39,1%)	<0,001

Interventional cardiology / Coronary

PP-153

The effect of on admission white blood cell count over in-hospital and long term clinical end-points in patients treated with primary-PCI

Erdem Türkyılmaz, Arzu Kalaycı, Vecih Oduncu, Olcay Özveren, Ali Cevat Tanalp, Can Yücel Karabay, Atilla Bitigen, Akın İzgi, Cevat Kırma

Kartal Koşuyolu Education and Research Hospital, İstanbul

Introduction: We aimed to investigate the effect of on-admission non-specific inflammation [White Blood Cell – Count, (WBC-C)] over in-hospital and long term (median follow-up 59 months) adverse cardiovascular events (death, heart failure, stroke, re-infarction) in acute myocardial infarction (STEMI) patients treated with primary percutaneous coronary intervention (p-PCI).

Materials and Method: We retrospectively evaluated 3205 patients with STEMI who admitted to our emergency department between January 2006-January 2010 within first 12 hours of chest pain and treated with p-PCI. Long term follow-up was performed prospectively. The patients were grouped according to on-admission WBC-C [Quartil (Q) 1 14.2 (n=774) x10^3/µl].

Results: Diabetes, hypertension, pain-door time, renal failure and on-admission cardiogenic shock were significantly higher in Q4 group (p<0.001, for all). Final TIMI 3 flow (91.7% vs 90.8% vs 91.6%, 85.5%), complete (>70%) ST segment resolution (70% vs 65.4% vs 62.4% vs 45.5%) and post-procedural LVEF, (48.5% vs 47.7% vs 46.3% vs 42.7%) were significantly lower in Q4 group (p<0.001 for all). In hospital mortality (1.6% vs 2.2% vs 3% vs 8.3%) and heart failure (4.9% vs 6% vs 10.7% vs 23.4%) were significantly higher in Q4 group (p<0.001, for all) while there was no significant difference between stroke and re-infarction rates between four groups. In the long term follow-up, all cause mortality (10.4% vs 13.9% vs 12.5% vs 25.5%, p<0.001), heart failure (8.7% vs 10.7% vs 14.8% vs 30.5%, p<0.001), stroke (1.2% vs 1.7% vs 2.1% vs 3.9%, p=0.045) and re-infarction (10.1% vs 9.2% vs 8.9% vs 13.2%, p=0.029) were more common in Q4 group. In the Cox-proportional Hazard model Q4 was an independent predictor in the long term for all cause mortality (HR 2.13, 95% Confidence Interval 1.23–4.12, p<0.001).

Discussion and Conclusion: In patients treated with p-PCI, on admission elevated WBC-C is related to both in-hospital and long term adverse cardiovascular events and is an independent predictor for mortality.

Interventional cardiology / Coronary

PP-154

GuideLiner catheter application in complex coronary lesions: experience of two centers

Hüseyin Dursun[1], Ahmet Taştan[2], Zülkif Tanrıverdi[3], Erdem Özel[2], Dayimi Kaya[1]

[1]Dokuz Eylül University, Faculty of Medicine, İzmir
[2]Şifa University, Faculty of Medicine, İzmir
[3]İdil State Hospital, Şırnak

Introduction: GuideLiner catheter (Vascular Solutions Inc, Minneapolis, MN, USA) provides adequate back-up support and a coaxial guide engagement for stent delivery in complex coronary anatomies. In this study we aimed to present one of the largest series of experience with GuideLiner catheter utilized for challenging percutaneous coronary interventions (PCI) in two centers.

Materials and Method: We retrospectively collected the coronary angiography (CAG) records of 64 patients between January 01, 2012 and August 01, 2014 in whom 5-in-6 Fr GuideLiner catheter was used; and assessed the data in terms of the lesion characteristics, procedural success, and complications.

Results: The mean age of the patients was 69.8±10.0 years. Femoral approach was employed in all cases. Lesions were mostly (90.6%) class B2 or C according to the AHA/ACC lesion classification. GuideLiner catheter was mainly used to increase back-up of the guide catheter (85.9%), and in 95.3% of all cases the procedure was successful. The mean depth of GuideLiner catheter intubation was 30.3±21.6 mm. None of the patients had coronary dissection or major complications.

Discussion and Conclusion: In this study we presented a large registry of two centers on the use of GuideLiner catheter. The device effectively allowed stent delivery in challenging lesions when the conventional techniques have failed without major complications.

Interventional cardiology / Coronary

PP-155

Comparison between fractional flow reserve and visual assessment by multiple observers in patients with angiographically moderate coronary artery lesions

Bilge Duran Karaduman[1], Murat Akçay[2], Hüseyin Ayhan[2], Hacı Ahmet Kasapkara[2], Mehmet Burak Özen[1], Murat Can Güney[2], Serdal Baştuğ[1], Cenk Sarı[1], Tahir Durmaz[2], Telat Keleş[2], Nihal Akar Bayram[2], Emine Bilen[1], Engin Bozkurt[2]

[1]Ankara Atatürk Education and Research Hospital, Ankara
[2]Yıldırım Beyazıt University Faculty of Medicine, Ankara

Introduction: "Fractional Flow Reserve" (FFR) is a major interventional diagnosis tool for the assessment of hemodynamic importance of coronary stenosis severance through intracoronary pressure measurement. However,FFR is not a common in daily practice as visual assessment is a more frequently administered method.This study aims at comparing the assessment of severity of moderate stenosis in CAG via FFR to visual assessment through multiple observers.

Materials and Method: Patients who applied to our hospital between January 2011 and August 2014 and administered with coronary angiography, diagnosed with a moderate coronary artery lesion, and then administered with FFR were scanned as a part of this study. The study included clinically stable and unstable

coronary artery patients. Angiographic images of 359 patients were separately interpreted by three interventional cardiologists (G1, G2, G3) who were appointed as observers.Observers were not provided with information about demographic details, risk factors,clinical features, FFR results and post-FFR decisions. Lesions were classified by the observers as "severe","not severe", and "undecidable".

Results: Out of 359 patients of the study, 73.6% of them were male while their mean age was 62.6±10.1 years.Following the diagnostic CAG, it was concluded that 43.6% of patients suffered from one vascular disease while 32.5% suffered from two vascular diseases. And the remaining 23.9% suffered from three vascular diseases. Administered for moderate stenosis, FFR pointed out that 37.9% of the results were hemodynamically significant while 62.1% were not. Observers decided to go with the PCI for the lesion administered with FFR for 22.2% of the patients, and with CABG for the 17.2%, 40.3%, 39.9% and 44.4% of the moderate lesions were interpreted as severe by G1, G2 and G3 respectively. When observers' decisions with regard to the severity of lesions were compared to FFR results, the severity percentages identified by each of the three observers were significantly different than both each other and the FFR results p<0.001, p<0.001, respectively). As a result of Kappa analysis carried out for the agreement of observers with FFR in terms of lesion severity, it turned out that the FFR results and the results for G1, G2 and G3 were significantly different (p<0.001). Upon the Kappa analysis carried out by matching the decisions of the observers in doubles, G1 and G2 turned out to have a good agreement between each other while the agreement among the G2 and G3 as well as the G1 and G3 were moderate, and a statistically significant disagreement persisted (p<0.001).

Discussion and Conclusion: To identify the functional importance of moderate coronary artery stenosis,the visual assessment does not yield similar results with the FFR procedure even if it is conducted by experienced interventional cardiologists. Within the technical bounds of possibility, one should opt for FFR rather than an assessment of multiple observers for the assessment of severity of moderate coronary lesions.

Interventional cardiology / Coronary

PP-156

Comparison of the effects of bare metal stents and drug eluting stents on C-reactive protein levels

Nil Özyüncü, Sadi Güleç, Özgür Ulaş Özcan, Hüseyin Göksülük, Çetin Erol

Ankara University Faculty of Medicine, İbni Sina Hospital, Ankara

Introduction: It's suggested that drug eluting stents (DES) may have systemic anti-inflammatory properties and this can play a role in decreased restenosis rates. The aim of this study was to compare bare metal stents (BMS) and DES on their effects on C-reactive protein (CRP) levels, a good marker of systemic inflammation. We also investigated the relation between the inflammation levels, myonecrosis and adverse cardiac events.

Materials and Method: The patients undergoing elective stent implantation were grouped according to the stent type as BMS (n=70) and DES (n=42). Basal and 24th hour postprocedural CRP and CKMB levels were measured and the difference (Δ- delta) was compared between the groups. The patients were followed up for adverse cardiac events (non-fatal myocardial infarction, death and target vessel revascularisation) for one year.

Results: Mean age was 62±11 and 75% were males. The patients with diabetes, hypertension and metabolic syndrome were significantly higher in BMS group when the basal characteristics of the stent groups were compared. There was significant CRP rise in both groups at 24th hour (figure 1), but the ΔCRP level was 2,1 (0,5–6,2) mg/L in BMS and 2,3 (0,2–5,2) mg/L in DES group, the difference was not statistically significant (p=0,703). ΔCKMB levels and adverse cardiac event rates were similar between the two groups (p=0,897 and p=0,785). There was no correlation between ΔCRP and ΔCKMB levels in both groups (r=-0,090 and p=0,459 for BMS, r=0,158 and p=0,318 for DES group). Similarly, the effect of ΔCRP on the incidence of adverse cardiac events was not significant (p=0,349 for BMS group and p=0,135 for DES group).

Discussion and Conclusion: Our findings reveal that patients with BMS and DES implantation exhibit similar grade of systemic inflammation after the procedure. At similar levels of systemic inflammation, the local anti-inflammatory properties of DES can play a role at decreased restenosis rates.

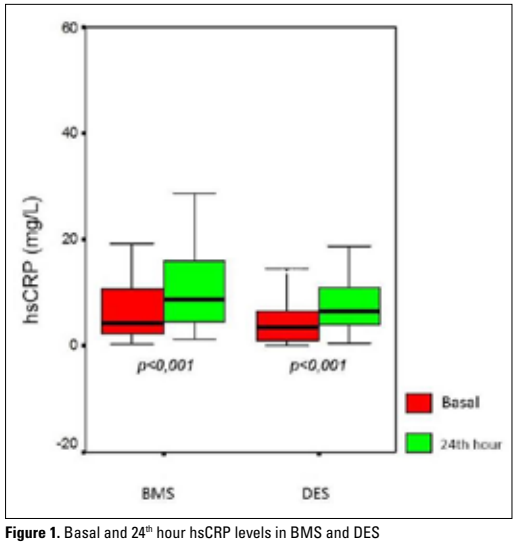


Figure 1. Basal and 24th hour hsCRP levels in BMS and DES

Epidemiology

PP-157

Regional differences in the prevalence of hypertension in Turkey

Mustafa Aldemir[1], Mehmet Bilgehan Pektaş[1], Sadık Volkan Emren[2], Ali İhsan Parlar[3]

[1]Afyon Kocatepe University Faculty of Medicine, Afyon
[2]Afyonkarahisar State Hospital, Afyonkarahisar
[3]Private Acute Heart Hospital, İzmir

Introduction: Hypertension is the leading cause of death among the different cardiovascular risk factors. Studies have found that differences in the prevalence of hypertension exist depending on gender, age, race, socio-demographic characteristics and geographical location. In this study, we aimed to determine the prevalence of hypertension according to gender and regional distribution during the last five years in Turkey.

Materials and Method: The diagnosis of essential hypertension in individuals was determined from across the country based on data from 2009-2013 obtained from Social Security Insurance.

Results: From the data of this study, the prevalence of hypertension was found to be significantly greater for both sexes in the Black Sea Region for all the years surveyed. The prevalence of hypertension in women was found to be higher than men in all geographic areas (p<0.05).

Discussion and Conclusion: Hypertension maintains its importance as one of the most significant health problems in Turkey. In light of this data, regional variation has been determined for the prevalence of hypertension in Turkey.

Table 1. The regional distribution of hypertension

	2009		2010		2011		2012		2013	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Mediterranean	189.498	308.374	189.498	308.374	256.412	398.540	262.152	450.956	269.067	456.590
Eastern Anatolia	75.953	130.105	98.490	169.496	98.264	169.909	132.519	235.488	124.566	220.408
Aegean	193.534	337.622	261.245	440.252	285.502	472.169	306.912	511.814	326.560	535.895
Southeastern Anatolia	70.419	128.012	98.526	172.767	108.440	185.003	153.765	275.116	160.817	283.923
Central Anatolia	273.947	480.898	362.233	619.892	354.608	600.036	360.264	617.941	381.743	642.767
Black Sea	196.966	346.113	246.366	487.416	296.977	499.367	323.356	548.940	322.685	543.758
Marmara	467.691	812.862	594.359	1.000.868	607.188	1.007.478	616.437	1.012.891	636.143	1.026.707
The total number of the patients	1.466.008	2.552.986	1.890.717	3.199.063	2.007.391	3.332.502	2.175.405	3.649.148	2.241.591	3.710.048

Epidemiology

PP-158

Measurement of aortic sinus diameter by M-Mod underestimates the visually measured actual diameter

Cengiz Öztürk[1], Mustafa Aparcı[2], Zafer Işılak[3], Murat Yalçın[1], Şevket Balta[1], Turgay Çelik[1], Ejder Kardeşoğlu[3], Mehmet Uzun[3]

[1]Gülhane Military Medical Academy (GMMA) Ankara, Ankara
[2]Kasımpaşa Military Hospital, İstanbul
[3]Gülhane Military Medical Academy (GMMA) Haydarpaşa, İstanbul

Introduction: Prevalence of Aneurysm or dilatation of Aortic Sinus of Valsalva (AoSV) is relatively higher among general population. However it may be overlooked during the routine transthoracic echocardiography and measurement by M-Mod echocardiography. We aimed to evaluate whether M-Mod echocardiography could correctly inform about the actual diameter of AoSV and could substitute visual diameter.

Materials and Method: Totally, fifty hundred twenty young healthy subjects enrolled to the study. Differences between the diameters of AoSV measured by M-Mod echocardiography and visual method were compared.

Results: Mean±SD, Median, and Min-Max of visually measured of AoSV were as 30.05±2.39, 30, 24-38 mm whereas Mean±SD, Median, and Min-Max of MMod AoSV were as 28.73±2.22, 28, 22-35, respectively. MMod method underestimated the AoSV in 348 cases, and overestimated 58 case compared to visually measured AoSV, and was equal in 114 cases (p<0.001). The differences between MMod and Visual AoSV were as 1.32±1.63, 1, and (-3)-8, 4 mm, respectively. Frequencies of differences were presented in Figure 1. Additionally when we compared the differences according to AoSC ≤30 mm (n=304) and >30 mm (n=216) we observed that difference between MMod and Visual method was significantly increased in group of AoSV >30 mm (0.85±1.4, 1, -3-6 vs 1.98±1.69, 2, -2-8 mm, p<0.001) (Figure 1).

Discussion and Conclusion: Conclusion: MMod measurement of AoSV generally underestimates the actual diameters measured visually at least 1 mm and over. Moreover the difference between MMod and visual measurements reach 2 mm and more in AoSV >30 mm. We suggest that AoSV and proximal aorta should be examined during the routine echocardiographic examination and visual measurements of AoSV should be reported in addition to MMod measurement of Aortic diameters.

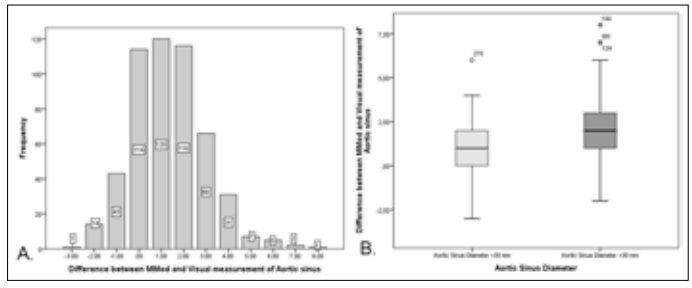


Figure 1

Epidemiology

PP-159

Underuse of oral anticoagulants in non-valvular atrial fibrillation: insights from RAMSES study

İbrahim Altun[1], Özcan Başaran[1], Mehmet Tekinalp[2], Özgen Şafak[3], Mehmet Yaman[4], Bernas Altıntaş[5], Yasin Çakıllı[6], Ozan Gürsoy[7], Mehmet Ballı[8], Emine Altuntaş[9], Fatih Akın[1], Cevat Kırma[10], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Kahramanmaraş Necip Fazil State Hospital, Kahramanmaraş
[3]Burdur State Hospital, Burdur
[4]Samsun Training and Research Hospital, Samsun
[5]Diyarbakır Gazi Yaşargil Education and Research Hospital, Diyarbakır
[6]Tuzla State Hospital, İstanbul
[7]Gaziemir State Hospital, İzmir
[8]Mersin Toros State Hospital, Mersin
[9]Bingöl State Hospital, Bingöl
[10]Kartal Kosuyolu Education and Research Hospital, İstanbul

Introduction: An underuse of oral anticoagulants (OAC) in patients with non-valvular atrial fibrillation (NVAF) was showed, as only 50% of all patients with NVAF receive OAC treatment. Therefore, we aimed to characterize individuals without OAC treatment in a real-life, multicenter population of patients with NVAF in Turkey.
Materials and Method: ReAl-life Multicenter Survey Evaluating Stroke Prevention Strategies in Turkey (RAMSES) Study is a prospective, observational study performed in outpatient cardiology clinics. We enrolled 6273 patients to the study and 1716 patients who were not on OAC therapy were selected for subgroup analysis. Reasons of not being on OAC therapy was recorded.
Results: The mean age of the selected non-OAC group was 70±12, and 52% were female. The mean CHA2DS2-VASc score was 3.2±1.6. Among 1716 patients 67 had a CHA2DS2VASc score of "0" and two patients' CHA2DS2VASc score was missing. Remaining 1647 (96%) patients were analysed for the reasons of not being on OAC therapy. Of these 1647 patients 1138 (69%) were receiving antiplatelet therapy. The main reasons of not being on OAC was socio-economic status in 514 patients (34%), medical negligence 336 (22%) and new diagnosis in 321 patients (21%) (Figure). The other reasons for not being on OAC therapy were patient preference in 161 patients (11%), high bleeding risk in 81 (5%) and others in 85 patients (6%).
Discussion and Conclusion: RAMSES study which is the largest atrial fibrillation registry in Turkey showed that a large number of patients were not receiving OAC therapy despite being definetely indicated by clinical guidelines. A careful evaluation of patients with NVAF is necessary for the prevention of cardioembolic stroke.

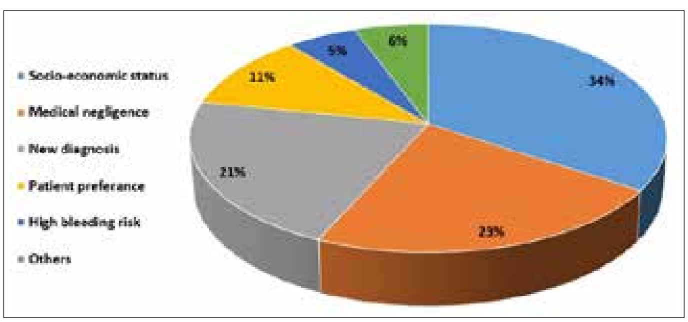


Figure 1. Reasons of not being on oral anticoagulants

Epidemiology

PP-160

An epidemiological study of pulmonary hypertension in Turkish adult population

Sadık Volkan Emren[1], Mehmet Bilgehan Pektaş[2], Ayhan Pektaş[2], Mustafa Aldemir[2], Gülay Özkeçeci[2], İsmet Doğan[2]

[1]Afyonkarahisar State Hospital, Afyonkarahisar
[2]Afyon Kocatepe University Faculty of Medicine, Afyon

Introduction: The present study aims to evaluate the nationwide epidemiological characteristics of adulthood pulmonary hypertension (PH) within whole Turkish population over a period of five years using the registry of the National Health Insurance System.
Materials and Method: All individuals aged more than 18 years who were admitted to a Turkish hospital for the first time between 2009 and 2013 with a discharge diagnosis of primary PH (ICD-10 code I27.0) and secondary PH (ICD-10 code I27.2) were identified.
Results: When compared with other age groups, the number of individuals aged more than 45 years was significantly higher in primary PH group (p=0.001 for all years). The number of patients settled in the Northwestern Anatolia was significantly higher in the primary PH group (p<0.05 for all years). Compared with other age groups, the number of individuals aged more than 45 years was significantly higher in secondary PH group (p=0.001 for all years). The number of patients settled in the Northwestern Anatolia was significantly higher in the secondary PH group during the study period (p<0.05 for all years).
Discussion and Conclusion: The prevalence of adulthood PH in Turkey may be higher than that of adulthood PH in Western countries and adulthood PH usually affects Turkish individuals aged over 45 years.

Table 1. Distribution of adult pulmonary hypertension cases

Admission year	Primary pulmonary hypertension					Secondary pulmonary hypertension					Total
	18-25 years	26-35 years	36-45 years	>46 years	Total	18-25 years	26-35 years	36-45 years	>46 years	Total	
2009	104 (2.6%)	229 (5.0%)	386 (8.4%)	3805? (83.0%)	4042	93 (3.4%)	133 (6.0%)	242 (9.4%)	2082? (81.0%)	2170	7152
2010	145 (2.4%)	368 (5.2%)	635 (9.2%)	5769 (83.2%)	6917	104 (2.3%)	204 (4.6%)	338 (7.6%)	3796 (85.5%)	4442	11379
2011	271 (3.4%)	466 (3.8%)	775 (9.6%)	6789 (84.2%)	8048	150 (2.7%)	218 (3.9%)	335 (5.8%)	4944 (87.6%)	5651	13699
2012	191 (2.2%)	555 (6.5%)	736 (8.6%)	7066 (82.7%)	8548	139 (2.8%)	283 (5.7%)	335 (6.7%)	4232 (84.8%)	4989	13537
2013	305 (4.0%)	607 (8.0%)	732 (9.7%)	5942 (78.3%)	7586	214 (4.6%)	443 (9.5%)	404 (8.7%)	3587 (77.2%)	4648	12234

Epidemiology

PP-161

The relation between epicardial adipose tissue thickness and CHADSVASc score

Akif Serhat Balcıoğlu[1], Sinan Akıncı[1], Ali Çoner[1], Davran Çiçek[1], Haldun Müderrisoğlu[2]

[1]Başkent University, Alanya Research and Training Center, Alanya
[2]Başkent University Faculty of Medicine, Ankara

Introduction: Epicardial adipose tissue is associated with coronary artery disease, metabolic syndrome and atrial fibrillation. Increased epicardial adipose tissue thickness (EATT) has been found recently to be significantly correlated with ischemic stroke and useful in the estimation of the risk of stroke. CHADSVASc score is a well-validated clinical risk stratification tool used in patients with non-valvular atrial fibrillation to calculate stroke risk. The aim of this study was to investigate whether there is a relation between EATT and CHADSVASc score.
Materials and Method: This prospective study included 269 consecutive patients (median age 66 years) with non-valvular atrial fibrillation detected by ECG or 24-hour Holter ECG. All patients underwent a transthoracic echocardiography to measure EATT and the CHADSVASc score was calculated. Data was presented as median (25÷75% interquartile range).
Results: CHADSVASc scores were 0 in 15 patients (5.6%), 1 in 52 (19.3%), 2 in 69 (25.7%), 3 in 55 (20.4), 4 in 34 (12.6%), 5 in 20 (7.4%), 6 in 12 (4.5%), 7 in 9 (3.3%), 8 in 2 (0.7%), and 9 in 1 patient (0.3%). Comparison of EATT to criteria of CHADSVASc scoring is presented in table 1. EATT was higher in patients with a history of stroke/transient ischemic attack/thrombo-embolism than in those without [6.5 (4.1÷8.3) mm vs. 4.7 (3.5÷6) mm, p<0.001]. In addition, EATT was significantly correlated with CHADSVASc score (r=0.433, p<0.001). Linear regression analysis revealed that an EATT of ≥4.12 mm and ≥4.76 mm predict CHADSVASc scores 1 and 2, respectively (B=0.639, Constant = 3.486, p<0.001).
Discussion and Conclusion: To the best of our knowledge, this is the first study to examine the relation between EATT and CHADSVASc scoring system. We demonstrated that EATT is significantly associated with CHADSVASc score and is increased in patients with a history of stroke/transient ischemic attack/thrombo-embolism. These finding may suggest that EATT can predict stroke risk in patients with non-valvular atrial fibrillation.

Table 1. CHADSVASc criteria

CHADSVASc criteria Congestive heart failure	EAT thickness	p-value	CHADSVASc criteria Hypertension	EAT thickness	p-value	CHADSVASc criteria Diabetes mellitus	EAT thickness	p-value
Yes (n=44) / No (n=225)	4.7(2.6÷6) / 5(3.8÷6.1)	0.186	Yes (n=102) / No (n=167)	6(4.5÷8) / 4.4(3.2÷5.6)	<0.001	Yes (n=55) / No (n=214)	6.2(4.5÷8) / 4.6(3.4÷6)	<0.001
Vascular disease			Stroke/TIA/TE			Age		
Yes (n=95) / No (n=174)	5.6(4.2÷7.8) / 4.5(3.2÷6)	<0.001	Yes (n=49)	6.5(4.1÷8.3)		<65 years (n=122)	4.5(3.5÷5.8)	
Gender			No (n=220)	4.7(3.5÷6)	<0.001	65-74 years (n=85)	4.5(3.4÷6.4)	<0.001
Female (n=148) / Male (n=121)	4.9(3.8÷6.5) / 5(3.2÷6.4)	0.306				≥75 years (n=62)	6.2(4.5÷8.4)	

TE: Thrombo-embolism; TIA: Transient ischemic attack

Epidemiology

PP-162

Electrocardiography screening among schoolchildren in Southeastern Anatolia Region of Turkey

Abdulkadir Yıldız[1], Abdullah Tunçez[2], Murat Yüksel[1], Duran Karabel[3], Mehmet Ali Işık[1], Fikri Demir[1], Mustafa Oylumlu[1], Zuhal Arıtürk Atılgan[1], Ebru Tekbaş[1], Sait Alan[1], Nizamettin Toprak[1]

[1]Dicle University, Faculty of Medicine, Diyarbakır
[2]Selçuk University Selçuklu Faculty of Medicine, Konya
[3]Eskişehir Osmangazi University Faculty of Medicine, Eskişehir

Introduction: During echocardiographic screening for rheumatic heart disease (RHD) 5439 schoolchildren went under electrocardiographic examination to give epidemiological data about gender variations in general ECG parameters and congenital ECG abnormalities. Data about RHD is not scope of this article.
Materials and Method: Randomly selected schoolchildren from 5-15 years of age in Southeastern Anatolia Region of Turkey were screened with Nihon-Kohden electrocardiography machine.
Results: Mean age of the children was 10±3 years. There were 3 congenital atrioventricular blocks, 1 Brugada and 1 Wolf-Parkinson-White pattern among all children. Two children with congenital AV block were asymptomatic while the other child had concomitant ventricular septal defect. The gender differences among ECG parameters and variations were summarized in Tables 1 and 2.
Discussion and Conclusion: This study was one of the largest ECG study showing the rates of ECG variations, duration of normal intervals and gender variations among schoolchildren of Turkey.

Table 1. Electrocardiographic wave and interval durations

	Female n=2683	Male n=2756	P value
Heart rate, bpm	95±15	87±15	<0.001
PR interval, msn	134±39	138±54	0.005
QRS interval, msn	82±25	89±51	<0.001
QT interval, msn	346±82	355±31	<0.001
QT_c interval, msn	402±164	401±111	0.788
P wave axis	48±31	47±34	0.310
QRS wave axis	61±22	59±26	0.011
T wave axis	39±23	46±23	<0.001
V_5 R amplitude, mV	1.73±0.59	2.01±0.63	<0.001
V_1 S amplitude, mV	1.22±0.51	1.19±0.55	0.033

Table 2. Distribution of electrocardiographic variations

	Female n=2684	Male n=2756	P value
Sinus arrhythmia, n (%)	894 (33.3)	1020 (37)	0.004
RBBB, n (%)	32 (1.2)	118 (4.3)	<0.001
iRBBB, n (%)	154 (5.7)	350 (12.7)	<0.001
V_1 P wave negativity, n (%)	216 (8)	420 (15.3)	<0.001
V_1 biphasic P wave, n (%)	850 (31.7)	1064 (38.6)	<0.001
V_2 P wave negativity, n (%)	64 (2.4)	156 (5.7)	<0.001
V_1 T wave negativity, n (%)	2320 (86.4)	2412 (87.6)	0.185
V_2 T wave negativity, n (%)	932 (34.8)	944 (34.3)	0.670
V_3 T wave negativity, n (%)	434 (16.2)	320 (11.6)	<0.001
U wave, n (%)	1038 (38.7)	1358 (49.3)	<0.001

Epidemiology

PP-163

Retrospective analysis of cardiac tamponade patients: a single centre data

Salih Kılıç, Elif İ. Yüce, Evrim Şimşek, Burcu Yağmur, Hatice K. Soner, Cahide Soydaş Çınar, Oğuz Yavuzgil, Cemil Gürgün

Ege University Faculty of Medicine, İzmir

Introduction: Retrospective investigation of aetiological features, laboratory results of patients admitting emergency department with cardiac tamponade in a tertiary centre and complications due to pericardiocentesis

Materials and Method: Archive records of 162 patients diagnosed with cardiac tamponade between January 2010 and July 2014 were retrospectively evaluated. Cardiac tamponade was diagnosed with echocardiography by visual observations and respiratory variation in right and left ventricular diastolic filling on pulse wave tissue Doppler imaging. All patients were treated with emergent pericardiocentesis under fluoroscopy.

Results: The mean age was 61.5±14.7 years (22-90) and 59.3% were male. Two patients were lost, one during the procedure and one after, due to right ventricular injury and impaired general condition. 27.7% of patients (n=45) had no known health problems. 18.5% (n=30) had cardiac disease and 26.7% (n=8) of those patients had symptomatic heart failure. 41.3% of patients (n=67) had known malignancy, lung cancer (n=40) being the most common, followed by breast cancer (n=8), gastrointestinal tract (n=7) and hematologic cancer (n=5), respectively. The widest diameter of the effusion measured by echocardiography revealed an average of 2.5±0.6 cm. There was no significant relationship between the aetiology and the diameter of the effusion. 40% of patients had low voltage and 13% had atrial fibrillation on ECG. In 62% of patients (n=101) the fluid was characterized as exudative. Exudate fluid was more frequent in patients with known malignancy than those without (57.6% vs. 75%, p=0.02). 95 patients had exudate effusion and 66.3% (n=67) of those had benign cytology. Two patients (3.9%) with transudate effusion had malignant cytology. Three patients without known malignancy had malignant cytology (adenocarcinoma of the lung, non-small cell lung cancer and adenocarcinoma). 36 patients with known malignancies had benign cytology results and 37,1% (n=13) of these patients had transudate effusion, the rest being mainly exudative. Culture results showed M. tuberculosis in a patient, P. aeruginosa in one and coagulase-negative staphylococci in four patients. Viral serology of liquid samples has not been studied and in this regard data could not be obtained.

Discussion and Conclusion: Differences are observed in studies regarding aetiology of pericardial effusion due to patients included. However, the most common aetiology of effusion in patients with clinical tamponade is malignancy. Likewise, the most common cause is malignancy in our study. Three patients were diagnosed by malignant pericardial fluid samples and further treatment was performed. Although transudate or exudate fluids are predictors of possible causes of tamponade, further investigation with cytological evaluation should be done in every patient. Two patients were lost, one during and one after pericardiocentesis shows possible complications happen and one should be careful.

Epidemiology

PP-164

Intima media thickness of carotid in inflammatory disease is Increased presence of secondary amyloidosis: a cross-sectional, controlled study

Uğur Arslantaş, Mustafa Bulut, Mehmet Emin Kalkan, Anıl Avcı, Mustafa Tabakçı, Sinan Çersit, Cüneyt Toprak, Selçuk Pala

Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Inflammation plays a important role in the pathogenesis of atherosclerosis and systemic AA amyloidosis but little is known of relationship with both. The aim of our study was to assess this relationship via carotid intima–media thickness (CIMT) in patients with systemic AA amyloidosis and suitable control.

Materials and Method: We studied 6 AS and 8 FMF patients with amyloidosis. Also 16 AS and 18 FMF patient without amyloidosis and 13 healthy volunteers (matched for age, sex, and other major risk factors for atherosclerosis) were included as the control groups. Subclinical atherosclerosis was assessed by investigating measuring IMT from carotid arteries using B-mode ultrasonography (USG).

Results: The carotid IMTs was found to be significantly higher in inflammatory disease patients with amyloidosis than inflammatory disease patients without amyloidosis (0,70mm (0,65-0,80) vs. 0,60mm (0,50-0,60) p<0,001) or healthy controls (0,70 mm (0,65-0,80) vs. 0,45 mm (0,40-0,50) p<0,001). Also, the Hs-CRP levels were significantly higher in patient with AA amyloidosis group than control groups (p<0.001).

Discussion and Conclusion: Increased atherosclerosis defined as the IMTs was observed in patients with amyloidosis possibly due to uncontrolled inflammation in inflammatory disease. Prospective studies with greater number of participants replicating our findings are warranted in order to confirm these associations.

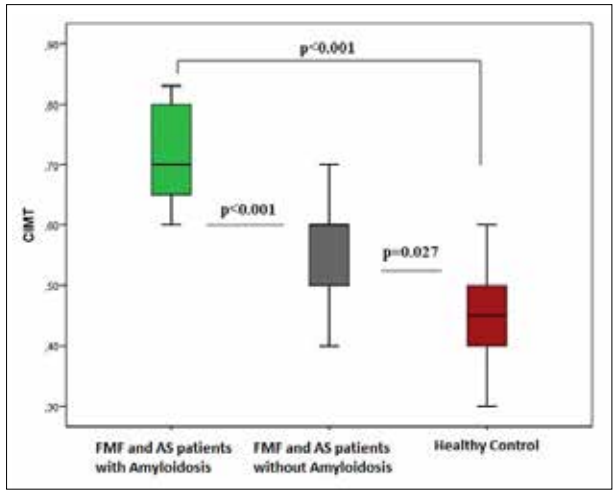


Figure 1. Mean Carotid Intima Media Thickness in groups

Epidemiology

PP-165

The condition of rational drug use in patients over the age of 65 in Gaziantep region

Necla Benlier[1], Burak Şahin[1], M. Enes Göğer[1], Elif Sezal[1], Dilahan Sankır[1], A. Kübra Pamukiçi[1], Berfin Songurtekin[1], Büşra Deniz[1], Berkan Ülgey[1], İdil Caf[1], F. Sinan Gürkan[1], Tanyeli Günayligil[2], Özlem Soran3

[1]Sanko University Medical School Hospital, Gaziantep
[2]Gaziantep University Faculty of Medicine, Gaziantep
[3]Pittsburgh University, USA

Introduction: The rate of chronic disease present increased by age. The compliance rate of long-term medication therapies is low in elderly patients. However, the success of treatment depends on the drug adherence rates. The aim of this study is to collect data on the habits of drug use of local patients with chronic disease. In the light of these findings we'll assess the feasibility of creating education and follow-up programs on rational drug use tailored considering to regional needs

Materials and Method: The study took place in SANKO University hospital. Personal surveys were administered by trained medical interviewers to patient age of 65 years or older who visited the cardiology, cardiovascular surgery, neurology and internal medicine outpatient clinics. Data on presence of diabetes, coronary artery disease, hypertension, hyperlipidemia and similar chronic diseases including daily average number of drug usage, and drug usage habits were collected.

Results: Fifty-two% of patients were women, 30% were over the age of 75 and 34% were illiterate. Coronary artery disease, diabetes, heart failure and stroke were seen in 39%, 36%, 15%, and 2% of patients, respectively. The vast majority of the patients were taking more than 4 drugs daily. Thirty-one% using drugs that were not related with their chronic diseases and 33% were on vitamins without physician's recommendation; 24% started to use drugs just because of advertisements or by friend's influence; 26% stop taking prescribed drugs without asking their physicians and 39% stopped due to forgetfulness. Fifty-nine% reported that physicians did not explain the side effects of the drug and 23% said physicians did not question if they were on other drugs when they prescribe them. 25% stopped taking prescribed drugs when they experienced a slight side effect without asking a health professional. Fifty-nine% of the patients used at least one pain killer per month and 50% acquired the pain killer drug from home, however, only 39% checked the expiration date of the drugs. Sixty-four% learned how to use drugs from pharmacist and 87% did not accept use generic drugs.

Discussion and Conclusion: The results of our study revealed that in Gaziantep region patients over the age of 65 with chronic diseases took at least 4 drugs per day, however, were not knowledgeable about rational drug use. These findings suggest that population based education and follow-up programs tailored according to regional needs should be implemented to improve rational drug use.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-166

Retrograde aortic approach for atrioventricular junction ablation: a single center experience

Kudret Aytemir, Serkan Asil, Uğur Canpolat, Nihan Bahadır, Hikmet Yorgun, Levent Şahiner, Ergün Barış Kaya, Ali Oto, Necla Özer

Hacettepe University Faculty of Medicine, Ankara

Introduction: We aimed to present the results of our experience with retrograde aortic approach for AVJ ablation in patients who were previously implanted with pacemakers or ICDs at least 30 days before the procedure.
Materials and Method: Retrospective analysis of prospectively collected data was performed for a total of 39 patients (56.4% male, age: 64.3±10.5 years) in whom AVJ ablation has been performed via retrograde aortic approach in between January 2009 and April 2015. All pre- and post-procedural data were collected from the hospital registry and procedural notes.
Results: In addition to AF, most common concomitant comorbidities were dilated cardiomyopathy (47.8%) and hypertrophic cardiomyopathy (20.5%). Before ablation procedure, most of the patients already have had CRT-D (59%), ICD (28.2%) or PM (12.8%). The main indications for AVJ ablation were rate control for 64.1% and inappropriate ICD shocks for 35.9% of the patients. Procedural success rate was 97.4%. There was no minor or major procedural complication. During index hospitalization, only 1 (2.6%) patient developed hemodynamically unstable ventricular tachycardia episode. While the rate of repeated hospitalizations were 92.3% before the ablation procedure, there was a significant reduction to 33.3% after the AVJ ablation. Moreover, none of the postprocedural hospitalizations were due to AF episodes. The rate of the hospitalizations due to heart failure was also significantly reduced (43.6% to 12.8%). During follow-up, the rate of all cause mortality was 5.1% (2 patients).
Discussion and Conclusion: High success rate and low procedural complications in this study suggest that retrograde aortic approach can be used as a safe and effective option for AVJ ablation due to supraventricular arrhythmias.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-167

Evaluation of Tp-e interval and Tp-e / QT ratio in patients with mitral annular calcification

Abdulmecit Afşin, Mahmut Yılmaz, Şeyda Değer, Hasan Pekdemir

İnönü University Faculty of Medicine, Malatya

Introduction: Mitral annular calcification (MAC) is a common clinical entity in the elderly population and it is regarded as a manifestation of cardiovascular disease. Recent studies have shown that prolongation of the interval between the peak and the end of T wave on electrocardiogram (Tp-e), which is accepted as an index of transmural dispersion of ventricular repolarization, and Tp-e/QT ratio are associated with ventricular arrhythmia. In the present study, we aimed to evaluate ventricular repolarisation by using Tp-e interval and Tp-e/QT ratio in patients with MAC.
Materials and Method: Fifty patients with MAC (27 females and 23 males; mean age 71.6±8.0 years) and 50 patients without MAC (26 females and 24 males; mean age 69.3±6.2 years) were included in the study. All participants underwent detailed pyhsical and transthoracic examinations. Maximum and minumum QT and Tp-e intervals as well as corrected values according to heart rate were calculated from 12-derivations electrocardiography. QT dispersion and Tp-e / QT ratio were calculated. All parameters were compared between groups.
Results: Patients with MAC had significantly higher values of Tp-e interval (75,8±11,6 vs 62,1±8,7; p<0,001), cTp-e interval (84,9±14,3 vs 67,5±9,7; p<0,001), Tp-e/QT ratio (0,19±0,02 vs 0,15±0,02; p<0,001), cTp-e/QT ratio (0,19±0,03 vs 0,15±0,02; p<0,001), cQTmin (390,1±31,5 vs 373,8±26,1; p=0,006) when compared to control subjects. There were positive correlations between E/Em ratio and cTp-e interval (r=0,396; p=0.004), and between E/Em ratio and cTp-e/QT ratio (r=0,535; p<0,001) in the MAC group. Further, positive correlations were found between left atrium and cTp-e interval (r=0,50; p=0,001), left atrium and cTp-e/ QT ratio (r=0,30; p=0,028) in the MAC grup. QTmax and QTd was similar between groups.
Discussion and Conclusion: According to our study findings, patients with MAC had elevated Tp-e interval, cTp-e interval, Tp-e/QT ratio and cTp-e/QT ratio in comparision to those without MAC.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-168

The effect of levosimendan on Tp-e interval, Tp-e/QT ratio, Tp-e/QTc ratio and QRS interval in heart failure patients

İbrahim Aktaş, Sencer Camcı, Hasan Arı, Ahmet Tütüncü, Selma Arı, İsmet Zengin, Alper Karakuş, Mustafa Kınık, Berat Uğuz, Mehmet Melek

Bursa Yüksek İhtisas Training and Research Hospital, Bursa

Introduction: The interval from the peak to the end of the electrocardiographic (ECG) T wave (Tp-e) may correspond to the transmural dispersion of repolarization and that increased Tp-e interval and Tp-e/QT ratio are associated with malignant ventricular arrhythmias. We aimed to evaluate the acute effects of levosimendan on Tp-e interval, Tp-e/QT ratio, Tp-e/QTc ratio, and QRS interval in patients with severe heart failure.
Materials and Method: 85 patients were included the study who were treated with levosimendan cause of decompansed heart failure in our cardiology department. We evaluated the patients retrospectively. The ECG parameters were measured from the 12 lead ECG (25 mm/sn paper speed and 1 mV/mm standardization). First of all 12 lead ECG was scaned than the ECG examinations were performed with the autocad programme by 2 independent observers blinded to all other patient's data and an average of two measurements was accepted as final result. QT and Tp-e interval was assessed in the precordial leads. The Tp-e interval was defined as the interval from the peak to the end of T wave. The QT interval was measured from the beginning of the QRS complex to the end of the T wave, and corrected for heart rate using the Bazett formula. QRS duration was determined in the single lead which had the longest QRS. The ECG measurements performed the basal (just before the levosimendan) and 24th hour after the levosimendan infusion.
Results: No significant differences were found before and after treatment of levosimendan with respect to Tp-e interval, QTc interval, QRS duration, Tp-e/QT and Tp-e/QTc ratio (Pretreatment vs 24th hour values; Tp-e:93.85±20.53ms vs 93.97±21.97ms, QTc:465.49±53.38ms vs 460.82±53.78ms, QRS duration: 107.10±31.21 vs 107.71±30.69, Tp-e/QT:0.24±0.05 vs 0.24±0.06, Tp-e/QTc:0.20±0.05 vs 0.20±0.04) (p>0.05). Subgroup analysis performed to the patients with inotropic therapy (dopamine and/or dobutamin) during the levosimendan infusion (34 patients) and without inotropic therapy (49 patients). The analysis showed that pretreatment and 24th hour values of Tp-e interval and Tp-e/QT ratio were significantly higher in the inotropic therapy group; (Pretreatment; Tp-e:100.12±22.96ms vs 89.59±17.67ms; p=0.03, Tp-e/QT:0.26±0.05 vs 0.23±0.04; p=0.007, 24th hour: Tp-e:101.41±27.09 ms vs 88.77±15.89ms; p=0.009, Tp-e/QT:0.26±0.07 vs 0.23±0.05; p=0.03).
Discussion and Conclusion: Our results suggest that, therapeutic doses of levosimendan infusion do not have a significant effect on Tp-e and Tp-e/QT parameters. However levosimendan and concomitant inotropic therapy significantly increase these parameters.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-169

Appropriateness of apixaban use in patients with non-valvular atrial fibrilation: insights from RAMSES study

Özcan Başaran[1], Nesrin Filiz Başaran[1], Edip Güvenç Çekiç[1], Osman Beton[2], Macit Kalçık[3], Sinan İnci[4], Sedat Kalkan[5], Ahmet İlker Tekkeşin[6], Vahit Demir[7], Sabri Seyis[8], Ayşe Çolak[9], Cevat Kırma[10], Mustafa Özcan Soylu[1], Murat Biteker[1]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Cumhuriyet University, Faculty of Medicine, Sivas
[3]İskilip Atıf Hoca State Hospital, Çorum
[4]Aksaray State Hospital, Aksaray
[5]Gönen State Hospital, Balıkesir
[6]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital,İstanbul
[7]Yozgat State Hospital, Yozgat
[8]Mersin Private Dogus Hospital, Mersin
[9]Mut State Hospital, Mersin
[10]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: Non-vitamin K antagonist oral anticoagulants (NOACs) were introduced as alternatives to vitamin K antagonists in patients with non-valvular atrial fibrillation (NVAF). Apixaban is the last introduced drug of NOACs to clinical practice. Two different dosage forms of apixaban; 2.5 mg and 5 mg are currently available. The lower dose of this drug should be spared for older patients with renal insufficiency or low weight. In this subgroup analysis, we tried to evaluate the appropriateness of apixaban use in patients with NVAF.
Materials and Method: ReAl-life Multicenter Survey Evaluating Stroke Prevention Strategies (RAMSES) study was a prospective, observational, multicenter, and nationwide study that was conducted in outpatient cardiology clinics. Patients from RAMSES who were on apixaban included to the study. The appropriate use of the drug was defined for patients with at least two of the following characteristics: over 80 years old, creatinine >1.5 mg/dl, and body weight <60 kg.
Results: Of the 6273 NVAF patients included in the RAMSES study, 250 patients were on apixaban therapy. Apixaban 5 mg was prescribed in 203 patients (81.2%) and 2.5 mg apixaban was prescribed in 47 patients (18.8%) (Table). After excluding 2 patients with missing values, 47 patients on low dose and 203 patients on high dose apixaban were analysed for appropriate use. Our analysis showed that low dose apixaban was appropriate only in 3 patients (6.4%). When the patients using 5 mg apixaban were evaluated, lower dosage found to be more convenient in 1 patient (0.5%) according to age, creatinine, and weight.
Discussion and Conclusion: Subgroup analysis of the RAMSES study revealed that inappropriate use of apixaban is a major problem in patients using lower dosage of the drug which may cause the fail of stroke prevention strategies.

Table 1. Comparison of low and high dose of apixaban

	Apixaban 2.5 mg (n=47)	Apixaban 5 mg (n=203)	P value
Male (%)	16 (34)	98 (48.3)	0.104
Age (mean±SD)	73.9 ± 10.2	68 ± 10.6	0.001
Smoking (%)	8 (17)	38(18.8)	1
CHA_2DS_2VASc (mean±SD)	3.47 ± 1.41	3.05 ± 1.52	0.087
HAS-BLED (mean±SD)	1.85 ± 1.08	1.51 ± 1.03	0.045
History of major bleeding (%)	3 (6.4)	7 (3.4)	0.4
History of minor bleeding (%)	7 (14.9)	20 (9.9)	0.305

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-170

Clinical course of the patients who has been implanted VDD pacemaker due to atrioventricular block

Songül Usalp, Sabri Demircan, Özgür Kaplan, İsmail Polat Canbolat, Murat Başkurt, Çavlan Çiftçi, Nuran Yazıcıoğlu

İstanbul Bilim University, Florence Nightingale Hospital, İstanbul

Introduction: In patients with atrioventricular (AV) block without sinus node dysfunction, VDD pacemaker implantation has been used for years and was recommended as the primary mode choice. However in the recent years, dual chamber pacemaker systems have gained wider usage because of several reasons like the absence of technological developments in the VDD leads unlike other leads, atrial sensing problems, apical pacing, worries about lead dislocation because of the lack of active fixation, development of sinus node diseases throughout the follow up and need of atrial pacing. In this retrospective analysis, we aimed to investigate the clinical, demographic, echocardiographic features of the patients who had VDD pacemaker implanted as a treatment in the follow up.

Materials and Method: In our study, 442 patients (230 women, 52%) who have had VDD pacemaker implantation due to AV block in our center between 1985 and 2012 were investigated retrospectively. Several demographic and echocardiographic data that are associated with clinical disease progression were taken into account in 162 patients whose data could be obtained.

Results: The mean age of the patients was 66.9±16 (0-97 years). The indications for pacemaker implantation were complete AV block (54.5%), intermittent block (34.8%), trifascicular block (2.3%), postoperative AV block (13.8%) and post – myocardial infarction AV block (0.9%). In most of the patients, left side implantation (cephalic vein in 67.2%, subclavian vein in 30.4%) was preferred. After a mean follow up of 9.0±4.7 years, when compared to baseline values, a significant decrease in ejection fraction (EF) (54.9±9.8% vs. 51.0±10.2%, p<0.0001) and significant increases in left atrium size (4.1±0.5 cm vs. 4.3±0.6 cm, p < 0.0001) and pulmonary arterial systolic pressure (35.6±11.7 mmHg vs. 39.0±10.0 mmHg, p=0.015) were found. 9 patients (2%) had infection of the device wound and all of these patients had their leads extracted. A total of 12 patients (2.7%) had re-implantation due to various reasons. 3 patients (0.7%) had ICD implantation due to low EF. Before pacemaker implantation, 94 patients were found to have coronary artery disease (CAD) and in 56 patients (12.6%) revascularization was performed (44 by-pass surgery, 10 stent implantation, 2 angioplasty). After the pacemaker implantation, 29 patients had the need for coronary imaging and 19 of these (4.2%) were taken into revascularization (12 stent implantation, 5 by-pass surgery, 2 angioplasty). During the follow up, replacement was needed once in 161 patients (36.4%), twice in 33 patients (7.4%), three times in 2 patients (0,4%). Upgrading was performed in 11 patients (2.5%) (7 DDD, 4 CRT).

Discussion and Conclusion: Even though VDD pacemaker implantation in the patients who have AV block without sinus node dysfunction was found to be safe, after long term follow up, it causes decrease in EF, increase in left atrial size and pulmonary artery pressure.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-171

The effect of differential AV delays on arterial distensibility and serum norepinephrine levels in patients with DDD pacing

Betül Balaban Koçaş, Gökhan Çetinkal, Şükrü Arslan, Urfan Jaferov, Okay Abacı, Cuneyt Kocaş, Sait Mesut Doğan, Mustafa Yıldız

İstanbul University Institute of Cardiology, İstanbul

Introduction: Atrioventricular (AV) delay optimization improves hemodynamics and clinical parameters in patients treated with dual-chamber-pacemakers. Pulse wave velocity (PWV) is one of the most important parameters to evaluate elastic properties of great arteries. It is an index of arterial stiffness and a marker of cardiovascular events. Increased values of PWV is an indicator of diffuse atherosclerosis and decreased arterial distensibility. Sympathetic neural control also affects both small resistant and great arteries. In this study, the effect of differential AV delays (100, 150 and 200 ms respectively) on arterial distensibility measured by carotid – femoral PWV and serum norepinephrine levels in patients with DDD pacing were investigated.

Materials and Method: A total of 40 patients with DDD pacing within age limits of 23 to 84, were enrolled in this study consisting of 19 female (mean age 64.9±15.4 years) and 21 male (mean age 60.1±16.3 years). PWV was measured for each AV delay (100 ms,150 ms and 200 ms respectively) with 10 minute resting intervals. Also, blood samples were taken for serum norepinephrine levels at the end of each interval. Pacing was programmed at least 10 beats/minute above the resting heart rate of patients. Aortic PWV was determined by using automatic device, the Complior Colson (France),which allows online pulse wave recording and automatic calculation of PWV. PWV is calculated from measurements of pulse transit time and the distance travelled by the pulse between two recording sites,according to this formula: PWV(m/s) = Distance (m) / transit time (s). Serum norepinephrine levels were determined by ELISA method.

Results: There was not a statistically significant correlation between prolonged AV intervals and systolic blood pressure, diastolic blood pressure, mean blood pressure and pulse pressure (p=0.105, p=0.264, p=0.449 and p=1.000 respectively). Prolongation in AV interval caused an increase in carotid-femoral PWV thereby a decrease in pulse wave propogation time (PWPT) (p<0.001 and p<0.001 respectively). There was not a statistically significant difference between measured levels of norepinephrine and prolonged AV intervals (p=0.876).

Discussion and Conclusion: In conclusion, the prolongation in AV delay interval caused an increase in carotid-femoral PWV thereby decrease in arterial distensibility independently from serum norepinephrine levels in patients with DDD pacing.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-172

Association between cerebral dominance and heart rate variability in healty young men

Sinan İşçen

Diyarbakır Military Hospital, Diyarbakır

Introduction: Recently studies has reported that heart disease might be one reason for a reduced longevity among left-handers. Since autonom changes are present in left-handedness subjects, we also hypothesized that cerebral dominance may contribute to differences in cardiovascular autonomic control of right-handers and left-handers.Therefore the aim of this study was to examine the association between left-handedness and cardiac otonom functions with HRV indexes.

Materials and Method: Between May 2012 and July 2013, 220 asymptomatic young male subjects underwent routine health check-up. All were submitted to a Standard protocol that included a complete clinical examination, laboratory evaluation, 12-lead ECG, 2D-echocardiogram, entire long-term 24-hour period Holter Recorder(for atypical compliants). Of them, 40 (18%) subjects were left-handedness. All analyses were performed using statistical package SPSS 15.0 (SPSS, Chicago, IL, USA). and statistical significance was assessed at the two-tailed 0.05 threshold.

Results: Left-handers had significantly lower values, compared to right-handers, in the following parameters; SDNN (33.10±17.14, 40.30±17.1, <0.001) and RMSSD (24.83±20.3, 33.70±21.81, <0.001) were significantly lower in left-handedness than in controls and left-handedness (or non-right-handedness) was associated with an increased sempatovagal imbalance (LF:HF ratio 1.62±0.5, 1.32±0.5, <0.001). Significant reduction of spectral power in HF band (33.01±21.19, 46.25±15.38, <0.001) and in total power was also observed in our left-handedness participants relative to controls.

Discussion and Conclusion: We found a significant association between left-handedness and decreased HRV indexes in the healty young subjects so contrary to common belief that it is generally accepted as benign condition, in the present study this typical cerebral organization associated with left-handedness could be the reason for the higher frequency of heart diseases and sudden death in the context of coronary artery disease in left-handers.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-173

Prescription patterns of non-vitamin K oral anticoagulants in Turkey: results from RAMSES study

Volkan Doğan[1], Nesrin Filiz Başaran[1], Edip Güvenç Çekiç[1], Özcan Başaran[1], Ezgi Kalaycıoğlu[2], Özgen Şafak[3], Sedat Kalkan[4], Füsun Helvacı[5], İbrahim Rencüzoğulları[6], Özlem Özcan Çelebi[7], Ekrem Bilal Karaayvaz[8], Cevat Kırma[9], Mustafa Özcan Soylu[1], Murat Biteker[4]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[3]Burdur State Hospital, Burdur
[4]Gönen State Hospital, Balıkesir
[5]Şişli Etfal Training and Research Hospital, İstanbul
[6]Kafkas University Faculty of Medicine, Kars
[7]Medicana International, Ankara
[8]Bağcılar Training and Research Hospital, İstanbul
[9]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul

Introduction: The non-vitamin K antagonist oral anticoagulants (NOACs) have been prescribed in increasing rates in clinical practice after getting to the market. NOACs are used for stroke prevention in non-valvular atrial fibrillation (NVAF) patients due to their easily follow-up conditions compared with vitamin K-antagonist. There are three alternative options of NOACs namely dabigatran, rivaroxaban and apixaban. In the subgroup of the RAMSES study, we aimed to evaluate the characteristics of different NOAC treatments in patients with NVAF.

Materials and Method: The ReAl-life Multicenter Survey Evaluating Stroke prevention strategies (RAMSES) study was planned as a prospective, observational study and conducted in outpatient cardiology clinics. AF was classified as NVAF in the absence of rheumatic mitral stenosis or valvular prosthesis. We enrolled a total number of 6273 patients after contacting 57 sites those are accepted to participate. Patients taking dabigatran, rivaroxaban and apixaban were investigated for their CHA2DS2VASc score, HASBLED score, comorbidities, history of bleeding and stroke.

Results: Socio-demographic descriptions were given in the Table. 6273 patients were included in the RAMSES study and 2340 of the patients who were on NOAC therapy were enrolled for the subgroup analysis. The most frequent prescribed NOAC was dabigatran (1148; 49.1%). Rivaroxaban was prescribed in 942 (40.2%) and apixaban was prescribed in 250 patients (10.7%). The CHA_2DS_2VASc score, HASBLED score and comorbidities were similar in all three NOAC groups.

Discussion and Conclusion: Although dabigatran is the most preferred NOAC in our country, demographics and comorbidities were similar with all NOACs.

Table 1. Patient characteristics

	Dabigatran (n=1148)	Rivaroxaban (n=942)	Apixaban (n=250)	P value
Male (%)	684 (62.2)	556 (57.8)	144 (65.6)	0.031
Age (mean±SD)	70.5±10.2	70.5±10	69.1±10.7	0.115
CHA2DS2VASc score (mean±SD)	3.34±1.56	3.38±3.55	3.33±3.51	0.059
HASBLED score (mean±SD)	1.59±0.98	1.56 ±0.98	1.58±1.05	0.857
Comorbidity				
Congestive heart failure (%)	213 (18.6)	184 (19.6)	47 (18.8)	0.803
Hypertension (%)	758 (66.2)	677 (71.9)	168 (67.2)	0.019
Diabetes Mellitus (%)	266 (23.2)	207 (22)	56 (22.4)	0.789
Vascular disease (%)	256 (22.3)	213 (22.6)	50 (20)	0.497
Chronic kidney disease (%)	36 (4.8)	26 (3.2)	12 (5.3)	0.274
Coronary heart disease (%)	292 (25.5)	236 (22.9)	53 (21.2)	0.223
Bleeding history				
Major Bleeding (%)	47 (4.8)	33 (3.8)	10 (4)	0.661
Minor bleeding (%)	125 (11)	105 (11.7)	27 (10.8)	0.029
Stroke history (%)	170 (14.8)	144 (15.3)	42 (16.8)	0.736
Creatinine clearance (ml/min)	72.9±20	70.96±18.1	70.76±18.8	0.093

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-174

Assessment of left atrial function in patients with celiac disease

Nermin Bayar[1], Ayhan Hilmi Çekin[1], Şakir Arslan[1], Göksel Çağırcı[1], Zehra Erkal[1], Serkan Çay[2], Erkan Köklü[1], Bayram Yeşil[1], Selçuk Küçükseymen[1]

[1]Antalya Education and Research Hospital, Antalya
[2]Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: There is some evidence suggesting increased risk of atrial fibrillation (AF) in patients with celiac disease (CD). Impaired left atrial function plays a significant role in the development of AF. This study aims at assessing the electrical and mechanical functions of the left atrium in patients with CD.
Materials and Method: A total of 71 patients with biopsy-proven, antibody-positive CD and 52 age-matched healthy controls were included in this prospective study. P wave dispersion(PWD) was measured to assess the electrical functions of the left atrium through the use of surface electrocardiography. A tissue Doppler echocardiography was performed to determine the atrial conduction and electro-mechanical delay(EMD) time. In order to evaluate the mechanical functions of the left atrium, maximum, minimum, and pre-systolic atrial volumes were estimated to calculate the contractile, conduit and reservoir functions.
Results: In terms of transthoracic echocardiographic parameters, CD and control subjects were not significantly different. However, as compared to controls, CD patients had significantly increased PWD (median 52 ms[interquartile range 46-58 ms] vs 38 [36-40], p<0.001). Also, significantly higher inter-atrial (49 ms [32-60] vs 26 ms [22-28], p<0.001), intra-left atrial (26 ms [17-44] vs 14 ms [12-18], p<0.001) and intra-right atrial (15 ms [8-22] vs 10 ms [8-14], p<0.001) EMD was found among CD subjects than controls. Despite an increase in the left atrial volume in CD patients, conduit and reservoir functions were comparable.
Discussion and Conclusion: Although atrial mechanical functions are preserved in CD patients, a slower electrical conduction was found, suggesting an increased risk of AF in this group of patients.

Table 1. Atrial electrical activity parameters

Variable	Celiac disease (n=71)	Control group (n=52)	p value
Pmin, ms	56 (51-60)	50 (46.5-61.5)	0.138
Pmax, ms	110 (100-115)	90 (88-96)	<0.001
PWD, ms	52 (46-58)	38 (36-40)	<0.001
PA'septal, ms	76 (69-89)	52 (50-56)	<0.001
PA'lateral, ms	110 (99-118)	67 (64-71.5)	<0.001
PA'tricuspid, ms	60 (55-72)	42 (40-46)	<0.001
intraLA-EMD, ms	26 (17-24)	14(12.3-18)	<0.001
intraRA-EMD, ms	15(8-22)	10 (8-14)	<0.001
Interatrial-EMD, ms	49(32-60)	26(22-28)	<0.001

Table 2. Left atrial mechanical functions

Variable	Celiac disease (n=71)	Control group (n=52)	p value
LAVmax, ml/m²	42 (31-53)	30.5 (26-39.5)	<0.001
LAVmin, ml/m²	11 (8-15)	10 (8-11)	0.037
LAVpre-a, ml/m²	20 (14-28)	17 (14-20)	0.002
Reservoir volume, ml/m²	30 (22-36)	21.5 (17-28)	<0.001
Conduit volume, ml/m²	19 (14-28)	14(11.3-18)	<0.001
Contractile volume, ml/m²	10 (5-12)	6 (4-8.8)	0.011
Reservoir function, %	72 ± 8	70 ± 7	0.213
Conduit function, %	50 ± 11	48 ±10	0.309
Pumping function, %	45 (35-55)	38 (30-54)	0.319
Distensibilityindex	2.78 ± 1.10	2.55 ± 1.11	0.285

Cardiovascular nursing / Technician

PP-175

Effect of psychosocial support on depressive symptoms in patients with heart failure

Çiğdem Ökten, Selma Turan Kavradım, Zeynep Özer

Akdeniz University Nursing Faculty, Antalya

Introduction: Heart failure is a chronic, life-limiting illness resulting from the heart's inability. The prevalence of heart failure is approximately 2–3% in the general population and increases with age. Psychosocial support may improve quality of life while reducing depressive symptoms in patients with heart failure. Purpose: The aim of this review, is to examine the effect of psychosocial support on depressive symptoms in patients with heart failure.
Materials and Method: We conducted a systematic literature review to evaluate the study results within effect of psychosocial support on depressive symptoms in patients with heart failure. Akdeniz University center electronic databases including MEDLINE, CINAHL, Sciencedirect, Cochrane library were searched studies published in English with "heart failure and psychosocial support", "heart failure and depressive symptoms" and "psychosocial support and depressive symptoms in patients with heart failure" key words. Search results reached in the 7757 articles. Also references of the determined studies had reviewed. Investigation of the articles published between 2011-2014, which can be accessed in full text, the original three articles have been sampled.
Results: A cross-sectional study was conducted by Heo and colleagues (2014). In this study, the various types of social support associated with physical and depressive symptoms and health-related quality of life in patients with heart failure were examined. According to the study, Emotional support was related to all physical and depressive symptoms and health-related quality of life. Patients who had greater emotional support had less severe depressive symptoms. Another study was conducted by Sacco and colleagues in 2014. In the study, patients reported many psychosocial resources, particularly positive meaning, religion/spirituality, social support, and medical resources. Positive meaning and religion/spirituality were inversely linked with depressive symptoms and less death anxiety. Another study was conducted by Chung Sacco and colleagues in 2011. According to the study, patients with high perceived social support were older and married, and had lower levels of depressive symptoms than patients with low levels of perceived social support.
Discussion and Conclusion: Psychosocial support can reduce depressive symptoms and anxiety. Also, raising social support can increase quality of life. So, psychosocial support resources should be increased for patients with heart failure.

Cardiovascular nursing / Technician

PP-176

Relationship with health behaviours and social media uses of İstanbul University students

Hilal Uysal, Özge Can, Emine Öksüz

İstanbul University, İstanbul

Introduction: This study was planned as a descriptive study in order to investigate the relationship between lifestyle behaviors and social media between students of the three Faculty of the University of İstanbul.
Materials and Method: Students who agreed to participate in the study, datasheets for learning ideas and habits, individual features, the International Physical Activity Questionnaire and the Dietary Pattern Index were collected. Data were analyzed with SPSS.
Results: According to the socio-demographic characteristics, the majority of students participating in the study of women (77%; n=755) were created. Men's breakfast (p<0.05) and dinner at the (p>0.05), while the girls lunch (p<0.05) and intermediate meals (p>0.05) were found that the skip. Of the majority of the students who participated in the study, BAU risk level at medium/high risk category were detected (p<0.05). According to the MET values, almost all of the students (99.7%; n=977) were identified as low physical activity levels (p<0.05). The majority of students, social networking sites, a variety of information and resources to share with friends, be informed of developments related to everyday life, communicate and health, were found to use to achieve social issues. Students and friends of obtaining information on health-related issues and to share, primarily respectively facebook, tweeter and instagram they prefer, however, in line with these objectives, that in the majority of those who use any site (p<0.05) were detected.
Discussion and Conclusion: In the study, to receive and share information on health-related issues, social media were identified as usually not preferred.

Cardiovascular nursing / Technician

PP-177

Effects of a comprehensive cardiac rehabilitation program and patients' perspectives on cardiac rehabilitation

Selma Turan Kavradım, Çiğdem Ökten, Zeynep Özer

Akdeniz University Nursing Faculty, Antalya

Introduction: Cardiac rehabilitation is a complex multifaceted intervention consisting of three core modalities: education, exercise training and psychological support. Cardiac rehabilitation programs are effective for risk reduction. Purpose: To determine the effectiveness of cardiac rehabilitation with coronary heart disease and patients' perspectives preventive attitudes on cardiac rehabilitation.
Materials and Method: We conducted a systematic literature review to evaluate the study results within the Akdeniz University center electronic databases including MEDLINE, CINAHL, EBSCOHOST and Cochrane Library were searched studies published within the last five years with "cardiac rehabilitation and coronary heart disease" key words. Search results reached in the 1944 articles and six articles have been sampled.
Results: Heran and colleagues (2011) indicated exercise-based cardiac rehabilitation is effective in reducing total and cardiovascular mortality and hospital admissions. AHA recommend 40 minutes of aerobic exercise of moderate to vigorous intensity three to four times a week to lower the risk for heart attack and stroke. Anderson and Taylor (2014) have shown that cardiac rehabilitation to medical management is effective, improving health-related quality of life and reducing the risk of future hospitalisations, and safe. Another study conducted by Taylor and colleagues (2010) have shown that home and centre based cardiac rehabilitation appear to be equally effective in improving the clinical and health related quality of life outcomes. Sevinc and Eser (2011)) indicated that from Turkey, to examine the secondary preventive attitudes of the patients with myocard infarction, among the patients, 52.2% is obese, 54.3% quitted smoking, 42.4% admits for examination whenever he/she feels discomfort, 40.2% never exercise, 42.4% never eat red meat, 85.9% never consume solid oil and 92.4% consume daily fresh vegetables and fruits. Another study conducted by White and colleagues (2010) have shown that, all patients reported continuing to take cardiac medicines, but tended to only maintain changes to aspects of lifestyle perceived as causes of coronary heart disease, rather than viewing lifestyle recommendations as standards to achieve.
Discussion and Conclusion: Results of this review showed that cardiac rehabilitation has been shown to promote a healthy lifestyle, improve physical health, and decrease subsequent morbidity and mortality. And individualizing information and actively seeking and responding to patients' needs is important.

Cardiovascular nursing / Technician

PP-178

Coronary nursing care monitoring and maintenance algorithms

Fatma Şahin

Bursa Yüksek İhtisas Training and Research Hospital, Bursa

Introduction: Today, the increasing importance of scientific knowledge and health care practices differ rapidly. The increasingly aging population, chronic and acute illness of the patient follow-up treatment rapidly changing depending on the model and the view that the care they are changing the açısını. Nursing underlying the 'CARE' and forms the maintenance process, '' FOLLOW '. Nursing practice, the patient's quality of life, is closely associated with a significant professional role in hospital length of stay and mortality. Therefore, the level of evidence and follow-up care algorithms, follow the elective process, maintain, and in raising the quality of care, processes of nurses is important in the creation and adaptation of standardization.
Materials and Method: Study, physical Inspection and patient assessment, patient self-care requirements were created as coronary drug protocols titles. The brainstorming session with nurses algorithm steps unit and the unit was determined at the meeting held with the responsible line nurses.
Results: Working 46 nurses were determined in accordance with the suggestions and requests. The average age of nurses in the study to be 29.71±5.13, 37.1% of the pre-degree, 48.8% of the license, was found to be a graduate of a high-degree of 14.1%. 4 main topics related to algorithms specified and titles were staged in themselves. Algorithms of the final version of the level of evidence in addition to the application implementation unit nurses were revised in line with the proposals for the convenience.
Discussion and Conclusion: Identified 4 main headings and in cascaded own algorithms will provide to give nurses more specific and effective service. Arranging and removing a booklet of this algorithm is planned.

Other

PP-179

Evaluation of serum vitamin D levels in patients with cardiac syndrome X

İsmail Ünğan, Fatma Nihan Turhan Çağlar, İlker Murat Çağlar, Serkan Çiftçi, Bülent Demir, Vusal Khankishiyev, Selçuk Opan, Osman Karakaya

Bakırköy Dr. Sadi Konuk Education and Research Hospital, İstanbul

Introduction: Cardiac syndrome X is defined in patients with normal coronary angiogram who has typical chest pain and objective myocardial ischemia evidence. Although the underlying mechanism is not fully understood yet, microvascular dysfunction is widely accepted.Endothelial cell dysfunstion is very important in syndrome X pathogenesis. Recent studies have evaluated the association between vitamin D deficiency (vit D def) and cardiovascular diseases such as hypertension, dislipidemia. Vit D def is related with positive regulation of renin-angiotensin-aldosterone system and increased vascular inflammation. Besides another study revealed clinical improvement after hormon replacement in syndrome X patients with vit D def. Our aim of this study was to compare serum vit D levels in patients with syndrome X and controls.
Materials and Method: We included 66 patients (49 women, 17 men) with syndrome X and 47 (30 women, 17 men) Healthy controls. All of the patients demographic features, laboratory analysis and medicaitons are recorded. Vit D is measured quantitatively by paramagnetic particle chemiluminescence method.
Results: Mean age of the syndrome X group was higher than controls (56±9.2 vs 49±9.6 p<0.001). Body mass index was higher in the patient group than controls (31.2±5.6 vs 29.1±4.7 p:0.011). Vit D levels were significantly lower in the syndrome X group than controls (6±5.2 vs 11.9±7. 8p <0.001). Parathormone levels were significantly higher in the syndrome X group than the control group (38.3±23.4 vs 28±17.2 p:0.014). hsCRP levels were higher in the syndrome X group than controls (3.1±5.4 vs 1.8±2.4 p:0.042). A significant difference between the patient and control groups as for other demographic characteristics and blood tests results was not observed.
Discussion and Conclusion: Vit D def may be a risk factor for syndrome X. Vit D def related increased inflammation may lead to the development of endothelial dysfunction and microvascular angina.

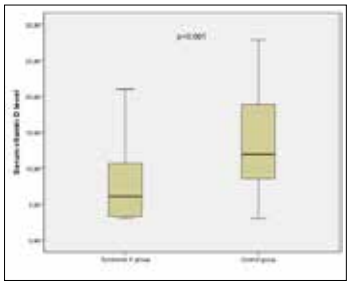


Figure 1. Vitamin D levels in syndrome X and controls

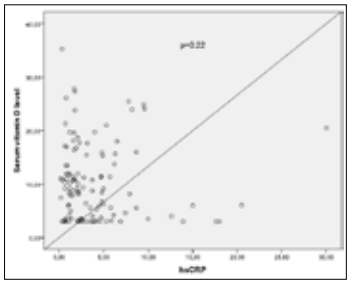


Figure 2. Correlation between vitamin D and hsCRP levels

Other

PP-180

Epicardial fat thickness is increased and correlated with aortic stiffness and B- type natriuretic peptide levels in real-world acute ischemic stroke

İbrahim Altun, Yasemin Ünal, Özcan Başaran, Fatih Akın, Gülser Karadaban Emir, Gülnihal Kutlu, Murat Biteker

Muğla Sıtkı Koçman University Faculty of Medicine, Muğla

Introduction: Epicardial fat which is a metabolically active endocrine organ has recently emerged as new risk factor and active player in metabolic and cardiovascular diseases. The aim of the present study is to investigate epicardial fat thickness (EFT) in patients with acute ischemic stroke (AIS) and evaluate the relationship of EFT with other prognostic factors
Materials and Method: Sixty-one consecutive patients aged ≥18 years with a first-ever-in-a-life AIS who were admitted to the hospital within 24 h of the onset of stroke symptoms were enrolled. The control group consisted of 82 consecutive sex- and age-matched patients free of stroke admitted to the cardiology polyclinics. Blood samples were taken for measurement of N-terminal pro-brain natriuretic peptide (NT-proBNP) levels at admission. Aortic stiffness indices and EFT measured by echocardiography which is performed within the first 48 h
Results: Patients with AIS had significantly increased EFT (4.8±0.9 mm versus 3.8±0.7 mm, p < 0.001) and higher NT-proBNP levels than those of the controls. The patients with AIS had lower aortic distensibility and aortic strain compared to those with control group. There was a significant positive correlation between EFT and NT-proBNP but a negative correlation between EFT and aortic strain. On multivariate linear regression analysis, NT-proBNP, EFT and aortic strain remained as significant variables associated with AIS. The optimal cut-off level, sensitivity, and specificity of NT-proBNP levels to distinguish the AIS group from the control group was 135 pg/mL, 80% and 81%, respectively. A cut- off EFT value of 4.28 mm was determined to predict AIS with 81% sensitivity and 81% specificity (Figure).
Discussion and Conclusion: There is a significant association between EFT, NT-proBNP and arterial dysfunction in patients with AIS. Increased EFT may represent a novel risk factor and and could provide additional information on assessing subclinical target organ damage in patients with AIS.

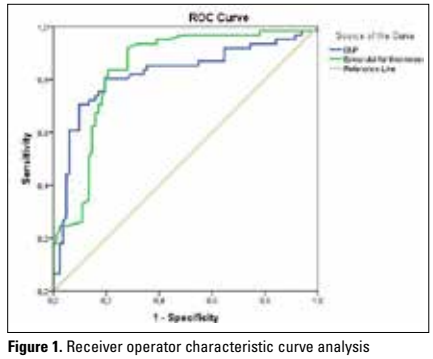


Figure 1. Receiver operator characteristic curve analysis

Other

PP-181

Xanthelasma is associated with increased cardio-anklevascular index in asymptomatic subjects

Ali Rıza Akyüz[1], İsmail Gürbak[1], Musluhittin Emre Erkuş[2], Levent Korkmaz[3], Turhan Turan[3], Selim Kul[4], Mustafa Tarık Ağaç[5]

[1]Akçaabat Haçkalı Baba Devlet Hospital, Trabzon
[2]Harran University Faculty of Medicine, Şanlıurfa
[3]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon
[4]Trabzon Kanuni Education and Research Hospital, Trabzon
[5]Sakarya University Faculty of Medicine, Sakarya

Introduction: Determination of certain cutaneous markers provides early detection of coronary artery disease in the subclinical phase of atherosclerosis. Xanthelasma palpebrum(XP) is a common cutaneous sign (Figure 1) which was shown to predict the risk of ischemic heart disease in general population, independently of well known cardiovascular risk factors. Arterial stiffness is being considered as a surrogate end point for cardiovascular (CV) disease and is an significant risk factor for cardiovascular morbidity and mortality. The aim of present study was to investigate the relation between Xanthelasma palpebrum (XP) and Cardio-anklevascular index (CAVI) in asymptomatic subjects.
Materials and Method: Consecutive 47 patients with xanthelasma and age- gender matched 47 control subjects were enrolled. Patients with known or having symptoms of atherosclerotic vascular diseases were excluded. CAVI was measured through VaSera –1000 cavi instrument and defined as abnormal if CAVI is ≥8. Data concerning coronary artery disease risk factors were collected by clinical history and blood chemistry.
Results: Risk factors, body mass index (BMI) and laboratory characteristics were similar in both groups. Subjects with XP had higher mean CAVI than patients without XP (8.17±1.68 vs. 6.74±1.20, p<0.001) (Fig. 2). Frequency of abnormal CAVI was higher in patients with XP compared to patients without XP (57.4% vs. 17.0%, p<0.001).
Discussion and Conclusion: In the present study, we found higher Cardio-anklevascular index in subjects with xanthelasma.

Figure 1. Xanthelasma palpebrarum was idenfined as sharply demarcated yellow-orange plaques on or around eyelids

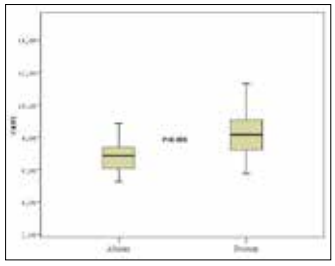


Figure 2. Box-plot showing higher mean cardio-ankle vascular index in patients with Xanthelasma palpebrarum

Other

PP-182

Evaluation of endothelial dysfunction with flow-mediated dilatation after transradial coronary angiography

Hüseyin Göksülük, Bahar Tekin Tak, Sibel Turhan, Menekşe Gerede, Cansın Tulunay Kaya, Çetin Erol

Ankara University Faculty of Medicine, İbni Sina Hospital, Ankara

Introduction: The transradial approach for coronary angiography and angioplasty is an alternative to the transfemoral approach. There are significant benefits including, improved time to ambulation and reduction in potentially life-threatening complications. We planned to investigate the endothelial dysfunction in the radial artery after transradial coronary angiography by flow-mediated dilatation

Materials and Method: Fifty-seven patients scheduled for left transradial coronary angiography were evaluated. The right radial arters of same patients were used as controls. Flow-mediated dilation (FMD) and nitroglycerin-mediated dilation (NMD) methods were used to investigate the endothelial function

Results: Participants were mainly male (73.7%) with a mean age of 62 years. Mean baseline diameter of both radial arteries were statisticaly not different (See table). The right radial artery diameters after FMD were higher compared with the left radial artery diameter [2.79 (±0.35) mm versus 2.69 (±0.27) mm (p=0.021)]. Increase in both the radial artery diameter after NMD were not different [right radial arter diamater was 3.11±0.35 mm, left radial arter diamater was 2.97±0.41 mm (p=0.125)]

Discussion and Conclusion: Vasodilator function of the radial arter that used for transradial aproach was more deteriorate and this result in endothelial damage. If there is a possibility to use of radial artery as a greft for coronary arter bypass or a fistula for dialysis, this injury should be considered.

Table 1. Diameters of radial arteries

	Right radial artery	Left radial arty	p value
Baseline Diameter	2,44(±0,37)	2,46(±0,38)	0,7
Flow Mediated Diameter (FMD)	2,69(±0,27)	2,79(±0,35)	0,021
Nytroglicerin mediated dilatation (NMD)	2,97(±0,41)	3,11(±0,35)	0,125
FMD (difference in diameter-DID)	0,25(±0,17)	0,33(±0,32)	0,012
NMD (DID)	0,53(±0,39)	0,65(±0,36)	0,195
FMD (DID) (% change)	10,1(±6,2)	13,6(±10,8)	0,04
NMD (DID) (% change)	23,6(±11,8)	23,6(±10,7)	0,93

Other

PP-183

Implementation of segmentation algorithms in cardiology

Nihad Mesanovic, Zumreta Kusljugic

University Clinical Center Tuzla

Introduction: Heart disease is the leading cause of death in the modern world. Cardiac image processing is now routinely applied for detecting, classification and diagnosis of cardiac diseases. One of the most common uses of processing methods that are now widely applied are cardiac segmentation and registration methods, that are used in order to extract the detailed anatomy and function of the heart. Automatic segmentation plays a central role when inspecting reconstructed 3D cardiac images from CT or MR scanners. An accurate classification of the different cardiac regions is usually the first step of tasks like: cardiac visualization, coronary artery inspection, measurement of the ejection fraction for the left and right ventricles and wall motion analysis.

Materials and Method: In a clinical context, physicians often mentally integrate image information from different modalities. Automatic registration, based on computer programs, might, however, offer better accuracy and repeatability and save time. Cardiac image registration remains a challenge because of the numerous specific problems mainly related to the different motion sources (patient, respiration, heart) and to the specificity of each imaging modality. Up to now, no general method is able to automatically register any modality with any other modality. This paper presents a survey of shape modeling applications to cardiac image analysis from MRI, CT, echocardiography, PET, and SPECT and aims to introduce new methodologies in this field, classify major contributions in image-based cardiac modeling, provide a tutorial to beginners to initiate their own studies, and introduce the major challenges of registration and segmentation and provide practical examples.

Results: Image-driven processing methods, such as thresholding, region-based or edge-based techniques, or else pixel classification, offer a limited framework for further medical image analysis. They can include geometrical information, as well as high level information, in the so-called shape prior based segmentation framework, or through active shape models and active appearance models. At last, atlas guided segmentation also make use of a set of manually segmented images.

Discussion and Conclusion: By using different analysis software of cardiac images, CAD prototypes can be used in clinical routines in order to provide a computer output as a second reader to assist physicians in the detection of abnormalities, quantification of disease progression and differential diagnosis of lesions. Computerized analysis of cardiac images in combination with artificial intelligence can be used in clinical practice and may contribute to more efficient diagnosis.

Other

PP-184

The value of frontal QRS-T angle in STEMI patients

Emre Yalçınkaya[1], Murat Çelik[2], Erkan Yıldırım[2], Turgay Çelik[2], Cem Barçın[2], Atila İyisoy[2]

[1]Aksaz Military Hospital, Muğla
[2]Gülhane Military Medical Academy (GMMA) Ankara, Ankara

Introduction: The frontal QRS-T angle correlates with prognosis in patients with coronary artery disease, reflected by an increase in mortality proportional to an increase in the difference between the axes of the QRS complex and T wave in the frontal plane. In our study, we aimed to investigate the relationship between frontal QRS-T angle and culprit vessel in patients presenting with STEMI.

Materials and Method: Frontal planar QRS-T angle was calculated as the difference between the frontal QRS wave axes and T-wave axes. Patients were divided into three groups according to their culprit vessel. Frontal planar QRS-T angle values were compared between three groups.

Results: We analyzed 32 patients presenting with STEMI retrospectively. 27 (84.3%) of them were male and mean age was 62.6±15.4. Culprit vessel was left anterior descending artery (LAD) in 17 (53.1%), circumflex artery (CFX) in 6 (18.7%) and right coronary artery in 9 (28.1%) patients. Mean QRS-T angle was 64.7±47.5° in all patients, 56.8±14.2° in LAD-STEMI patients (group 1), 38.1±29.4° CFX-STEMI patients (group 2) and in 97.3±50.8° in RCA-STEMI patients (group 3). There were no significant differences between groups according to age and gender. We compared frontal planar QRS-T angles between the groups with one-way ANOVA test; and a statistically significant difference was observed between groups (p=0.031) and this statistically significant difference was prominent between group 2 and group 3 (p=0.040).

Discussion and Conclusion: RCA-STEMI patients have higher frontal QRS-T angle values compared to other STEMI patients. Higher frontal QRS-T angle could be used to explain ventricular repolarization heterogeneity and arrhythmic vulnerability in RCA-STEMI patients.

Other

PP-185

Impaired aortic elastic properties in primary osteoarthritis

Erdal Belen[1], Özgür Karaman[2], Gürkan Çalışkan[2], Oya Atamaner[2], Ömer Aslan[2]

[1]Okmeydanı Training and Researc Hospital, İstanbul
[2]Kanuni Sultan Suleyman Training and Research Hospital, İstanbul

Introduction: Osteoarthritis(OA) is one of the most common chronic diseases and associated with increased cardiovascular comorbidity and deaths. Elastic properties of aorta are closely associated with cardiovascular mortality and morbidity. In our study, we aimed to evaluate aortic stiffness in primary OA patients.

Materials and Method: A total of 160 patients including 80 patients with primary knee OA and 80 controls without OA were included in the study. Additionally, OA patients were divided into 4 subgroups according to the severity of the disease. Aortic parameters were evaluated by using transthoracic echocardiography method.

Results: While measurements of aortic stiffness of OA group were higher compared to the control group (p<0,01), aortic strain and aortic distensibility measurements of OA group are lower than the control group (p<0,01). Additionally, it was determined that as the severity of OA increased also aortic stiffness increased highly significantly (p=0,001).

Discussion and Conclusion: Presence and severity of OA are closely associated with elastic properties of aorta which are correlated with cardiovascular mortality and morbidity.

Table 1. Multivariate logistic regression analysis

	Odds ratio (95% CI)	p value
Age	1.001(0.93-1.06)	0.987
Sex	1.48 (0.6-3.68)	0.391
HDL	0.95(0.89-1.02)	0.2
LDL	1.01(0.99-1.04)	0.178
CRP	1.12(0.94-1.33)	0.172
eGFR	1.01(0.97-1.06)	0.5
Aortic strain	0.77 (0.64-0.93)	**0.009**
Aortic distensibility	0.86 (0.71-1.03)	0.112
Aortic stiffness	1.53 (1.01-2.32)	**0.044**
Systolic diameter of the ascending aorta	1.14 (0.93-1.39)	0.186
Diastolic diameter of the ascending aorta	1.19 (0.98-1.43)	0.067

Coronary artery disease / Acute coronary syndrome

PP-186

The importance of the number of leads with fQRS for predicting in-hospital mortality in acute STEMI patients treated with primary PCI

Hüseyin Dursun[1], Zülkif Tanrıverdi[2], Dayimi Kaya[1]

[1]Dokuz Eylül University, Faculty Of Medicine, İzmir
[2]İdil State Hospital, Şırnak

Introduction: Fragmented QRS has been shown to be related to increased cardiovascular mortality, and morbidity. However, limited data is available evaluating the relationship between the number of leads with fQRS and in-hospital all cause mortality in patients with acute ST segment elevation myocardial infarction (STEMI). The aim of our study is to investigate the prognostic importance of the number of leads with fQRS in acute STEMI patients treated by primary percutaneous coronary intervention (PCI).
Materials and Method: Two hundred ten eligible patients with acute STEMI that underwent primary PCI were enrolled in this study. Twelve-lead electrocardiography (ECG) taken in the first 48 hours were analyzed and the number of leads with fQRS were recorded.
Results: The number of leads with fQRS was significantly higher in patients that in-hospital mortality occurred when compared to other patients (2.6±2.6 vs 0.9±1.3; p=0.002). Also, patients with ≥3 leads with fQRS had higher rate of in-hospital all cause mortality than those patients with <3 lead with fQRS (23.5% vs 7.4%, p=0.009). By a multivariate regression analysis; number of leads with fQRS was found to be an independent predictor of in-hospital all cause mortality (Odds ratio [OR]: 1.415, 95% confidence interval [CI]: 1.049-1.909, p=0.023).
Discussion and Conclusion: The number of leads with fQRS on 12-lead ECG is an independent predictor of in-hospital all cause mortality in patients with acute STEMI treated by primary PCI.

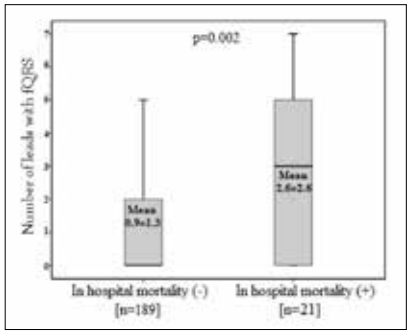


Figure 1. The mean number of leads with fQRS derivation

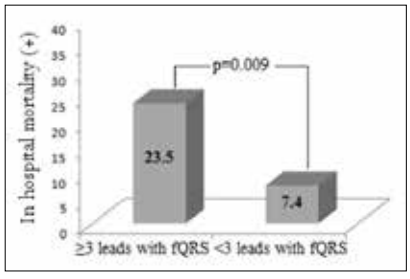


Figure 2. Mortality rate in ≥3 leads and

Coronary artery disease / Acute coronary syndrome

PP-187

Utility of gamma-glutamyl transferase in predicting troponin elevation in emergency departments

Selami Demirelli[1], Serdar Fırtına[2], Lütfü Aşkın[1], Sultan Tuna Akgöl Gür[1], Ceren Şen Tanrıkulu[1], Emrah Ermiş[1], Emrah İpek[1], Kamuran Kalkan[1], Ahmet Kızıltunç[3]

[1]Erzurum Regional Training and Research Hospital, Erzurum
[2]Maraşal Çakmak Military Hospital, Erzurum
[3]Erzurum Atatürk University, Erzurum

Introduction: Serum gamma-glutamyl transferase (GGT) is an independent risk factor for the development of coronary artery disease (CAD) and is strongly related with cardiovascular morbidity and mortality. Early diagnosis of acute myocardial infarction is very important for chest pain patients admitted to emergency departments. In this study, we evaluated the clinical utility of GGT in predicting high troponin levels in acute coronary syndrome (ACS) patients admitted to the emergency department with chest pain.
Materials and Method: The study population consisted of 403 consecutive patients admitted to the emergency department with angina or angina-equivalent complaints within the first 12 h of symptom onset. Troponin-positive patients were classified into group 1, and consisted of 200 patients (mean age, 61.31±9.36 years; 64.5% male). Troponin-negative patients were classified into group 2, which consisted of 203 patients (mean age, 59.76±10.28 years; 58.6% male).
Results: GGT levels were significantly higher in group 1 patients (43.78±34.10 mg/dL) compared to group 2 patients (30.70±25.74 mg/dL, p=0.001). A GGT cut-off level >25.5 mg/dL showed 62% sensitivity and 61% specificity in predicting troponin positivity. Logistic regression analysis demonstrated the significant predictive value of GGT for troponin positivity. Spearman rank correlation analysis showed a moderately strong relationship between GGT and troponin positivity.
Discussion and Conclusion: Considering the good predictive value of high GGT level for troponin positivity, GGT may complement other diagnostic biomarkers for predicting troponin-positivity in ACS patients admitted to emergency departments with chest pain.

Coronary artery disease / Acute coronary syndrome

PP-188

Assessment of the association between the personality traits of young patients with acute coronary syndrome and the severity of coronary artery diseas

Nermin Bayar, Ramazan Güven, Mustafa İlker Edebali, Zehra Erkal, Kamil Can Akyol, Selçuk Küçükseymen, İsa Öner Yüksel, Göksel Cağırcı, Erkan Köklü, Şakir Arslan

Antalya Education and Research Hospital, Antalya

Introduction: The role of psychosocial risk factors is becoming increasingly more important in the etiology of acute coronary syndrome(ACS). The purpose of this study was to assess the association between the personality types of young patients with ACS and the prevalence and severity of coronary artery disease.
Materials and Method: Patients younger than 45 years of age who presented with ACS and underwent coronary angiography in the period from 2012 to 2015 were included in the study. The coronary angiography records of the patients were examined and their Gensini scores (GS) were calculated, while GS ≥20 was considered to be severe coronary artery disease. Eysenck Personality Questionnaire-Revised Short Form was used to calculate the psychoticism, extraversion, lying and neuroticism scores.
Results: 139 patients were included in the study; 22 of the patients were female. The mean age of the patients with GS <20 was 39.0±6.4 while it was 40.6±4.1 in the group of patients with GS ≥20 (p=0.27). The psychoticism scores of the patients with GS <20 were found to be significantly higher than those of the patients with GS ≥20 (1.11±0.9 vs 0.76±0.8, p=0.015). The psychoticism score was 1.24±1.05 in unstable angina pectoris group; 0.61±0.6 in ST segment elevation myocardial infarction group, and 1.0±0.9 in non-ST segment elevation myocardial infarction group (p=0.004). Furthermore, a significant negative relationship was found between psychoticism and GS (r=-0.246, p=0.017).
Discussion and Conclusion: The presence of psychoticism characteristics in patients who present with ACS is associated with less severe of coronary artery disease.

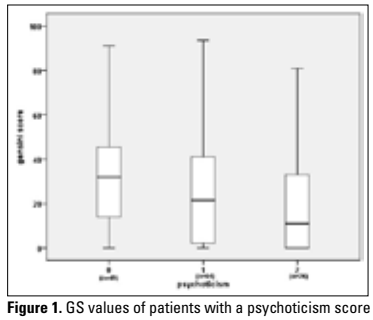


Figure 1. GS values of patients with a psychoticism score

Table 1. Mean Eysenck personality scores and Gensini

	GS<20 (n = 63)	GS>20 (n = 76)	P value
Psychoticism score	1.11± 0.9	0.76± 0.8	0.015
Extraversion score	3.19± 2.1	3.54± 1.9	0.350
Lie score	4.92± 1.4	4.49± 1.4	0.039
Neuroticism score	3.68± 1.7	3.08± 1.7	0.039

Coronary artery disease / Acute coronary syndrome

PP-189

Platelet to lymphocyte ratio is associated with proximal/ middle segment of the LAD lesions in patients with acute coronary syndrome

Fatma Özlem Arıcan Özlük[1], Mustafa Yılmaz[1], Dursun Topal[2], Tezcan Peker[1], Erhan Tenekecioglu[1], Selçuk Kanat[1], Kemal Karaağaç[1], Fahriye Vatansever[1], Pınar Yağcıoğlu

[1]Bursa Yüksek İhtisas Training and Research Hospital, Bursa
[2]Bursa Şevket Yılmaz Training and Research Hospital, Bursa

Introduction: Coronary artery disease (CAD) and its serious clinical form, ST segment elevated myocardial infarction (STEMI) has been the leader within the death causes around the world and in our country. Platelet to lymphocyte ratio (PLR) was revaled to have a close relation with major adverse cardiovascular outcomes. The purpose of the current study was to determine whether PLR is associated with proximal and mid segment of left anterior descending (LAD) artery lesion in patients with STEMI.
Materials and Method: In our study, 58 patients admitted to our hospital with acute anterior STEMI were included. All the patients had underwent primary percutaneous intervention for the single-vessel disease at left anterior descending coronary artery. 41 patients with proximal segment of LAD lesions were groupped

as Group I and 17 patients with mid segment of the LAD lesion groupped as Group II. The groups were compared according to their platelet to lymphocyte ratios (PLR) and other parameters.
Results: Between group I (n=41, mean age 52.5±12.7) and group II (n=17, mean ages 52.0±10.8); PLR, were significantly higher in group I compared to the group II (159±99 vs 99.5±37.5 p<0.05). In group I, left ventricular ejection fraction (LVEF) was significantly lower (p=0.02), CKMB levels were significantly higher (p<0.05). In correlation analyzes, PLR was positively correlated with troponin I (r=0.29; p<0.02) and CK MB (r=0.27, p=0.03). PLR was negatively correlated with LVEF (r=-0.27, p=0.04)
Discussion and Conclusion: The present study demonstrated that anterior myocardial infarction patients with high PLR had a greater possibility having proximal culprit lesion on the LAD. Therefore PLR can be used as a useful tool to detect not only significant atherosclerosis but also culprit plaque localization in patients with acute STEMI patients CK-MB, PDW levels.

Coronary artery disease / Acute coronary syndrome

PP-190

Thoracic periaortic adipose tissue is increased in patients with subclinical hypothyroidism

Ömer Akyürek, Duran Efe, Zeynettin Kaya

Mevlana University Faculty of Medicine, Konya

Introduction: To evaluate thoracic periaortic adipose tissue (TAT) volume in patients with subclinical hypothyroidism (SH) in comparison to controls and in relation to cardiovascular risk factors.
Materials and Method: The study population consisted of 28 newly diagnosed SH patients (mean (SD) age: 37.3 (±11.4) years, 85.7% were females) and 37 healthy volunteers (mean (SD) age: 35.3 (±10.7) years, 81.5% were females). Comparisons between patient and control groups used demographic characteristics, anthropometrics and laboratory findings. All participants underwent thoracic radiographic assessment in the supine position, using an 8-slice multidetector computed tomography scanner and TAT volume was measured.
Results: TAT volume was determined to be 27.2 (±12.7) cm^3 in the SH group and 16.3 (±8.1) cm^3 in the control group, and the difference was statistically significant (p<0.001). In addition, thyroid-stimulating hormone (TSH) levels were significantly higher in the patient group compared with the control group (p<0.001). A significant correlation was also found between TSH levels and TAT volume (r=0.572; p<0.001). In SH patients, no significant difference was noted in TAT levels with respect to gender (p=0.383) or concomitant smoking status (p=0.426).
Discussion and Conclusion: Our findings indicate that SH patients have significantly higher TAT values than controls and that increased TAT levels correlate with increased TSH levels. Short title: Thoracic periaortic adipose tissue and subclinical hypothyroidism.

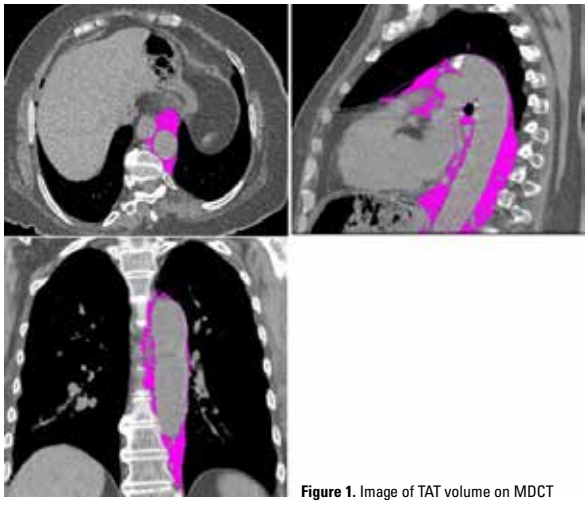


Figure 1. Image of TAT volume on MDCT

Coronary artery disease / Acute coronary syndrome

PP-191

The assessment of the relationship between the arterial stiffness and the spinal deformity in patients with ankylosing spondylitis

Serkan Bektur, Gülay Özkeçeci, Selma Eroğlu, Önder Akci, Ersel Onrat, Alaettin Avşar, Ümit Dündar

Afyon Kocatepe University Faculty of Medicine, Afyon

Introduction: Ankylosing spondylitis (AS) is a chronic inflammatory disease with an unknown etiology, that takes part in the group of spondyloarthropathies (SpA). Sacroileitis is usually the first sign and axial skeleton involment is observed in the course of the disease progression. The spinal deformity can be easily observed with hand-ground distance in out-patient clinics. Previous studies showed an increased cardiovascular risk in AS. But the mechanism is still controversial. It's proved that the aorta changes its postion in AS due to spinal deformity. The hydrodynamics change due to the changing postion of the aorta and it may be the cause of early atherosclerosis. We investigated the parameters of arterial stiffness and also investigated the correlation between the hand-ground distance (as the marker of spinal deformity process) and the arterial stiffness parameters in patients with AS.
Materials and Method: 30 patients with ankylosing spondylitis (mean age: 35.5±12.1) without conventional cardiovascular risk factors that applied to Afyon Kocatepe University Hospital, Department of Physical Therapy and Rehabilitation and Department of Cardiology clinics compared with 30 healthy subjects (mean age: 34.9±12.9) with similar age and sex recruited for the study. The arterial stiffness parameters like PWV (pulse wave velocity), AIx (augmentation index), pulse pressure and central aortic pressure measurements are obtained via 'artheriograph' (TensioMed, Budapest, Hungary). Hand-ground distance is calculated in patient group while standing. The correlation between the arterial stiffness parameters and hand-ground distance is evaluated.
Results: There isn't any statistically difference between the patients and controls for PWV, AIx, pulse pressure and central aortic pressure. There is no statistically significant correlation between the hand-ground distance and arterial stiffness parameters or the duration of the disease and the arterial stiffness parameters.
Discussion and Conclusion: These results of this study showed, the arterial stifness which is predictive of early atherosclerosis, is not adversly affected in patients with ancylosing spondylitis without conventional risk factors, compared with healthy population. There is no correlation between the duration or the severity of the disease with arterial stiffness parameters.

Coronary artery disease / Acute coronary syndrome

PP-192

Relation of platelet indices to severity of coronary artery disease in patients undergoing primary percutaneous coronary intervention

Fatih Akın[1], Burak Ayça[2], İbrahim Altun[1], Nuri Köse[3], Murat Avşar[2]

[1]Muğla Sıtkı Koçman University Faculty of Medicine, Muğla
[2]Bağcılar Training and Research Hospital, İstanbul
[3]Muğla Yücelen Hospital, Muğla

Introduction: We investigated the association between platelet indices and severity of coronary artery disease (CAD) in patients with ST-segment–elevation myocardial infarction (STEMI) who underwent primary percutaneous coronary intervention (PPCI).
Materials and Method: A total of 484 consecutive patients who were routinely referred to coronary angiography for STEMI and 81 age and gender matched patients with normal coronary artery were included in the present study. We analyzed the relation between PDW and angiographic severity of CAD. The SYNTAX score was used for assessing the severity of coronary atherosclerosis.
Results: The MPV, Plateletcrit (PCT), and neutrophil levels were significantly higher in the STEMI group than in the control group. Patients with elevated SYNTAX score (>32) had higher PDW values. The levels of plateletcrit and eGFR were lower in high SYNTAX score group compared to moderate-to-low SYNTAX score group. PDW was positively correlated with age (r=0.128, p=0.004) and SYNTAX score (r=0.209, p<0.001). There was a mild significant inverse association between PDW level and eGFR (r=-0.101, p=0.049), mean platelet volume (MPV) (r=-290, p<0.001) and PCT (r=-345, p<001). Using multivariate logistic regression analysis, we found that age (OR = 1.046, 95% CI 1.013-1.079, p=0.005), diabetes (OR = 4.779, 95% CI 2.339-9.767, p<0.001), and PDW (OR = 1.229, 95% CI 1.072-1409, p=0.003) were independent correlates of high SYNTAX score.
Discussion and Conclusion: Platelet distribution width, an inexpensive and easily measurable laboratory variable, is independently associated with high SYNTAX score.

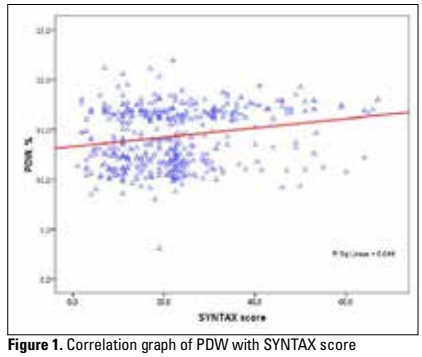


Figure 1. Correlation graph of PDW with SYNTAX score

Coronary artery disease / Acute coronary syndrome

PP-193

Red cell distribution width can predict totally occluded infarct related artery in non-ST segment elevation myocardial infarction

Sadık Kadri Açıkgöz, Mehmet Kadri Akboğa, Çağrı Yayla, Mustafa Mücahit Balcı, Barış Şensoy, Kevser Gülcihan Balcı, Sinan Aydoğdu

Türkiye Yüksek İhtisas Hospital, Ankara

Introduction: Since non-ST segment elevation myocardial infarction (NSTEMI) patients with totally occluded infarct related artery (TO-IRA) showed worse short and long-term prognosis, it is important to recognize TO-IRA in NSTEMI. Red cell distribution width (RDW) is a novel marker of inflammation and oxidative stress and increased RDW was associated with poor clinical outcomes in acute coronary syndrome. In the present study, association with RDW and TO-IRA in NSTEMI was investigated.
Materials and Method: Clinical, angiographic and laboratory data of 201 consecutive patients with NSTEMI were analysed retrospectively in this single-centered observational study.
Results: Mean age of the participants was 62.7±10.4 and 86 (63.7%) of them were males. Sixty six (32.8%)

of the patients had TO-IRA. In patients with TO-IRA, RDW and troponin T were significantly higher and left ventricular ejection fraction (LVEF) was lower. CX IRA was more common in TO-IRA group (60.6% vs. 36.3%). The receiver–operating characteristic curve analysis showed that the RDW at a cut-point of 13.95% has 76% sensitivity and 66% specificity in detecting TO-IRA. Higher RDW (OR = 2.434, 95%CI,1.528-6.058, p<0.001), higher troponin T (OR=2.014, 95% CI 1.313-3.087, p=0.001), lower LVEF (OR = 0.949, 95% CI 0.918-0.982, p=0.002) and CX IRA (OR = 2.541, 95% CI 1.235-5.228, p=0.011) were independent predictors of TO-IRA in NSTEMI.

Discussion and Conclusion: RDW is a cheap and readily available marker that may have a role to predict TO-IRA in NSTEMI.

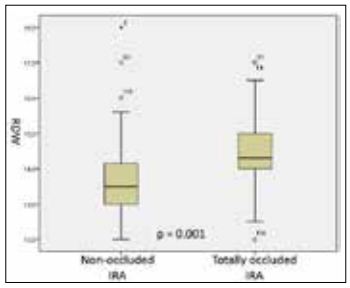


Figure 1. Comparision of RDW levels of groups

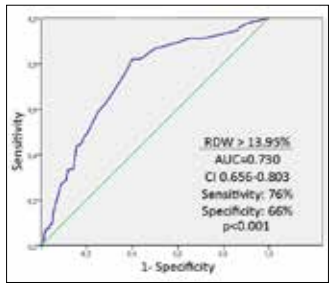


Figure 2. Predictors of TO-IRA in NSTEMI

Coronary artery disease / Acute coronary syndrome

PP-194

Vitamin D levels in patients with acute coronary syndrome

Hakkı Şimşek[1], Naci Babat[1], Serkan Akdağ[1], Nesim Aladağ[2], Mahmut Özdemir[2], Ramazan Düz[1]

[1]Yüzüncü Yıl University Faculty of Medicine, Van
[2]Van Training and Research Hospital, Van

Introduction: In recent studies, vitamin D is claimed to have positive effects for acute coronary syndrome (ACS) by decreasing states that are accepted as important risk factors for ACS development such as endothelial damage, high blood pressure, insulin resistance, diabetes development and vascular inflammation. We have investigated the relation between ACS and plasma vitamin D levels in this study.

Materials and Method: The study was conducted with a total number of 90 patients diagnosed with ACS and 50 individuals with normal coronary artery angiography.

Results: No significantly different plasma vitamin D levels of control group was detected compared to the patients with ACS (Mean=15,2±4,8 versus 15,3±6,3 ng/ml, p>0.05). Significant difference related to smoking prevalance was detected between the two groups (52.8% versus 20%, p<0.01).

Discussion and Conclusion: We have concluded that Vitamin D insufficiency does not increase the risk for development of ACS significantly, after the corrections related to blood cholesterol elevation, smoking, diabetes, high blood pressure, family history. According to these results, there was no association between plasma level of vitamin D and the risk of development of ACS.

Table 1. Comparison of clinical variables

hypertension	29(32,2)%	15(30%)	>0,05
cigarette	45(50%)	10(20%)	<0,01
diabetes mellitus	18(20%)	13(22%)	>0,05
hyperlipidemia	39(43,3%)	20(40%)	>0,05
Systolic blood pressure (mmHg)	128±23	125±13	>0,05
Diastolic BP (mmHg)	75±14	72±13	>0,05
age	55±25	45±30	>0,05

Table 2. Comparison of laboratory variables

	Grup A (acute coronary syndrome) (n=90)	Grup B (control)(n=50)	P level
Vitamin D (ng/ml)	15,2±4,8 (9-19)	15,3±6,3 (9-19)	>0,05
Glucose (mg/dl)	139±82 (60-432)	111±86 (43-559)	>0,05
LDL (mg/dl)	108±30 (47-280)	111±26 (23-317)	>0,05
CK MB (u/L)	70±70 (9-625)	24±9 (9-814)	>0,05
Troponin	4,3±6,4 (11-821)	0,03±0,09 (9-1031)	>0,05

Coronary artery disease / Acute coronary syndrome

PP-195

Cardiovascular risk factors and one-year outcome in young patients with acute ST-elevation myocardial infarction

Fatih Kahraman[1], Abdullah Doğan[2], Fatih Aksoy[1], Mehmet Özaydın[1], Yasin Türker[1], Doğan Erdoğan[1], Ercan Varol[1]

[1]Süleyman Demirel University Faculty of Medicine, Isparta
[2]İzmir Katip Çelebi University Medical School, İzmir

Introduction: Acute ST-elevation myocardial infarction (STEMI) rarely occurs in patients aged

Materials and Method: This was an observational cohort study of 519 patients with STEMI at a regional heart center between January 2010 and August 2014. Clinical characteristics and outcomes or MACE-free survival in young patients who were aged ≤45 years were compared with older patients aged >45 years. The MACE included any death, reinfarction, heart failure, recurrent angina and cardiac hospitalization.

Results: Of the 519 patients, 93 (18%) were aged ≤45 years (range: 23-45 years) and 426 (82%) were aged >45 years (range: 46-90 years). Compared with older patients, young patients were more likely to be male (92% vs 72%, p=0.01), smokers (85% vs 56%, p=0.001), and to have hyperlipidemia (33% vs 23%, p=0.04) and a family history of premature coronary artery disease (47% vs 20%, p=0.001). On the other hand, young patients were less likely to have a history of hypertension (6% vs 49%, p=0.001) and diabetes mellitus (4% vs 21%, p=0.001). The duration of chest pain was shorter in young patients than older patients (3.1±2.7 vs 5.2±3.7 hours, p=0.01). Anterior STEMI tended to be more frequent in the young patients (52% vs 46%, p=0.07). Left ventricular ejection fraction was higher in young patients than older patients (42±9% vs 38±9%, p=0.01). At one-year follow-up, MACE rates was slightly lower in young patients compared with older patients (9.6% vs. 16.6%, p=0.08). Therefore, MACE-free survival tended to be better in young patients with STEMI (Figure 1).

Discussion and Conclusion: In this cohort study, young STEMI patients were more often male, smokers and to have a history of premature coronary artery disease and hyperlipidemia. MACE-free survival tended to be better in younger patients than older patients.

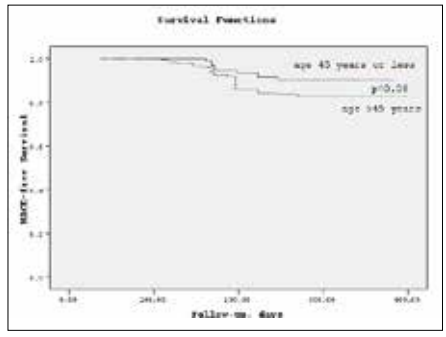


Figure 1. Kaplan-Meier plots showing event-free survival

Coronary artery disease / Acute coronary syndrome

PP-196

The impact of admission red cell distribution width on long-term cardiovascular events after primary PCI: a four year prospective study

Turgay Işık[1], Mustafa Kurt[2], İbrahim Halil Tanboğa[3], Erkan Ayhan[1], Zeki Yüksel Günaydın4, Hüseyin Uyarel[5]

[1]Balıkesir University, Faculty of Medicine, Balikesir
[2]Mustafa Kemal University Faculty of Medicine, Hatay
[3]Atatürk University, Faculty of Medicine, Erzurum
[4]Ordu University Faculty of Medicine, Ordu
[5]Bezmialem University Faculty of Medicine, İstanbul

Introduction: Red cell distribution width (RDW) a measure of the variability in the size of circulating erythrocytes, and it has been utilized in the differential diagnosis of anemia. Additionally, elevated RDW levels have a close relationship with inflammation and oxidative stress and are associated with poor prognoses in cardiac conditions. The purpose of this study was to evaluate the predictive value of RDW on the long term cardiovascular events in patients undergoing primary percutaneous coronary intervention (PCI).

Materials and Method: Nineteen six consecutive patients (mean age 60.6±12.5 years and male 77.1%) with ST-elevation myocardial infarction (STEMI), who were treated with primary PCI, were analyzed prospectively. Baseline RDW and high sensitive C reactive protein (hs-CRP) were measured. The main endpoints evaluated in this study were major adverse cardiac events (MACE) were defined as cardiovascular mortality, reinfarction, and repeat target-vessel revascularization. The patients were followed up for MACE for up to 48 months after discharge.

Results: There were 30 patients with long term MACE (Group 1) and 66 patients without long term MACE (Group 2). Admission RDW and hs-CRP levels, LAD lesion, multi-vessel disease, age and electrocardiographic no-reflow were higher in Group 1. Admission hemoglobine levels and angiographic success of the procedure (TIMI 3) were lower in Group 1. An RDW level ≥13.85% measured on admission had 80% sensitivity and 64% specificity in predicting long term MACE on ROC curve analysis (Figure 1). In multivariate analyses, admission RDW (HR 1.61, <0.001) were independent predictors of long-term MACE.

Discussion and Conclusion: A high baseline RDW value in patients with STEMI undergoing primary PCI was independently associated with increased risk for long term MACE.

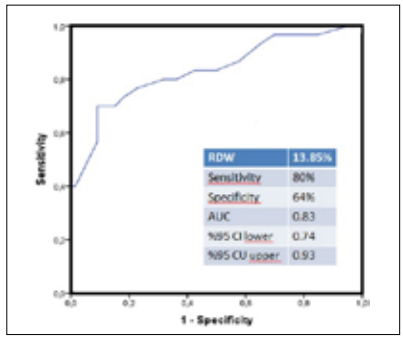


Figure 1. ROC curve analysis. RDW: Red cell distribution width

Anatol J Cardiol 2015; 15 (Suppl 1): 1-104

Coronary artery disease / Acute coronary syndrome

PP-197

An Increase in the risk of ST elevation myocardial infarction is associated with the homocysteine level

Ömer Akyürek[1], *Erdem Akbal*[2], *Fahri Güneş*[2]

[1]Mevlana University Faculty of Medicine, Konya
[2]Çanakkale Onsekiz Mart University Faculty of Medicine, Çanakkale

Introduction: The present study aimed to investigate the relationship between coagulation defects and ST elevation myocardial infarction (STEMI) in patients who didn't have any known coronary artery risk factors and were considered low risk according to Framingham risk classification.
Materials and Method: This study included 76 (73.6% male) STEMI patients without any known risk factors for coronary artery disease and 56 healthy controls (67.8% male) with similar properties.
Results: Factor V Leiden mutation was noted in 2 patient and 1 control. There weren't any significant differences in protein C, protein S, or antithrombin 3 values between the patient and control groups (p=0.405, p=0.476, and p=0.221, respectively). None of the participants had antiphospholipid syndrome, factor V deficiency, or factor VII deficiency. The plasma homocysteine level was significantly higher in the patient group (19.0±3.6) µmol/L than in the control group (15.8±4.2) µmol/L (p=0.008). Homocysteine levels in both groups were higher in the males, but the difference was not significant. The vitamin B12 and folate levels, which are directly related to homocysteine metabolism, did not differ significantly between the 2 groups. Correlation analysis showed that the homocysteine level was not correlated with lipid parameters, folate, or vitamin B12.
Discussion and Conclusion: In conclusion, the present findings show that the homocysteine level was significantly higher in acute MI in patients that did not have any risk factors and were considered low risk according to the Framingham risk score. The findings support the hypothesis that the homocysteine level could be an independent risk factor for coronary artery disease.

Cardiac imaging / Echocardiography

PP-198

Echocardiographic atrial electromechanical functions and electrocardiographic p-wave indices with respect to blood pressure sleep-trough morning surge

Aslı Tanındı, Ebru Akgül Ercan

Ufuk University Faculty of Medicine, Ankara

Introduction: Blood pressure morning surge is associated with cardiovascular events. We aimed to investigate atrial electromechanical functions assessed by echocardiography and electrocardiographic p-wave indices with respect to different levels of blood pressure morning surge in normotensive individuals.
Materials and Method: Seventy-eight normotensive patients were enrolled. Ambulatory blood pressure monitoring was performed for sleep-trough morning surge. Twelve-lead electrocardiography was obtained and maximum and minimum p-wave durations were measured. Transthoracic echocardiography using tissue doppler imaging (TDI) was performed to measure atrial electromechanical coupling intervals from the lateral mitral annulus (PA lateral), septal mitral annulus (PA septum) and right ventricular tricuspid annulus (PA tricuspid). Inter-atrial (PA lateral-PA tricuspid), left intra-atrial (PA lateral-PA septal) and right intra-atrial (PA septal-PA tricuspid) conduction delays were also calculated.
Results: When patients were divided with respect to tertiles of blood pressure sleep-trough morning surge, there were no significant differences in demographic and anthropometric characteristics. Systolic blood pressure and left atrial volume index were slightly higher in the third tertile (p<0.05). Maximum p-wave duration was significantly higher in the third tertile (p:0.041); however minimum p-wave durations were comparable. Inter-atrial conduction delays were 24.1±10.5, 26.3±11.7 and 29.3±14.2 (p:0.02) in the first, second and third tertiles of morning surge respectively; and left intra-atrial conduction delays were 17.5±8.5, 21.1±7.2 and 25.2±11.1 respectively (p:0.03). However, right intra-atrial conduction delays were not significantly different among tertiles of morning surge.
Discussion and Conclusion: Higher blood-pressure morning surge is associated with higher inter-atrial and left intra-atrial conduction delay, and an increase in maximum p- wave duration in normotensive individuals.

Table 1. Study findings with respect to morning surge

N(%)	Tertile 1 (N:26)	Tertile 2 (N:26)	Tertile 3 (N:26)	P
Age (years)	49.8±11.8	52.1±10.8	50.7±11.1	0.39
Sex (F %)	60	55	43	0.27
BMI	25.2±2.1	25.9±2.7	25.8±2.3	0.39
LVEF	64.7±7.8	64.2±8.0	63.7±8.3	0.28
E/A	1.2±0.4	1.1±0.4	1.1±0.3	0.5
E/E'	7.8±2.2	7.9±1.8	7.9±1.6	0.2
LVMI	85.8±17.8	88.7±17.8	95.2±22.1	0.21
LA dia (mm)	32.5±3.3	33.9±4.1	33.4±4.8	0.39
LAV index (mL/m2)	21.0±5.8	24.8±5.1	27.3±5.2	0.038*
PA lateral (ms)	60.8±10.6	65.7±8.7	74.4±12.2	0.01**
PA septal (ms)	40.5±5.8	44.6±8.3	51.5±7.1	0.01*
PA tricuspid (ms)	37.8±4.8	41.3±4.3	44.1±5.3	0.006**
Inter-atrial delay (LA-RA)(ms)	24.1±10.5	26.3±11.7	29.3±14.2	0.02*
Intra-atrial delay (LA)(ms)	17.5±8.5	21.1±7.2	25.2±11.1	0.03**
Intra-atrial delay (RA) (ms)	7.0±5.4	8.6±5.9	7.3±6.1	0.25
SBP (mmHg)	119.7±13.3	122.7±13.5	123.5±11.8	0.04*
DBP (mmHg)	75.8±7.7	77.4±8.3	78.5±8.1	0.18
HR (bpm)	80.5±11.5	81.7±10.8	84.6±12.7	0.21
Max P-wave duration (ms)	95.3±9.8	99.8±10.2	105.8±9.4	0.041*
Min P-wave duration	60.3±7.7	62.8±8.1	64.1±8.2	0.08

Cardiac imaging / Echocardiography

PP-199

Association of plasma homocysteine levels and end organ damage in newly diagnosed Type 2 diabetes mellitus patients

Harun Kundi, Emrullah Kızıltunç, İhsan Ateş, Ayşe Nurdan Barça, Mustafa Çetin, Nihal Özkayar, Fatih Dede, Ender Örnek

Ankara Numune Training and Research Hospital, Ankara

Introduction: The aim of the present study was to investigate the association of plasma homocysteine (Hcy) levels with carotid, cardiac, and renal end- organ damage in newly diagnosed type 2 diabetes mellitus (T2DM) patients.
Materials and Method: Newly diagnosed 390 normotensive T2DM patients were enrolled in the study. The patients were not taking any medications at the time of study. Left ventricular mass index (LVMI), carotid intima media thickness (CIMT), and creatinine levels and 24-h microalbuminuria were used in order to determine cardiac, carotid and kidney end-organ diseases, respectively.
Results: In univariate logistic regression analysis; age, 24-h microalbuminuria, fasting blood glucose, CIMT, creatinine level and LVMI were significantly found to be associated with Hcy levels. When those 6 variables were included in a multivariate regression model; CIMT, LVMI, and creatinine were found to be significantly associated with Hcy levels. A Hcy level >12.5 µmol/L was found to predict high LVMI with a sensitivity of 70.1% and a specificity of 68%. A Hcy level >13.5 µmol/L was found to predict high CIMT with a sensitivity of 67.5% and a specifity of 63.1%.
Discussion and Conclusion: In this study, we demonstrated positive correlations of LVMI, CIMT and creatinine level with Hcy levels. We believe that Hcy levels may be used as predictors of endorgan damage, including cardiac, carotid and renal disease in newly diagnosed T2DM patients in the future.

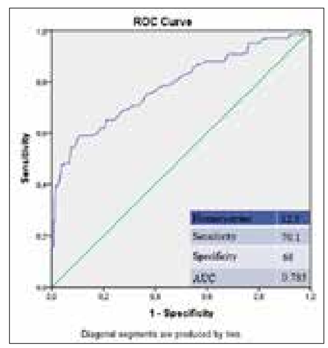


Figure 1. ROC curve of homocysteine levels for LVMI

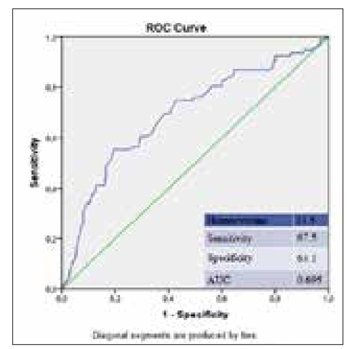


Figure 2. ROC curve of homocysteine levels for CIMT

Cardiac imaging / Echocardiography

PP-200

Epicardial adipose tissue thickness and diastolic functions in normal coronary arteries

Mustafa Topuz[1], *Ali Doğan*[2]

[1]Adana Numune Training and Research Hospital, Adana
[2]Erciyes University Faculty of Medicine, Kayseri

Introduction: The aim of this study is to investigate the association between Epicardial adipose tissue (EAT) thickness and cardiac diastolic functions in patients with normal coronary arteries (NCA).
Materials and Method: We select study patients who were hospitalized for coronary angiography because of typical chest pain in our clinic between 2008-2010 and randomized according to angiographic findings. Eightyfive patients with critical coronary lesions (>50%) served as CAD group, 82 patients with plaque or non-critical coronary lesion (<50%) served as Non-critical CAD group and 83 patients with normal coronary arteries served as control group. All patients were underwent Transthoracic echocardiographic (TTE) examination to measure EAT thickness.
Results: The mean age of all patients was 59.1±12.4. Gensini score (p=0.001), Total cholesterol (p=0.029) and CRP (p=0.002) were significantly higher in CAD group compared to Non-critical CAD and control group. The average thickness of EAT was 0.73±0.24 cm in all study patients. It was measured 0.58±0.23 cm in Control group, measured 0,64±0,24 cm in Non-critical CAD group and 0.78±0.22 cm in CAD group (p<0.001). We evaluated the correlation of EAT with echocardiographic findings and diastolic dysfunction parameters in control group only and we found that Patients age, BMI and CRP values as demographic parameters and E/A ratio, DT, LA diameter and IVRT as echocardiographic parameters were well correlated with EAT thickness. Also In linear regression analyses, EAT has been found as an independent predictor of presence of diastolic dysfunction in control group.
Discussion and Conclusion: Based on our study findings, EAT thickness is directly associated with diastolic dysfunction in NCA patients. This independent relationship showed us the implicating of clinical importance of measuring EAT thickness especially in asymptomatic patients with early stage of diastolic dysfunction.

Cardiac imaging / Echocardiography

PP-201

Presystolic a wave may predict increased arterial stiffness in asymptomatic subjects

Ali Rıza Akyüz[1], Levent Korkmaz[2], İsmail Gürbak[1], Hakan Erkan[2], İhsan Dursun[2], Şükrü Çelik[2]

[1]Akçaabat Haçkalı Baba State Hospital, Trabzon
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon

Introduction: Stiffness of large arteries has been related to cardiovascular mortality. Cardio-ankle vascular index (CAVI) is is a novel parameter of arterial stiffness. The main purpose of present study was to investigate the association between presystolic wave (PSW) on left ventricular outflow tract (Figure 1) and CAVI.
Materials and Method: 200 patients enrolled consecutievely. Patients with known of atherosclerotic vascular diseases were excluded. Arterial stiffness was assessed by cardioankle vascular index (CAVI). It was measured using a VaSera VS-1000 CAVI instrument. The CAVI was considered abnormal at CAVI ≥9.
Results: Patients with PSW had higher CAVI values compared with those without PSW (8.6±1.6 vs 7.3±1.5). There was a significant correlation between PSW and CAVI (r=0.34, p<0.001). Analysis using the receiver–operating characteristics curve demonstrated that PSW velocity of 61cm/sn constitutes the cutoff value for abnormal CAVI (CAVI ≥9) with 75% sensitivity and 74% specificity (area under the curve [AUC]: 0.883, 95% confidence interval [CI]: 0.694-0.972) (Figure 2).
Discussion and Conclusion: Assesment of presystolic A wave on echocordiography examination may provide important information regarding the vascular function that has a prognostic impact. Further studies are warranted to determine the clinical significance of this finding.

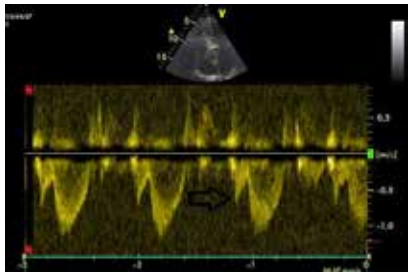


Figure 1. Arrow demonstates presystolic wave

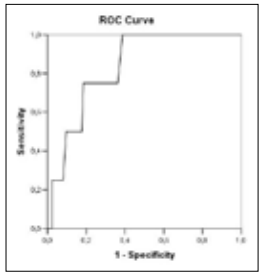


Figure 2. ROC analyse

Cardiac imaging / Echocardiography

PP-202

The relationship of postoperative AF with NT-proANP, LA volume andmechanical functions evaluatedwith 3D ECHO in patients under going coronary bypass surgery

Şıho Hidayet[1], Ferhat Eyyüpkoca[2], Adil Bayramoğlu[3], Yılmaz Ömür Otlu[4], Fatma Özyalın[5], Emine Hidayet[5], Hakan Taşolar[6], Ertuğrul Kurtoğlu[1], Özgür Kaplan[7], Julide Yağmur[6]

[1]Malatya State Hospital, Malatya
[2]Sincan Goverment Hospital, Ankara
[3]Ordu University Faculty of Medicine, Ordu
[4]Kars State Hospital, Kars
[5]İnönü University Faculty of Medicine, Malatya
[6]Adıyaman University, Faculty of Medicine, Adıyaman
[7]Florence Nightingale Hospital, İstanbul

Introduction: Postoperative AF (POAF) is the most common cause of morbidity after coronary artery bypass surgery.In this study,we aimed to show the relationship between POAF and NT-proANP levels and the relationship between mechanical functions and left atrial volume measured using preoperative 3D-ECHO among patients that will undergo isolated CABS in elective conditions.
Materials and Method: 66 consecutive patients who were decided to undergo CABS and had normal sinus rhythm were involved. LA volume and mechanical functions consisting of LA largest volume (Vmax), LA smallest volume (Vmin), LA volume prior to contraction (vpreA), LA active stroke volume (ASV), LA total stroke volume (TSV), LA active emptying fraction (AEF), LA total emptying fraction (TEF), LA passive emptying fraction (PEF), LA expansion index (EI) and LA volume index (LAVİ) were calculated with 3D ECHO. In addition, for the analysis of plasma levels of NT-proANP, blood samples were collected before the surgery.
Results: During follow-up after the operation, 15 patients (22.7%) had postoperative atrial fibrillation. Although the mean age of patients in sinus rhythm was 58.2±8.3 years, the mean age of the group that developed AF was 71.6±6.23 years (p<0.001). When LA volume and mechanical function were examined through 3D ECHO, LA Vmax, Vmin, VpreA values were higher in POAF group and the difference between two groups was statistically significant. EI, TEF and PEF percent compared with SR group, the group that developed POAF were lower as statistically significant (p<0.001).In terms of TSV value and AEF percentage no statistically significant difference (p>0.05) was found between the two groups. Also in POAF developed group and SR group, LAVI values were 27.56±4.2 and 20.7±4.64 ml/m^2 respectively. POAF group LAVI values were significantly higher compared to the SR group and this difference between groups was statistically significant (p<0.001).In POAF group and SR group, NT-proANP values were 592.24±167.03 (pg/ml) and 365.17±149.83 (pg/mL), respectively. In POAF developing group, NT-proANP levels were significantly higher compared to the SR group and this difference between groups was statistically significant (p<0.001).
Discussion and Conclusion: When POAF developing group was compared to SR group,it was also found that left atrial volume level was increased and mechanical functions were corrupted. Also blood levels of NT-proANP in POAF group were increased and NT-proANP levels, LA volume and mechanical functions were related to each other.

Cardiac imaging / Echocardiography

PP-203

Association of left atrial spontaneous echo contrast to uric acid in patients with mitral stenosis

Mahmut Akpek[1], Ömer Şahin[2], Bahadır Şarlı[2], Hüseyin Arınç[2], Ahmet Oğuz Baktır[2], Zeynep Selcen Akpek[3], Hayrettin Sağlam[2], Ali Ergin[3], Mehmet G Kaya[3]

[1]Adnan Menderes University, Faculty of Medicine, Aydın
[2]Kayseri Training and Research Hospital, Kayseri
[3]Erciyes University Faculty of Medicine, Kayseri

Introduction: Spontaneous echo contrast (SEC) is the presence of smoke-like echoes with a characteristic swirling motion of the blood in echocardiography. Previous clinical studies have shown that SEC is a risk factor for left atrial thrombus formation and a predictor of potential systemic embolism originating from the heart. There is an association between uric acid and prothrombotic state. Therefore, we aimed to investigate the role of uric acid in SEC in patients with mitral stenosis (MS).
Materials and Method: A total of 85 consecutive patients with MS were enrolled in the study. Patients were divided into two groups according to whether SEC was present in the left atrium.
Results: There were 41 patients (mean age 46.4±11.4 and 68% female) in the SEC (-) group and 44 patients (mean age 45.7±7.2 and 64% female) in the SEC (+) group. High sensitive C-reactive protein (hs-CRP) levels were significantly higher in the SEC (+) group than in the SEC (-) group (9.5±4.2 vs. 4.7±2.2 mg/L, p<0.001). Uric acid was also significantly higher in the SEC (+) group (6.3±1.4 vs. 4.5±1.3 mg/dL, p<0.001). In receiver operating characteristics curve analysis, uric acid >5.2 mg/dL had a 73% sensitivity and 76% specificity in predicting SEC in patients with MS. At multivariate analysis, uric acid (OR 3.919, 95% CI 1.911-8.035; p<0.002) was an independent risk factor for SEC in patients with MS.
Discussion and Conclusion: Uric acid is independently associated with SEC in patients with MS. Our findings suggest that this inexpensive, universally available marker may be a useful biomarker for the stratification of risk in patients with MS.

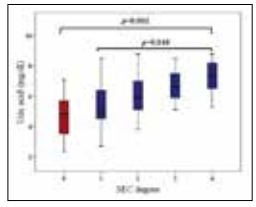


Figure 1. Uric acid levels between groups

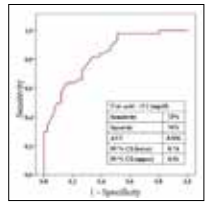


Figure 2. ROC curve of uric acid for predicting SEC in MS

Cardiac imaging / Echocardiography

PP-204

Association of epicardial adipose tissue thickness with extent and complexity of coronary artery disease in acute coronary syndrome patients

Murat Akçay[1], Mahmut Şahin[2], Serkan Şahin[2], Korhan Soylu[2], Okan Güle[2], Ertan Aydın[3], Halit Zengin[2], Murat Meriç[2], Özcan Yılmaz[2]

[1]Doç. Dr. Yaşar Eryılmaz, Doğubeyazıt State Hospital, Ağrı,
[2]Ondokuz Mayıs University, Samsun
[3]Giresun Prof. Dr. A. İlhan Özdemir State Hospital, Giresun

Introduction: Acute coronary syndrome (ACS) represents one of the most significant clinical endpoints of coronary atherosclerosis. Epicardial adipose tissue (EAT), secrets proatherogenic and proinflammatory cytokins and effects cardiac morphology and functions lokally. The purpose of this study, without previous known coronary artery disease (CAD) and admitted to our hospital with ACS, coronary imaging in patients undergoing hospitalization the EAT thickness with determined of the relationship between to ACS clinical risk scores and CAD severity and complexity.
Materials and Method: Study includes 150 patients (mean age 59,7±11,1 years and %83 men) and patients were divided into two group, 75 NSTE-ACS and 75 STE-ACS according to clinic proporties, electrocardiograpy and laboratuary analyzes. Cardiovascular risk factors and laboratuary analyzes were recorded. GRACE, TIMI clinical risk scores and SYNTAX and Gensini angiographic risk scores were calculated according to guidlines, respectively, for the purpose of clinical risk assessment and determination of the severity and complexity of CAD. EAT thickness was measured by echocardiography above the free wall of the right ventricle, perpendicular to the aortic annulus as the anatomic reference point.
Results: When comparing the two groups, there isn't differences CAD risk factors, clinical, demographic features and anthropometric measurements and EAT thickness (mean 5,94±1,17 mm). In patients with ACS, there was no directly correlation between EAT thickness and TIMI, GRACE, SYNTAX, Gensini risk scores. There was positive and significant correlation between thickness of EAT and SYNTAX (r=0.243, p=0.035) and GENSINI (r=0.394, p<0.001) risk scores in only NSTE-ACS subgroup.
Discussion and Conclusion: EAT measurement, although it is a simple method can not provide information in the assessment of CAD extensity and complexity in ACS patients.

Cardiac imaging / Echocardiography

PP-205

Subclinical left ventricular systolic dysfunction in patients with premature ventricular contractions

Selen Yurdakul[1], Gültekin Ercan[1], İlker Tekkeşin[2], Şükrü Taylan Şahin[1], Betül Cengiz[1], Gamze Çelik[3], Sabri Demircan[1], Saide Aytekin[3]

[1]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul
[2]Siyami Ersek Thorax Heart and Vascular Surgery Education and Research Hospital, İstanbul
[3]Florence Nightingale Hospital, İstanbul

Introduction: Premature ventricular contractions (PVC) may cause subtle changes in left ventricular (LV) structure and function. We aimed to explore LV subclinical systolic dysfunction, using speckle tracking echocardiography (STE) in patients with PVC and preserved left ventricular (LV) ejection fraction (EF).
Materials and Method: We included 25 patients with PVC (44.70±5.35 years and 56% male) and 20, age and sex matched healthy controls. Conventional echocardiography and STE- based strain imaging were performed to analyze subclinical LV systolic function.
Results: Conventional echocardiographic measurements (LV end diastolic diameter, LV end systolic diameter and LV EF) were similar between the groups. Longitudinal peak systolic strain (17.66±5.45% to 28.97±2.53%, p=0.0001) and strain rate (0.54±0.06 1/s to 4.92±0.52 1/s, p=0.0001) of the LV were significantly impaired in patients, compared to controls, demonstrating subclinical ventricular systolic dysfunction. In the correlation analysis, VPC frequency was negatively correlated with LV strain (r=-0,31, p=0.02) and strain rate (r=-0,75, p=0,0001).
Discussion and Conclusion: Frequent PVC is associated with impaired LV myocardial contractility in patients with normal LV EF. Novel echocardiographic techniques may provide additional data for detecting early deterioration in ventricular systolic function in patients with PVC.

Cardiac imaging / Echocardiography

PP-206

Is there any aortic diastolic dysfunction in patients with increased aortic stiffness?

Hüseyin Sürücü[1], İsmail Hakkı Boz[1], Ersan Tatlı[2], Mehmet Meriç[3]

[1]Private Avcılar Anadolu Hospital, İstanbul
[2]Trakya University Faculty of Medicine, Edirne
[3]JFK Hospital, İstanbul

Introduction: We looked for an answer to the question "Is there any aortic diastolic dysfunction in patients with increased aortic stiffness (IAS)?"
Materials and Method: Cases were divided into three groups according to their aortic strain (AS) and aortic distensibility (AD). We allocated the cases with AS values 8 and below as group 1, the ones with 12 and above as group 3. In cases with AS values between 8 and 12 (812), we took into consideration AD values. Cases with AD values 2 and below were included into group 1, cases with AD values 6 and above were included to group 3. The cases that were not included into groups 1 and 3 were defined as group 2. Group 1 (n=36) represented IAS, group 2 (n=24) possible IAS and group 3 (n=25) elastic aorta. And also, pulsed wave tissue Doppler imaging (pw-TDI) parameters were obtained from anterior aortic wall.
Results: Ascending aorta diastolic diameter (AoD) was lower in cases with elastic aorta compared to in patients with IAS and in patients with possible IAS (respectively p<0.001, p=0.025). In group 1, Ea velocity of aortic pw-TDI (Ea-aorta) was lower compared to group 2 and 3 (respectively p=0.040, p=0.09). There was clearly positive correlation between aortic stiffness parameters (AS and AD) and Ea-aorta (for AS p = 0.008, for AD p=0.050). These correlations was depicted in Figure 1 and 2 (sequentially),
Discussion and Conclusion: In IAS patients, it was shown that proximal aorta was not enough to recoil. Furthermore, aortic diastolic parameters (Ea-aorta and AoD) were different in patients with IAS. When these results were taken into account, aortic diastolic dysfunction could be mentioned in IAS patients (The Turkish Journal of Invasive Cardiology. 2011;15:159-66).

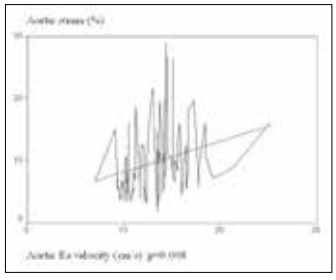


Figure 1. Aortic strain and Ea velocity

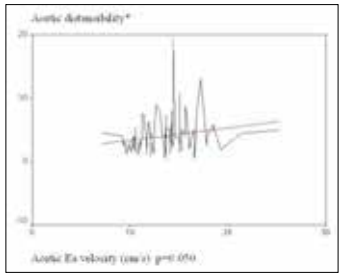


Figure 2. Aortic distensibility and Ea velocity

Cardiac imaging / Echocardiography

PP-207

Biventricular functions in euthyroid Hashimoto's thyroiditis

Mehmet Bülent Vatan[1], Ceyhun Varım[1], Mustafa Tarık Ağaç[1], Perihan Varım[1], Mehmet Akif Çakar[1], Murat Aksoy[1], Hakan Erkan[2], Sabiye Yılmaz[1], Hüseyin Gündüz[1], Ramazan Akdemir[1], Ersan Tatlı[1], Harun Kılıç[1]

[1]Sakarya University Faculty of Medicine, Sakarya
[2]Ahi Evren Cardiovascular and Thoracic Surgery Training and Research Hospital, Trabzon

Introduction: Hashimoto's thyroiditis is an autoimmune endocrine disease that can affect the cardiovascular system. Aim of the study was to evaluate biventricular performance in euthyroid Hashimoto's disease (eHT).
Materials and Method: 45 patients diagnosed with eHT and age and gender-matched control subjects were enrolled in this study. Global right ventricle (RV) and left ventricle (LV) functions are evaluated by echocardiography.
Results: Demographic variables are similar between eHT group and controls. With regard to LV function; deceleration time and isovolumic relaxation time were found to be significantly higher in the eHT group compared to controls. In contrast, the peak E wave velocity, E/A ratio and ejection time were lower in the eHT group. LV-Tei index and E/E' ratio were also significantly increased in the eHT group in comparison with controls. The echocardiographic evaluation of RV was demonstrated that, tricuspid E/A ratio was significantly lower in the eHT group. The PWTDI parameters such as, late diastolic velocity (A'), isovolumic contraction time, and RV-Tei index values were significantly higher in patients with eHT. However, early diastolic velocity (E') and E'/A' ratio were significantly lower in eHT group compared to controls. Tricuspid Annular Plane Systolic Excursion (TAPSE) and pulmonary acceleration time (PAcT) were also found to be significantly lower in patients with eHT.
Discussion and Conclusion: This study demonstrated for the first time in the literature that both right and left ventricle undergo structural and functional remodeling in eHT. We concluded that these changes are observed regardless of normal thyroid hormone levels.

Table 1. Left ventricular evaluation

	eHT group (n=53)	Control group (n=40)	P
E (m/sec)	0.9±0.2	1.0±0.15	0.02
E/A ratio	1.3±0.4	1.5±0.3	0.01
DT (msec)	228.9±29.1	194.2±20.3	<0.001
ET (msec)	261.3±36.2	280.0±32.6	0.02
IVRT (median,ms)	95(87, 103)	77(70, 86)	<0.001
LV-Tei index	0.6±0.2	0.4±0.1	<0.001
E/E' ratio	7.5±1.9	6.7±1.8	0.04

Table 2. Right ventricular evaluation

	eHT group (n=53)	Control group (n=40)	P
E/A ratio (median)	1.4(1.2, 1.5)	1.5(1.3, 1.7)	0.01
TAPSE (cm)	2.0±0.3	2.2±0.2	<0.001
PAcT (msec)	124.3±22.6	149.6±18.3	<0.001
RV-Tei index	0.40±0.11	0.28±0.07	<0.001
E' (cm/sec)	15.5±3.9	17.2±4.2	0.03
A' (cm/sec)	12.9±3.8	11.1±3.3	0.007
E'/A' ratio	1.3±0.6	1.6±0.5	0.001

Cardiac imaging / Echocardiography

PP-208

Tricuspid regurgitation may be associated with patent foramen ovale in healthy subjects: a transeosephageal echocardiographic study

Hasan Kadı[1], Birol Özkan[2], Eyüp Avcı[3], Taha Gürbüzer[1], Tarık Yıldırım[3]

[1]Balıkesir University, Faculty of Medicine, Balıkesir
[2]Kartal Koşuyolu Yüksek İhtisas Training and Research Hospital, İstanbul
[3]Balıkesir State Hospital, Balıkesir

Introduction: The prevalence of TR has reported between 44-100% in healthy population. Congenital heart disease with from left to right shunt lead to volume overload in the pulmonary circulation and eventually increase systolic pulmonary artery pressure (sPAP). Increased sPAP is cause of TR. Patent foramen ovale (PFO) is a normal communication between left and right atrium during intrauterine life. The anatomical closure of PFO occurs at the end of the first year of life. But, in same individuals, the closure is to be incomplete. Aim of the study; to investigate association between TR and PFO in normal subjects.
Materials and Method: Subjects who had TR were included to the study. Subjects who had evidence of cardiovascular or other systemic disease were excluded from the study. Comprehensive right ventricular 2D, spectral, and color Doppler measurements were performed according to the American Society of Echo-

cardiography guidelines. Systolic pulmonary artery pressure (sPAP) was estimated from the peak systolic velocity of the TR. Patent foramen ovale was considered present if at least of one bubble was seen in the left atrium within 5 cardiac beats from complete right atrial opacification.

Results: The 57 subjects who had TR and suitable for the study criteria were enrolled in the study. There were 32 subjects in the PFO (+) group and 25 subjects in the PFO (-) group. Both groups were similar in terms of age, gender, body mass index, and body surface area. The sPAP was significantly higher in the PFO (+) group (p<0.001). The TR flow was limited to early systole in 76% of subjects in the PFO (-) group and 47% of subject in the PFO (+) group while 53% of subjects in the PFO (+) group and 24% of subject in the PFO (-) group have pansystolic TR flow (p=0.027). Tricuspid annular diameter, right ventricular basal and mid diameter were higher in the PFO (+) group. Although the difference was not statistically significant, it was close to significance (p=0.072, p=0.057, p=0.099 respectively). The sPAP was a predictor of PFO in the logistic regression analyses (B=0.43, p<0.001, odds ratio = 1.54, 95% confidence interval = 1.2–1.9).

Discussion and Conclusion: Shunt direction is from left to right in patients with PFO. Shunt from left to right may lead to increased blood flow in the pulmonary vascular bed. Increased pulmonary flow induces irreversible changes in the pulmonary vasculature. Finally, pulmonary artery pressure increase as a result of these changes. Each 10 mmHg increase in sPAP associated with 2.26-fold increase in TR severity. In our study; when sPAP was calculated from TR, it was found that sPAP was higher in the PFO (+) group. Logistic regression analyses revealed that sPAP was an independent risk factor for TR. Our study results shown that TR might be associated with PFO in healthy individuals who had sPAP approaches the upper limit of normal and pansystolic TR flow. The prominent mechanism of TR is elevated sPAP in subjects with PFO. It is appear that tricuspid annular dilatation has a smaller role.

Interventional cardiology / Peripheral vascular and carotid

PP-209

Short and long term effect of carotid artery stenting on arterial blood pressure measured with an ambulatory blood pressure monitoring

Erkan Köklü, İsa Öner Yüksel, Şakir Arslan, Nermin Bayar, Göksel Cağırcı, Görkem Kuş, Selçuk Küçükseymen

Antalya Education and Research Hospital, Antalya

Introduction: The aim of this trial is to assess the short and long term effects of carotid artery stenting (CAS) procedure on blood pressure (BP) with ambulatory BP monitorization.

Materials and Method: One hundred fifty three patients who were performed CAS for primary or secondary protection were enrolled to our study between dates of 2010 December and 2013 September. Only 123 patients' BP levels could be monitorized for 1 year. Pre-procedure levels of BP were compared with BP levels of 24th hour and first year after procedure.

Results: Systolic and diastolic BP levels of 24th hour and first year after CAS were significantly lower than pre-procedure BP levels. Mean 24th hour systolic BP was 113±13 mmHg and diastolic BP was 63±8 mmHg both of which were significantly lower (p<0.001 and p<0.001 respectively) while pre-procedure mean systolic BP was 133±10 mmHg and mean diastolic BP was 75±9 mmHg. Moreover, mean first year systolic BP was 125±10 mmHg with a decline of 8±8 mmHg and mean diastolic BP was 71±8 mmHg with a decline of 4±7 mmHg, both of which were again significantly lower when compared with pre-procedure levels (p<0.001 and p<0.001 respectively).

Discussion and Conclusion: Systolic and diastolic BP levels are diminished after CAS. BP reduction proceeds even after 1 year of CAS.

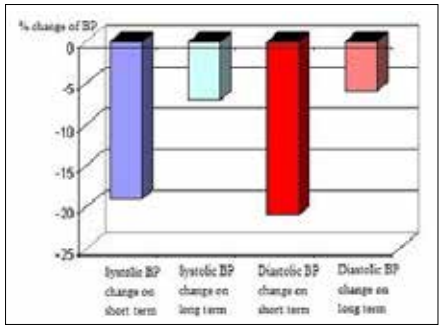


Figure 1. Blood pressure changes after 24 hours

Table 1. Proportion of blood pressure change

Proportion of decrease of mean blood pressure after CAS (mmHg)	24. hour after CAS	P Value	First year after CAS	P Value
SBP	20 ± 12	< 0.001	8 ± 8	<0.001
DBP	13 ± 9	< 0.001	4 ± 7	<0.001

(DBP: diastolic blood pressure, SBP: systolic blood pressure)

Interventional cardiology / Peripheral vascular and carotid

PP-210

Is acute carotid artery stent thrombosis an avoidable complication?

Erkan Köklü, İsa Öner Yüksel, Nermin Bayar, Şakir Arslan, Ahmet Genç, Murat Esin, Ahmet Serbülent Savcıoğlu, Selçuk Küçükseymen

Antalya Education and Research Hospital, Antalya

Introduction: Carotid artery stenting (CAS) is an alternative to carotid endarterectomy (CEA) for primary and secondary prevention of ischemic stroke. The most serious complication of CAS is acute carotid artery stent thrombosis (ACAST). The treatment approach for patients who develop ACAST is still controversial.

Materials and Method: This paper presents the discussion about 3 patients who developed ACAST due to antiplatelet resistance, 1 patient who developed ACAST due to irregular use of antiplatelet drugs and 4 patients who were found to have antiplatelet resistance prior to CAS and were given an antiaggregant therapy other than clopidogrel and were thus prevented from developing ACAST.

Results: The demographic, clinical, radiological, laboratory, pharmacological characteristics as well as complications of all patients are presented in chronological order in the tables (Table 1-2). Abbott-Vascular Xact Stent was used for the 1st, 6th, 7th and 8th patients, Cristallo Ideale SE Stent (Invatec) was implanted to the 4th patient, and sinus-Carotid-Conical-RX Stent (OptiMed) was used for the 2nd, 3rd and 5th patients. As a carotid balloon, Pyxis-c-Balloon Catheter, Winsen, Germany was chosen.

Discussion and Conclusion: In conclusion, acute CAS thrombosis is a rare complication with high morbidity and mortality. The most important cause is inadequate or ineffective antiaggregant therapy. Testing patients who are candidates for CAS for acetylsalicylic acid and clopidogrel resistance may prevent this complication.

Table 1. Demographic features of the patients

Patient no	Sex	Age (yr)	Hypertension	Diabetes mellitus	Coronary artery disease	Smoker	Statin use	Platelet count (10^3/μL)	MPV (fl)
1	Male	74	+	-	+	-	-	262	10,2
2	Male	71	+	-	+	-	+	265	10,6
3	Male	75	+	+	-	-	-	232	12,8
4	Male	61	+	-	+	+	+	240	11,5
5	Male	72	-	-	+	+	+	179	11,1
6	Male	83	-	-	+	-	+	244	9,2
7	Female	77	+	+	-	-	+	284	9,8
8	Female	45	+	+	+	-	+	242	10,7

Table 2. Radiological and pharmacological characteristics

Hasta no	Symptom	ICA narrowness %	Balloon/stent diameter (mm)	ACAST appearance time	PFA-100 test (s)	Not antiplatelet
1.	Symptomatic	Right ICA 98%	5x20/ 8x10x40	3rd hour	P2Y: 73 Col/EPI:127	Ticlopidin
2.	Symptomatic	Left ICA 95%	5x20/ 7x10x40	4th hour	P2Y: 99 Col/EPI:122	Ticlopidin
3.	Symptomatic	Left ICA 95%	5x20/ 8x10x40	3rd hour	P2Y: 76 Col/EPI:70	Ticlopidin
4.	Symptomatic	Left ICA 90%	4.5x20/ 6x9x40	8th day	P2Y: 85/228 Col/EPI:>300	Clopidogrel
5.	Symptomatic	Right ICA 80%	5x16/ 7x10x40	---	P2Y: 64 Col/EPI:>300	Ticagrelor
6.	Asymptomatic	Right ICA 80%	5x20/ 8x10x40	---	P2Y: 73 Col/EPI:177	Ticagrelor
7.	Asymptomatic	Right ICA 80%	5x20/ 8x10x40	---	P2Y: 81 Col/EPI:>300	Ticagrelor
8.	Symptomatic	Left ICA 90%	5x20/ 7x9x30	---	P2Y: 73 Col/EPI:>270	Ticagrelor

Interventional cardiology / Peripheral vascular and carotid

PP-211

Association of neutrophil/lymphocyte ratio with plaque morphology in patients with asymptomatic intermediate carotid artery stenosis

Erkan Köklü[1], İsa Öner Yüksel[1], Göksel Cağırcı[2], Nermin Bayar[1], Zehra Erkal[1], Selçuk Küçükseymen[1], Şakir Arslan[1]

Antalya Education and Research Hospital, Antalya

Introduction: Inflammation is the primary factor in all stages of atherosclerosis including its onset, progression, up until rupture of the atherosclerotic plaque. Non-calcified carotid plaques are more unstable than calcified plaques, and they are associated with a higher risk of rupture, thromboembolism and consequently, stroke. The purpose of the present study is to compare calcified and non-calcified plaques that cause intermediate carotid artery stenosis with respect to neutrophil/lymphocyte ratio (NLR).

Materials and Method: A total number of 139 asymptomatic patients with 50-70% stenosis of the carotid artery were included in this study. Patients included in the calcified (n=73) and non-calcified (n=66) plaque

groups were compared with respect to total neutrophil count, lymphocyte count and NLR.
Results: Total lymphocyte count was statistically significantly lower in the non-calcified group compared to the calcified group [total lymphocyte count in non-calcified / calcified plaque groups (10^3/mm^3): 2.1/2.3, respectively] (p=0.002). NLR was statistically significantly higher in the non-calcified plaque group compared to the calcified plaque group (NLR in non-calcified / calcified plaque groups: 2.6/2.1, respectively) (p<0.001). Multivariate regression analysis showed that NLR was independently associated with non-calcified carotid artery plaque (odds ratio 3.786, 95% CI 1.917-7.476, p=0.001).
Discussion and Conclusion: NLR is increased in the presence of non-calcified carotid artery plaques that cause asymptomatic intermediate stenosis. Increased NLR can be used as a marker to assess the risk of rupture of the non-calcified carotid artery plaques.

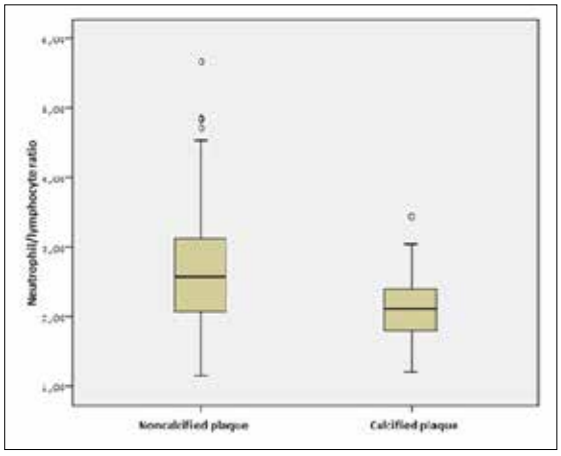


Figure 1. Box-plot demonstration

Table 1. Independent predictors of non-calcified plaque

	95% confidence interval		P value
	OR	%	
NLR	3.786	1.917-7.476	0.001
Age	0.998	0.951-1.047	0.935
Hypertension	1.302	0.533-3.178	0.562
Diabetes mellitus	0.887	0.395-1.994	0.772
Coronary artery disease	1.355	0.576-3.189	0.486
Hyperlipidemia	0.857	0.370-1.984	0.719
Statin	1.181	0.541-2.577	0.676
BMI	0.980	0.810-1.186	0.834
ASA	1.611	0.538-4.827	0.394

Interventional cardiology / Peripheral vascular and carotid

PP-212

Evaluation of mean platelet volume and platelet distribution width in patients with asymptomatic intermediate carotid artery plaque

Erkan Köklü, İsa Öner Yüksel, Göksel Çağırcı,Nermin Bayar, Emre Asiltürk, Cem Yunus Baş, Selçuk Küçükseymen, Şakir Arslan

Antalya Education and Research Hospital, Antalya

Introduction: Platelets play a significant role in the pathogenesis of atherosclerosis. In atherosclerotic plaques, the risk of plaque rupture is more crucial than the severity of stenosis they cause. Non-calcified carotid artery plaques are more unstable than calcified plaques, and they are associated with a higher risk of rupture, thromboembolism and consequently, stroke. Purpose of the present study is to compare calcified and non-calcified plaques that cause intermediate carotid artery stenosis with respect to mean platelet volume (MPV) and platelet distribution width (PDW).
Materials and Method: A total number of 139 asymptomatic patients with 50-70% stenosis of the carotid artery were included in this study. Carotid Doppler ultrasound imaging and computed tomography angiography were performed to divide the carotid artery plaques into two groups as calcified and non-calcified. Patients included in the calcified (n=73) and non-calcified (n=66) plaque groups were compared with respect to MPV and PDW.
Results: MPV was statistically significantly higher in the non-calcified plaque group compared to the calcified plaque group [MPV in non-calcified / calcified plaque groups (fl): 10.0 / 9.0, respectively] (p<0.01). PDW was not significantly different between the two groups (p=0.09) (Figure 1). Platelet count was statistically significantly higher in the calcified plaque group compared to the non-calcified plaque group (Platelet count in calcified / non-calcified plaque groups (103/mm^3): 250±63/226±56, respectively) (p=0.019) Figure 2). Multivariate regression analysis showed that MPV was independently associated with non-calcified carotid artery plaque (odds ratio 5.95, 95% CI 2.63-13.45, p<0.001).
Discussion and Conclusion: MPV is increased in the presence of non-calcified carotid artery plaques that cause asymptomatic intermediate stenosis. Increased MPV can be used as a marker to predict the risk of rupture of the non-calcified carotid artery plaques.

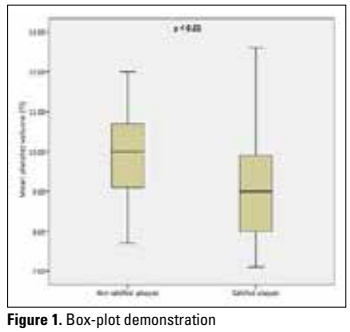


Figure 1. Box-plot demonstration

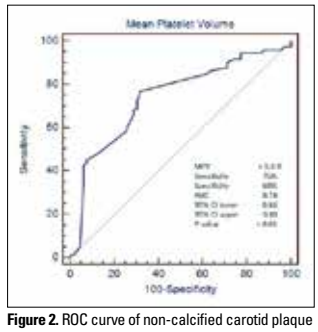


Figure 2. ROC curve of non-calcified carotid plaque

Interventional cardiology / Structural heart and valve diseases

PP-213

Trans-subclavian transcatheter aortic valve replacement with various valve types: single-center experience

Hacı Ahmet Kasapkara[1], Abdullah Nabi Aslan[2], Hüseyin Ayhan[1], Nihal Akar Bayram[1], Emine Bilen[2], Cenk Sarı[2], Serdal Baştuğ[2], Tahir Durmaz[1], Telat Keleş[1], Engin Bozkurt[1]

[1]Yıldırım Beyazıt University Faculty of Medicine, Ankara
[2]Ankara Atatürk Education and Research Hospital, Ankara

Introduction: Transcatheter aortic valve implantation (TAVI) has been accepted rapidly as an alternative to surgery in high risk or inoperable patients. Although, transfemoral artery route is the mostly preferred access site in current era, in patients with severe ilio-femoral arteriopathy, other vascular access sites may be required. In this paper, we wanted to report our experience with the transsubclavian approach for TAVI using different valve systems.
Materials and Method: Eight patients (mean age of 75.3±7.6 years, 5 males) with sysmptomatic severe aortic stenosis and high surgical risk were excluded from transfemoral aortic valve implantation because of ilio-femoral arteriopathy between June 2011 and May 2015. 7 of these patients underwent TAVI via the left subclavian artery (SCA) whereas 1 patient via the right SCA. Surgical cut-down and closure techniques were utilized in all patients. 6 of these patients received balloon expandable Edwards Sapien XT (one 23 mm and five 26 mm), one balloon expandable Sapien 3 (26 mm) and one self expandable Lotus (27 mm) valves.
Results: Procedural success was obtained in 7 (87.5%) of these patients. The average mean aortic gradient decreased to 12.2 mmHg from 45.7 mmHg immediately after TAVI. However, in one patient emergent surgical aortic valve replacement was required due to the complication of valve embolization. Also, thrombus formation at the right subclavian artery was detected in one patient and resolved with medical therapy at follow-ups.
Discussion and Conclusion: Transsubclavian approach for TAVI is safe and feasible. Proper patient and valve selection concurrent with the utilization of multimodal imaging techniques are crucial for a successful and uncomplicated procedure.

Table 1. Baseline characteristics of the patients

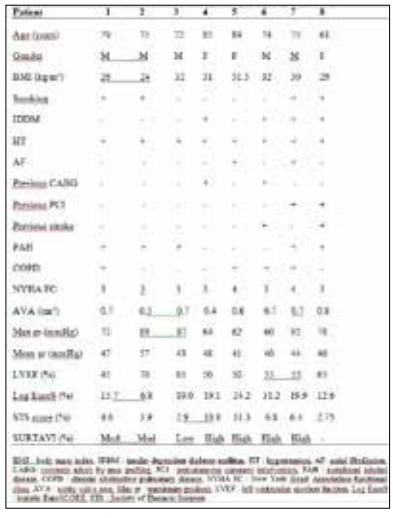
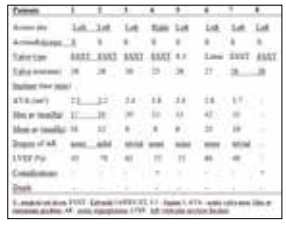


Table 2. Procedural features of the patients



Interventional cardiology / Structural heart and valve diseases

PP-214

Initial Experience of percutaneous mitral valve repair with the MitraClip in a High-risk Turkish Series

Cüneyt Toprak[1], Gökhan Kahveci[1], Alev Kılıçgedik[1], Cevat Kırma[1], Selçuk Pala[1], Cihangir Kaymaz[1], Nihal Özdemir[1], İbrahim Akın İzgi[1], Mehmet İnanır[1], Anıl Avcı[1], Mehmet Mustafa Tabakçı[1], Ali Metin Esen[2]

[1]Kartal Koşuyolu Education and Research Hospital, İstanbul
[2]Memorial Hospital, İstanbul

Introduction: Mitral valve regurgitation (MR) is the second-most frequent heart valve disease in Europe. Without intervention, the prognosis of severe symptomatic MR is poor. Percutaneous edge-to-edge mitral valve repair using the MitraClip (Abbot Vascular, USA) system is a promising technique for mitral regurgitation treatment in select high-surgical-risk patients. The aim of the present study is to describe initial experience of MitraClip therapy in Turkey.
Materials and Method: Between May 2013 and September 2014, 28 high surgical risk patients with MR of at least grade 3+ and a mean EuroSCORE of 26% underwent MC implantation in our Institution. In-hospital and follow-up safety and efficacy results are presented.
Results: The patients' mean age was 58 years and 75% were male. Grade III-IV MR was present in all patients with the mainly occurred from restrictive functional mitral regurgitation (89%). Mean left ventricular ejection fraction was 27% and New York Heart Association (NYHA) class was III-IV in 89%. Acute procedural success was 89% (47% of patients received single clip; 39% received two clips; 14% received three clips). One periprocedural death occurred (cardiac tamponade in 24 hours post-implantation) and another 2 patients died during follow-up (mean, 13.9 months). After one year, more than 75% of patients had an MR severity of ≤2+ and were in either NYHA class I or II, but no significant change in left ventricular volumes and systolic function. Also, there was a significant improvement in 6-minute walk test and quality of life.
Discussion and Conclusion: Our initial experience with MitraClip system showed promising results and it can be performed safely in patients considered high surgical risk, especially have end-stage heart failure.

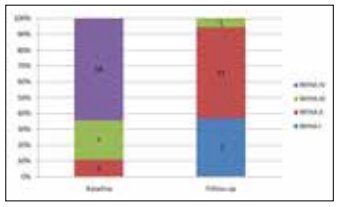


Figure 1. NYHA class at baseline and follow-up

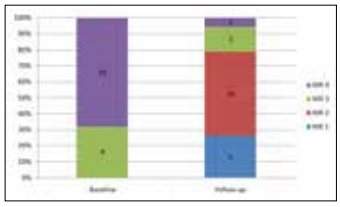


Figure 2. Mitral regurgitation at baseline and follow-up

Interventional cardiology / Structural heart and valve diseases

PP-215

The effects of femoral artery closure methods for development of contrast induced nephropathy after transcatheter aortic valve replacement

İlker Gül, Mustafa Zungur, Ahmet Taştan, Nevzat Uslu, Talat Tavlı

Şifa University Faculty of Medicine, İstanbul

Introduction: Aortic valve replacement with the transcatheter aortic valve implantation (TAVI) method can be performed in patients considered to be at high surgical risk or inoperable by the heart team. In this study we aimed to investigated the effects of different vascular clossure techniques on the development of vascular complications and CIN.
Materials and Method: One hundred and ten patients (aged 78.9±12.2 years; 55 females) who underwent aortic valve replacement with the TAVI method between June 2013 and April 2015 were included. CIN was defined as an absolute increase in serum creatinine of >0.5 mg/dl or a relative increase of >25% within 48–72 h after TAVI. The patients were classified into two groups according to the femoral artery closure technigues surgical cutdown (SCD) and vascular closure device (VCD).
Results: In recent study vascular complications occurred in 16 patients (12.7%); 7 of these patients were in the CIN+ group (p=0.004). Urgent peripheral interventions were required for 9 patients with vascular complications (8.2%). Five of them were in the CIN+ group (p=0.027). The amount of contrast medium volume (CV) (p=0.008) and the incidence of CIN (p=0.009) were higher in VCD group than in the SCD group. Baseline glomerular filtration rate (GFR), Mehran score, CV, and baseline creatinine were determined as the predictive factors of CIN development. As a result of ROC analysis, the contrast volume which may predict the development of CIN was determined as 178.5 ml [AUC; 0.810, 95% CI 0.704–0.928, sensitivity 78%, specificity 76%].
Discussion and Conclusion: The patients who have co-morbidities, low baseline GFR and high baseline creatinine levels, SCD can be the preferable method for femoral artery interventions in TAVI patients.

Table 1. Demographic and operation characteristics

Variables	sCD (n=35)	VCD (n=74)	p value
Contrast Induced Nephropathy (n=26, 23.6%)	7 (19.4%)	22 (29.7%)	0.009
CV (±L)	165.2 (±34.3)	188.1 (±49.2)	0.008
Mortality (three months after TAVI) [n=7, 6.4%]	2 (5.9%)	5 (6.8%)	0.828
Vascular injury (n=16, 12.7%)	2 (5.9%)	14 (18.9%)	0.002
Urgent Peripheral Intervention (n=9, 8.2%)	0	8 (10.8%)	0.014
Total operation time [minutes]	122.9 (±25.7)	104.2 (±38.3)	0.010

Table 2. Regression analysis of the patients

Variables	Univariate analysis		Multivariate analysis	
	OR (95% CI)	p value	OR (95% CI)	p value
Creatinine	1.7 (1.1-2.6)	0.022	1.5 (1.2-2.7)	0.048
GFR	3.4 (1.5-5.2)	<0.001	2.3 (1.2-4.6)	0.007
CV	4.6 (1.7-6.9)	<0.001	3.9 (1.5-7.5)	0.038
VCD	1.4 (0.9-1.7)	0.046	1.0 (0.6-1.6)	0.284
Mehran score	2.9 (1.1-5.2)	0.014	2.1 (1.1-3.4)	0.019

Interventional cardiology / Structural heart and valve diseases

PP-216

The relationship between risk scores and nephropathy in patients who have undergone TAVR

Nijad Bakhshaliyev, Tolga Sinan Güvenç, Gökhan Ertaş, Ahmet Ekmekçi, Ahmet Murat, Hatice Betül Erer, Dilaver Öz, Şahin Avşar, Tolga Onuk, Neşe Çam, Mehmet Eren

Dr. Siyami Ersek Chest, Heart and Cardiovascular Surgery Training and Research Hospital, İstanbul

Introduction: Nephropathy is an important predictor of mortality in patients who have undergone TAVR procedure. Early identification of patients who have nephropathy risk is important.Taking precautions reduce the complications of TAVR procedure and improve the survival.Incidence and predictors of acute kidney injury in patients who have undergone TAVR are examined in different studies.But the relationship between scores that used in perioperative risk assessment like the EuroSCORE II, STS score with nephropathy has not been evaluated.In this study, We examined the relationship between EuroSCORE II, STS scores and nephropathy in patients who have undergone TAVR.
Materials and Method: 37 patients who have undergone transcatheter aortic valve replacement because of severe aortic stenosis between August 2012 and March 2014 in our hospital were retrospectively collected.23 of 37 patients (62.2%) were female gender and the mean age was 79,57±6,10. The mean STS score was 4,6±2,29 and the mean EuroSCORE II score was 11,07±6,12.30.6% of patients developed kidney damage.
Results: The mean STS score was 6,74±2,4, the mean EuroSCORE II score was 17,62±5,46 and the mortality rate was %18 in patients with acute kidney injury. The mean STS score was 3,79±1,56, the mean EuroSCORE II score was 8,13±3,88 and the mortality rate was %4 in patients without acute kidney injury.
Discussion and Conclusion: STS and EuroSCORE II are predictors of acute kidney injury in patients who have undergone TAVR.

Interventional cardiology / Structural heart and valve diseases

PP-217

Mean platelet volume in mitral stenosis before and after valvuloplasty

Saif Hamad, İbrahim Hakan Güllü

Başkent Universtiy Hospital, Adana

Introduction: Percutaneous mitral balloon valvuloplasty (PMBV) is an alternative treatment to surgery in mitral stenosis. Hipercoagulopathy and prothrombotic stage is an important mechanism in mitral stenosis. Studies have shown an increase in mean platelet volume (MPV) levels in patients with mitral stenosis. We investigated the relation beetween MPV and the vicissitudes of transmitral gradient due to the relation of the platelet size, platelet secretions and its effects on systemic embolism and trombosis. The aim of this study was to discuss platelet size alterations in involvement of rheumatic inflammatory process with increased transmitral gradient and atrial blood stasis. Which? Why? And How?
Materials and Method: 69 conscutive patients (59 women,10 men) included to the study beetween 2008-2013 who were admitted to the hospital with presentation of exertional dypsnea and diagnosed with mitral stenosis after various investigations. All patients had New York Heart Association class 2-3 functional capacity and mean mitral valve area was calculated 1,15±0,22 cm^2. Blood samples were taken 30 minutes before the procedure and 1 month after the procudure and evacuated in to dipotassium EDTA tubes. 21 patients had Hypertension, 10 patients Diabetes Mellutis and 6 patients had Hyperlipidemia. Six patients were smokers. 26 patients were in atrial fibrillation. Transesophageal echocardiography (TEE) images has shown left atrial spontaneous echo contrast in 17 patients.
Results: MPV was increased after the procedure significantly (p<0,001). Also statistical significant decreased platelet an hemoglobin levels was found. (p=0,02, p=0.011). No correlation found beetween MPV and diabetes mellitus, hypertension, hyperlipidemia, left atrial diamater, systolic pulmonary artery pressure, spontaneous left atrial contrast or atrial fibrillation.
Discussion and Conclusion: In our study MPV levels were measured before and after treatment. Significant decrease in MPV levels observed in both groups of atrial fibrillation and normal sinus rhthym. MPV affected by inflammatory based mechanism and in this wise expression of large platelets dependent on systemic forces. In this context, endothelial dysfunction, shear stress, atrial stasis and such as all of these factors, affects cytokines and thrombopoietin expression which results in production of large platelets in indirect way. As a result, in case of rheumatic mitral stenosis, there might two main physiological factors increasing MPV; shear stress and chronic process low-grade inflammation. Ballon procedure is not only reducing the transmitral gradient but also valvuloplasty results in slowing down the process of inflammation. This findings validity need further studies to confirm.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-218

Assessment of repolarization abnormalities in admission electrocardiogram of patients with myocarditis

Hacı Murat Güneş[1], Gamze Babur Güler[1], Ekrem Güler[1], Mehmet Kamil Teber[2], Gültekin Günhan Demir[1], Filiz Kızılırmak[1], Beytullah Çakal[1], Bilal Boztosun[1]

[1]İstanbul Medipol University, İstanbul
[2]Kayseri Training and Research Hospital, Kayseri

Introduction: Myocarditis usually present with sinus tachycardia in the acute phase however, many other arrhythmias might be seen as well. Repolarization abnormalities detected in electrocardiogram (ECG) were suggested to be associated with ventricular tachycardia and ventricular fibrillation. In this study we aimed to investigate repolarization abnormalities in basal ECG of patients with myocarditis for the first time.
Materials and Method: We enrolled 30 patients diagnosed with myocarditis based on the definition used in the European Society of Cardiology Working Group on Myocardial and Pericardial Diseases position state-

ment. Following matching of age and gender, 25 individuals were selected in the control group. Two different cardiologists measured corrected QT (QTc), QT dispersion (QTd), QT peak (QTp), T wave peak to T wave end (TpTe), TpTe/QTc ratios in 12-lead ECG.
Results: When compared with control group, QTp (p:0,012), QT (p:0,002), TpTe (p:<0,001) were significantly higher in patients with myocarditis. Comparison of receiver operating characteristic (ROC) curves was used to test the statistical significance of the difference between the areas under ROC curves with Hanley & McNeil method. The area under the ROC curve (AUC) for electrocardiographic characteristics as QT (AUC: 0,736, 95% CI [0,600-0,846]), QTP (AUC : 0,680, 95% CI [0,540-0,799]), TpTe (AUC: 0,771, 95% CI [0,638-873]) and TpTe/QTc (AUC: 0,774, 95% CI [0,641-0,876]) in myocarditis were not significantly different from each other but all of them were different from 0.5.
Discussion and Conclusion: Admission ECGs of patients with myocarditis were associated with repolarization abnormalities indicated by prolonged Tp-e, Tp-e/QTc, QTp and QT measurements. These novel findings may be one of the reasons underlying the arrhythmic events in patients with myocarditis.

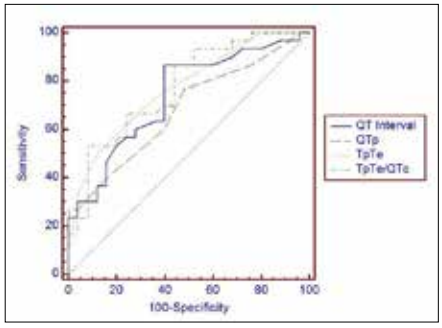


Figure 1. Comparison of ROC curves for myocarditis

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-219

Atrial electromechanical properties and P wave indices in celiac disease

Tolga Han Efe[1], Ahmet Göktuğ Ertem[2], Yusuf Coşkun[1], Murat Bilgin[1], Osman Beton[1], Lale Dinç Asarcıklı[1], Mehmet Erat[1], Mehmet Aytürk[1], İlahmi Yüksel[1], Ekrem Yeter[1]

[1]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[2]Ankara Atatürk Education and Research Hospital, Ankara

Introduction: Celiac disease (CD) is an autoimmune and inflammatory disorder of the small intestine. Increased P wave dispersion and electro-mechanic delay (EMD) are predictors of atrial fibrillation. The objectives of this study were to evaluate atrial electromechanical properties and P wave indices measured by tissue Doppler imaging and surface electrocardiography (ECG) in patients with celiac disease.
Materials and Method: Thirty-nine patients with celiac disease (CD), and 26 healthy volunteers, matched for age and sex, were enrolled in the study. Atrial electromechanical properties and P wave indices were measured by using transthoracic echocardiography and surface ECG. Interatrial EMD, left intraatrial EMD, right interatrial EMD, maximum P wave length (Pmax), minimum P wave length (Pmin) and P wave dispersion (PWD) were calculated.
Results: Celiac disease patients and healthy controls showed no significant differences in terms of basal characteristics. Left intraatrial EMD, right intraatrial EMD, and interatrial EMD were significantly longer in CD patients than the healthy controls (p=0.03, p=0.02, p<0.0001, respectively). Pmax and PWD were significantly higher in the CD group patients compared with the healthy subjects (p=0.04 and p=0.002, respectively). PA tricuspid and Pmin showed no difference between the patients and healthy controls (p=0.234, p=0.148). Inter-atrial electromechanical delay was not correlated with age, age at the diagnosis of systolic and diastolic blood pressure, EF, LA diameter, disease duration, and smoking status. On the other hand PWD (p=0.09, r=0.323) and left intraatrial EMD (p<0.0001, r=0.704) were positively correlated with inter-atrial EMD.
Discussion and Conclusion: In the present study, atrial EMD and PWD were significantly higher in patients with CD compared with healthy individuals. Increased atrial EMD and PWD might be an early marker of AF. This study is the first one to show atrial electromechanical properties and P wave indices in CD.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-220

The association of epicardial adipose tissue thickness with parameters of ventricular repolarization using Tp-e interval and Tp-e/QT ratio

Özgür Kaplan[1], Ertuğrul Kurtoğlu[2], Gökay Nar3, Erdoğan Yaşar[2], Gökhan Gözügüyük[2], Cem Doğan[2], Ahmet Uğur Boz[2], Şıho Hidayet[2], Hasan Pekdemir[4]

[1]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul
[2]Malatya State Hospital, Malatya
[3]Ahi Evran University Research and Education Hospital, Kırşehir
[4]İnönü University Faculty of Medicine, Malatya

Introduction: The relationship between periatrial adiposity and atrial arrhythmias has been shown in previous studies. However, there is not much data on the relationship between epicardial adipose tissue (EAT) thickness and parameters of ventricular repolarisation. Thus, we aimed to evaluate the association of EAT thickness with indices of ventricular repolarisation by using Tp-e interval and Tp-e/QT ratio.
Materials and Method: The present study included 50 patients whose EAT thickness ≥9 mm (group 1) and 40 control subjects whose EAT thickness <9 mm (group 2). Transthoracic echocardiographic examination was done in all participants. QT parameters, Tp-e intervals and Tp-e/QT ratio were measured from the 12-lead electrocardiogram.
Results: QTd (41.1±2.5 vs 38.6±3.2, p<0.001) and corrected QTd (46.7±4.7 vs 43.7±4, p=0.002) were significantly higher in group 1 when compared to group 2. The Tp-e interval (76.5±6.3, 70.3±6.8, p<0.001), cTp-e interval (83.1±4.3 vs 76±4.9, p<0.001), Tp-e/QT (0.20±0.02 vs 0.2±0.02, p<0.001) and Tp-e/QTc ratios (0.2±0.01 vs 0.18±0.01, p<0.001) were increased in group 1 in comparision to group 2. Significant positive correlations were found between EAT thickness and Tp-e interval (r=0.548, p<0.001), cTp-e interval (r=0.259, p=0.01), and Tp-e/QT (r=0.662, p<0.001) and Tp-e/QTc ratios (r=0.560, p<0.001).
Discussion and Conclusion: The present study showed that the Tp-e interval, and Tp-e/QT, and Tp-e/QTc ratios were elevated in patients with higher EAT thicknesses, which might imply an indicator of risk of ventricular arrhythmias in this group of patient.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-221

Role of left ventricle in the long term recurrence of atrial fibrillation following a single cryoballoon ablation session

Barış Ünal, Özgür Aslan, Hüseyin Dursun, Ebru Özpelit

Dokuz Eylül University, Faculty of Medicine, İzmir

Introduction: Some clinical and echocardiographic parameters have been shown to predict long-term efficacy of cryoballoon ablation (CBA) of atrial fibrillation (AF). In this study, we aimed to evaluate the long term follow-up results of our single center experience in CBA in patients with AF.
Materials and Method: In total, 102 patients were enrolled with symptomatic, drug refractory AF. Pulmonary vein isolation (PVI) with CBA technique was performed. Primary endpoint of this consecutive single-centre study was first electrocardiogram-documented recurrence of AF. Clinical and echocardiographic predictors of AF recurrence were analyzed by univariate and multivariate Cox regression analyses.
Results: In a mean follow-up of 22 months, 33 AF recurrences occurred. In univariate analysis, predictors of AF recurrence were found as left atrial size(LA) (OR = 3,00 p=0,008 %95 CI = 1,335-6,747), left ventricular end diastolic diameter (LVEDD) (OR = 2,31 p=0,05 %95 CI = 1,001-5,376), and presence of hypertension (HT) (OR = 3,25 p=0,005 %95 CI = 1,426-7,179). Multivariate Cox regression analysis showed that the independent predictors of AF recurrence were HT (OR = 2,86 p=0,016 %95 CI = 1,217-6,724) and LVEDD(OR = 2,60 p=0,043 %95 CI = 1,032-6,592) (Table 1).
Discussion and Conclusion: Following CBA of AF, the patients with HT and enlarged left ventricle have worse long term outcomes.

Table 1. Analysis of clinic and echocardiography parameters

	Univariate Cox regression			Multivariate Cox regression		
	OR	p	95%CI	OR	p	95% CI
Age	1,02	0,134	0,992-1,062			
Sex	1,39	0,566	0,676-2,890			
LVEDD	2,31	**0,05**	1,001-5,376	2,60	**0,043**	1,032-6,592
LVESD	1,04	0,811	0,727-1,502			
LA	3,00	**0,008**	1,335-6,747	1,92	0,154	0,782-4,753
HT	3,25	**0,005**	1,426-7,179	2,86	**0,016**	1,217-6,724
CRP	1,009	0,805	0,943-1,079			

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-222

The role of bile acids on the initiation of supraventricular tachycardia

Alim Erdem, Fatma Hızal Erdem, Serkan Öztürk, Mehmet Fatih Özlü, Suzi Selim Ayhan, İbrahim Dönmez, Aytekin Alçelik, Mehmet Yazıcı

Abant İzzet Baysal University Bolu Faculty of Medicine Health Research and Application Hospital, Bolu

Introduction: Bile acids have role in the initiation of the cardiac arrhythmias by reducing the duration of cardiac action potential. It was previously shown that there is a close relation between bile acids levels and different type of cardiac arrhythmias. The purpose of the study was to investigate the relation between serum bile acid levels and supraventricular tachycardia (SVT).
Materials and Method: All patients with palpitations that underwent for electrophysiologic study (EPS) in our department between January 2011 and May 2015 were included to the study (n=723). Patients were divided into two groups: those with documented SVT with EPS and those with normal EPS results. In addition, 128 healthy adults without any palpitation symptom, arrhythmic disease, and with normal physical examination results were also classified as controls. Total bilirubin (TB) levels and the other biochemical parameters were analyzed, and difference between groups was evaluated.
Results: After the recruitment, exclusion, and subsequent grouping of subjects; SVT group included 286; normal EPS group included 212; and control group included 128 subjects. The subtypes of SVT group were; 65.4% atria-ventricular nodal reentrant tachycardia (AVNRT), 27.2% atria-ventricular reentrant tachycardia (AVRT), 6.4% atrial tachycardia (AT), and 0.8% other. Serum TB levels in the SVT group were statistically higher than the other groups (p<0.001). In subgroup analyses, serum TB levels were significantly higher especially in AVNRT group than the others (p<0.001; Beta = 0.303, p<0.05).
Discussion and Conclusion: TB levels were found to be related with SVT. In this respect, bile acids, indicated by TB levels, may play a role in SVT.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-223

Evaluation of diagnostic value of heart rate variability in patients with undocumented supraventricular tachycardia

Alim Erdem, Fatma Hızal Erdem, Serkan Öztürk, Suzi Selim Ayhan, Mehmet Fatih Özlü, İbrahim Dönmez, Mehmet Yazıcı

Abant İzzet Baysal University Bolu Faculty of Medicine Health Research and Application Hospital, Bolu

Introduction: It is known that impaired cardiac autonomic function plays an important role in the pathophysiology of cardiac arrhythmias. Heart rate variability (HRV) is a noninvasive method for quantitative assessment of autonomic regulation of the heart. This retrospective study investigated the diagnostic significance of the HRV parameters in patients with symptoms suggestive of paroxysmal supraventricular tachycardia but undocumented tachycardia.
Materials and Method: Patients (n=288; 128 males and 160 females, 19 to 63 years) who underwent electrophysiological study (EPS) for unexplained palpitations, without any documented arrhythmia and who performed a 24-hour Holter monitoring before the procedure, were included in the study. HRV parameters were evaluated using holter monitoring results (SDNN, rMSSD, pNN50, high and low frequency).
Results: SVT was found in 182 patients by diagnostic EPS (AVNRT 42.7%, AVRT 23.8%, AF 14.7%, AFlut 7.5%, AT 7.2%, and others 4.1%). All of HRV parameters (especially SDNN and LF) were significantly lower in the SVT group than that of the normal EPS group (p=0.041). In subgroup analyses, HRV parameters were significantly lower especially in AF and AFlut groups (p<0.001, p=0.001; respectively). There was a significant negative correlation between SDNN and the presence of SVT by EPS (r=-0.324, p=0.001).
Discussion and Conclusion: HRV analysis can help to differentiate undocumented supraventricular tachycardia from non- supraventricular tachycardia palpitations. This study demonstrates for the first time in the literature that HRV analysis may have diagnostic values in patients with undocumented supraventricular tachycardia.

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-224

Evaluation of Tp-e interval and Tp-e/QT ratio in patients with aortic stenosis

Çağrı Yayla[1], Murat Bilgin[2], Mehmet Kadri Akboğa[1], Kadriye Gayretli Yayla[2], Uğur Canpolat[3], Lale Dinç Asarcıklı[2], Mehmet Doğan[2], Osman Turak[1], Serkan Çay[1], Özcan Özeke[1], Ahmet Akyel[2], Ekrem Yeter[2], Sinan Aydoğdu[1]

[1]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[2]Dışkapı Yıldırım Beyazıt Research and Educational Hospital, Ankara
[3]Hacettepe University Faculty of Medicine, Ankara

Introduction: The risk of syncope and sudden cardiac death due to ventricular arrhythmias increased in patients with aortic stenosis (AS). Recently it was shown that Tp-e interval, Tp-e/QT and Tp-e/QTc ratio can be novel indicators for prediction of ventricular arrhythmias and mortality. We aimed to investigate the association between AS and ventricular repolarization using Tp-e interval and Tp-e/QT ratio.
Materials and Method: Totally 105 patients with aortic stenosis and 60 control subjects were enrolled to the present study. The severity of aortic stenosis was defined by transthoracic echocardiographic examination. Tp-e interval, Tp-e/QT and Tp-e/QTc ratios were measured from the 12-lead electrocardiogram.
Results: Tp-e interval, Tp-e/QT and Tp-e/QTc ratios were significantly increased in parallel to the severity of aortic stenosis (p<0.001, p=0.001 and p=0.001, respectively). Also, it was shown that Tp-e/QTc ratio had significant positive correlation with mean aortic gradient (r=0.192, p=0.049) (Figure 1). In multivariate logistic regression analysis, Tp-e/QTc ratio and left ventricular mass were found to be independent predictors of severe aortic stenosis (p=0.03 and p=0.04, respectively) (Table 1).
Discussion and Conclusion: Our study showed that Tp-e interval, Tp-e/QT and Tp-e/QTc ratios were increased in patients with severe AS. Tp-e/QTc ratio and left ventricular mass were found as independent predictors of severe aortic stenosis.

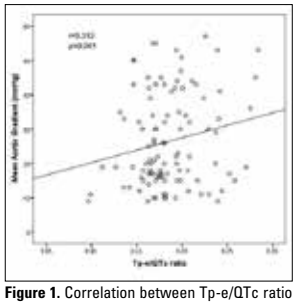
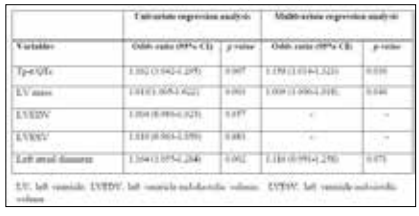


Figure 1. Correlation between Tp-e/QTc ratio and m.aort grad

Table 1. Univariate and multivariate logistic regression



Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-225

Comparative follow-up results of novel oral anticoagulants in daily practice

İsmail Polat Canbolat[1], Erdal Belen[2], Ümit Yaşar Sinan[3], Murat Başkurt[1]

[1]İstanbul Bilim University, Florence Nightingale Hospital, İstanbul
[2]Okmeydanı Training and Researc Hospital, İstanbul
[3]İstanbul University Institute of Cardiology, İstanbul

Introduction: Novel anticoagulants (NOACs) are widely used in daily practice, but there are concerns about their effectiveness and adverse events. We followed patients using dabigatran or rivoraxaban to compare their effectiveness and adverse events.
Materials and Method: Our study included patients using NOACs applying to our outpatient clinic consecutively. Physical examination was performed, patient history, electrocardiogram and biochemical results were collected. Bleeding and ischemic stroke risk scores (HAS-BLED and CHA2DS2-VASc scores) were calculated. Patients were followed for adverse events.
Results: The study consisted of 174 patients (dabigatran 113 patients, rivoraxaban 61 patients) with a mean age of 70,7±8,8 years. Patients were followed for 12,89±2,36 months. General characteristics and adverse events are given at Table-1 and Table-2. Patients using rivoraxaban had significantly higher HAS-BLED score than patients using dabigatran (p=0,004). Adverse events were non-significant between rivoraxaban and dabigatran using patients (p>0,05 for each).
Discussion and Conclusion: Bleeding and ischemic stroke are rare among all the patients. Non is greater than other for preventing stroke. Rivoraxaban can be a better option in the patients with high HAS-BLED score for avoiding bleeding.

Table 1

General characteristics	Dabigatran (N=113)	Rivoraxaban (N=61)	p
Age (years, mean±SD)	69,91±9,14	72,24±8,24	NS
HAS-BLED (mean±SD)	1,60±0,85	2,01±0,95	0,004
CHA2DS2-VASc (mean±SD)	3,60±1,30	3,90±1,22	NS
CVD (N)	26	21	NS
HT (N)	83	44	NS
DM (N)	8	6	NS
CAD (N)	25	16	NS

CVD: Cerebrovascular disease, HT: Hypertension, DM: Diabetes mellitus, CAD: Coronary artery disease, N: number

Table 2

Adverse Events	Dabigatran (N=113)	Rivoraxaban (N=61)	p
Minor Bleeding (N)	6	6	NS
Gastrointestinal Bleeding (N)	1	1	NS
Intracranial Bleeding (N)	1	1	NS
Ischemic Stroke (N)	5	2	NS

N: number

Arrhythmia / Electrophysiology / Pacemaker / CRT-ICD

PP-226

Does sudden cardiac death risk increases in patients with Turner syndrome?

Adem Atıcı, Ahmet Demirkıran, Cafer Panç, Remzi Sarıkaya, Onur Erdoğan, Nail Güven Serbest, Ali Elitok, İmran Önür, Hüseyin Oflaz

İstanbul University, İstanbul Medical Faculty, İstanbul

Introduction: Turner's syndrome (TS) is caused by deletion of an X chromosome, occurring in 1 in 2000 live born females. Cardiovascular malformations are well known, but limited data exist on specific electrocardiogram (ECG) patterns. Tp-Te interval have emerged as novel ECG markers of increased dispersion of ventricular repolarization. The aim of this study was to evaluate ventricular repolarization by using Tp-Te interval and compare with QT and corrected QT interval in patients with TS.
Materials and Method: 28 patients that have been diagnosed with TS and 30 healthy girls have been prospectively included in this study. We evaluated the non-corrected QT interval dispersion (QTD) and the corrected QT (QTc) dispersion and measured Tp-Te interval dispersion of 28 TS patients [mean age (±SD): 14,39±5,03 years; mean height (±SD): 138,96±14,92] and compared to age-matched control groups of 30 girls [mean age: 13,17±2,85 years; mean height (±SD): 152,86±15,75]. Patients with congenital cardiac heart defects, consumption of cigarette and alcohol and any other additional disease were excluded. Besides, p<0.05 was considered as statistically significant. All patients enrolled after written informed consent was obtained from all patients.
Results: QT intervals were similar in both groups. Patients with TS had significantly longer QTc dispersion (408,35±24,77 s versus. 390,93±13,45 s; p=0.01), Tp-Te dispersion (59,53±4,65±0.054 versus 56,66±6,14; p=0.025) and higher mean heart rate (99,38±20,04 s versus 83,55±10,33 s; p<0.01).
Discussion and Conclusion: The corrected QT interval and the Tp-Te dispersion significantly increased in the patients with TS, which has been correlated to an increased risk for ventricular tachycardia and sudden cardiac death. This should be taken into account for the cardiovascular screening and not to prescribe QT-prolonging drugs to patients with TS. However further study is needed to determine whether repolarization abnormalities significantly contributes to the life threatening risk in TS.

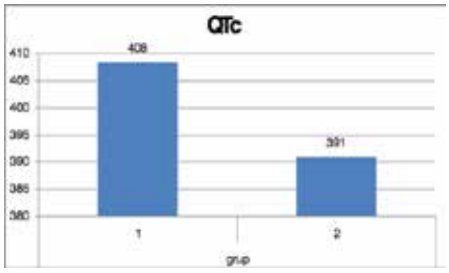


Figure 1. Corrected QT statistics. Group 1: Turner Syndrome; Group 2: Control

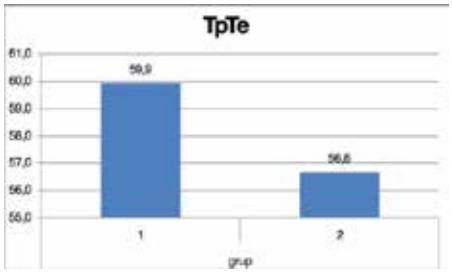


Figure 2. Tp - Te statistic. Group 1: Turner Syndrome; Group 2: Control

Congenital heart diseases

PP-227

Isovolumic contraction acceleration before and after percutaneous closure of atrial septal defects

Aydın Rodi Tosu[1], Özgür Gürsu[2], Ömer Çelik[1], Derya Öztürk[1], Mehmet Ertürk[1]

[1]İstanbul Mehmet Akif Ersoy Training and Research Hospital, İstanbul
[2]Van Yüksek İhtisas Hospital, Van

Introduction: To compare systemic right ventricular function by isovolumic myocardial acceleration before and 6 months after the percutaneous closure of atrial septal defects (ASD).
Materials and Method: Patients admitted to our tertiary center for the percutaneous closure of atrial septal defects between January 2010 and August 2012 constituted the study group. Right ventricular function of patients was assessed by tissue Doppler echocardiography before and after surgery. Echocardiographic data in patients were compared to age-matched controls without any cardiac pathology and studied in identical fashion mentioned belo.
Results: A total of 44 patients (24 males, 20 females) and 44 age-matched controls (25 males, 19 females) met the eligibility criteria for the study. Right ventricular end-diastolic and end-systolic volume, right ventricular end-diastolic diameter measurements on echocardiogram, and pulmonary artery pressures in both pre- and post-ASD groups were significantly higher than in controls. Tricuspid annular plane systolic excursion and isovolumic myocardial acceleration measurements significantly increased after the percutaneous closure of the defect; however, post-ASD measurements were still significantly lower than the controls.
Discussion and Conclusion: Atrial septal defect device closure resulted in a significant increase of isovolumic myocardial acceleration measurements. Tissue Doppler analysis of regional myocardial function offers new insight into myocardial compensatory mechanisms for acute and chronic volume overload of both ventricles.

Congenital heart diseases

PP-228

Assessment of cardiac adaptations along with NTproBNP levels after percutaneous closure of atrial septal defect

Barış Kılıçaslan[1], Ahmet Sayın[1], Hatice Solmaz[1], Nihan Kahya Eren[2], İbrahim Susam[1], Öner Özdoğan[1]

[1]İzmir Tepecik Research and Training Hospital, İzmir
[2]İzmir Katip Celebi University Medical School, İzmir

Introduction: We aimed to evaluate the early effects of transcatheter closure of secundum atrial septal defect (ASD) on both atrial and ventricle diameters and functions by transthoracic echocardiography (TTE) and to assess the correlations with N-terminal pro-brain natriuretic peptide (NTproBNP) levels.
Materials and Method: Twenty-two patients with secundum type ASD referred for percutaneous closure and 22 healthy subjects as a control group were included the study. TTE and concurrent blood sampling were performed prior, 24 hours and 30 days after the closure procedure.
Results: At follow up; 24 hours and 30 days after the closure right atrial (RA) areas, right ventricular (RV) areas, RV end-diastolic volumes (EDVs), RV end-systolic volumes (ESVs) were decreased on the other hand LVEDV, LVESVs and LVSVs were increased. Global RV systolic and diastolic function indices such as TAPSE, Tricuspid E/A ratios, Tricuspid E/e' ratios were immediately decreased after the closure. NT-proBNP values were increased in 24 hours following closure and after 30 days it was still higher than the values measured before the transcatheter closure. LV structural and functional parameters were significantly correlated with these NT-ProBNP values. (LVEDV (r=0.37; p=0.02), LVESV (r=0.38; p=0.01), LA area (r=0.46; p=0.002), Mitral E/e'(r=0.28; p=0.04).
Discussion and Conclusion: Percutaneous ASD closure could lead to both early and sustained changes in cardiac anatomy and functions involving both sides of the heart. NT-proBNP levels increase in 24 hours and notably 30 days after the percutaneous ASD closure which is associated with increased LV diameters and volumes.

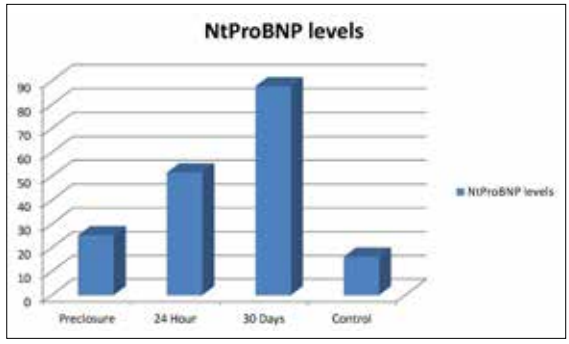


Figure 1. Comparison of NT Pro-BNP levels

Congenital heart diseases

PP-229

Assessment of right ventricular diastolic and systolic functions in patients with atrial septal defects before and after surgical closure

Ali Birant, Ender Öner, Ahmet Arif Yalçın, Özgür Akgül, Mehmet Ertürk, Ömer Çelik, Aydın Yıldırım

İstanbul Mehmet Akif Ersoy Training and Research Hospital, İstanbul

Introduction: To investigate the impacts of surgical closure of secundum atrial septal defect (ASD) on right ventricular (RV) functions in adults.
Materials and Method: Patients undergoing surgical closure of ASD between June 2009 and June 2013 had 3 sequential echocardiograms reviewed: pre-procedure, immediate post-procedure (in 48 hours) and 6 months post-procedure. Normally distrubuted measures are evaluated with repeated measures and then with paired t-test. Anormally distrubuted measures are evaluated with Friedman test and then with Wilcoxon test.
Results: 156 echocardiograms in 52 consecutive patients were included. Remodeling of right ventricle occurred immediately following ASD closure and sustained. Significant shrinkage detected in right heart chambers, and this shrinkage sustained to 6. month. Also significant changes detected in parameters showing right ventricular functions. After procedure TAPSE decreased 52.3%, 6. month after procedure increased 14.7% compared to immediate post procedure. Isovolumic acceleration was 2.97 before procedure, it decreased 35.1% to 1.93 at immediate post-procedure measurements and decrease continued for 6 months. Similarly myocardial performance index was 0.53 before procedure, it increased 94.3% to 1.03, at 6. month with a little improvement decreased to 0.82.
Discussion and Conclusion: Surgical closure of ASD makes significant changes in the early period and this changes sustaines in the long term.

Other

PP-230

Effect of exercise based cardiac rehabilitation on heart rate variability and turbulance in patients with ST elevation myocardial infarction

İsmet Zengin, Hasan Arı, Alper Karakuş, İbrahim Aktaş, Sencer Camcı, Mustafa Kınık, Berat Uğuz, Burcu Çavlan, Ahmet Tütüncü, Selma Arı, Mehmet Melek

Bursa Yüksek İhtisas Training and Research Hospital, Bursa

Introduction: The purpose of this study to evaluate the effect of exercise based cardiac rehabilitation on Heart Rate Variability (HRV) and Turbulance (HRT) in patients with ST Elevation Myocardial Infarction (STEMI) treated by primary Percutaneous Coronary Intervention (PCI).
Materials and Method: Our study included 101 patients who had been undergone to primary PCI with STEMI. 68 of these patients were randomised to cardiac rehabilitation group (group 1) and 33 of them to control group (group 2). 1 mount after primary PCI cardiac rehabilitation was applied to group 1 with cycle ergometer for 8 weeks (30 seance). 1 month after STEMI, rhytm holter monitorization was applied both of groups for 48 hours. Rhytm holter monitorization for 48 hours was repeated to group 1 after cardiac rehabilitation. HRV was evaluated according to time and frequency domain, HRT was evaluated with TO (turbulance onset) and TS (turbulance slope) parametres from holter records.
Results: Baseline characteristics of group 1 and group 2 were similar. Baseline HRV and HRT parameters were similar in both groups. There were no statistically significant differences among any of the HRV and HRT parameters obtained before and after cardiac rehabilitation in group 1 (Table 1). According to subgroup analyses (ejection fraction lower or higher 40%) we showed that TO parameter was improve with cardiac rehabilitation in lower ejection fraction group (Figure 1).

Discussion and Conclusion: Our results reveal that, exercise-based cardiac rehabilitation does not effect HRV and HRT parameters in patients whose ejection fraction was mildly effected after treated by primary PCI due to STEMI. However cardiac rehabilitation improves TO parameter in patients with low ejection fraction.

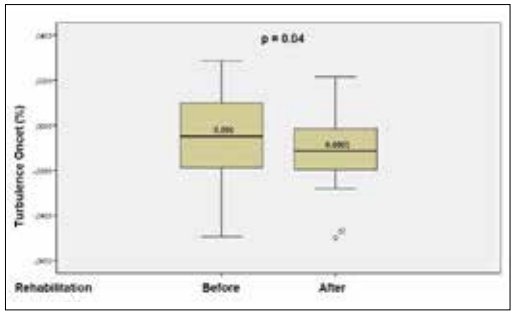


Figure 1. TO value in patients with low ejection fraction.

Table 1. HRV and HRT parameters

	Rehabilitation Before (n=68)	Rehabilitation After (n=68)	P Value
HR (ppm)	66.3±8.09	66.9±7.50	0.52
HRV freqency domain analysis			
TP (ms^2)	7133.6±1257.8	5183.0±1220.8	0.88
LF (ms^2)	1964.1±400.0	1376.4±411.7	0.84
LF (nu)	20.9±21.7	21.7±8.0	0.28
HF (ms^2)	1734.2±423.5	1139.0±511.4	0.82
HF (nu)	12.1±11.6	11.0±9.4	0.87
LF/HF oranı	2.9±2.1	3.2±2.4	0.51
HRV time domain analysis			
SDNN (ms)	71.8±51.8	63.5±28.9	0.69
SADNN (ms)	103.7±35.0	102.7±28.1	0.95
rMSSD (ms)	70.8±8.7	52.9±5.6	0.63
pNN50 (%)	9.2±8.1	8.0±7.2	0.96
HRT parameter			
TO (%)	-0.0089±0.002	-0.0077±0.002	0.72
TS (ms/RR)	9.6±8.3	7.3±6.4	0.26

HR: Heart rate, HRV: Heart rate variability, HRT: Heart rate turbulance, TO: Turbulence oncet, TS: Turbulence slope

Other

PP-231

Design and rationale of Dabigatran's stroke prevention in real life in Turkey (D-SPIRIT)

Uğur Önsel Türk[1], Emin Alioğlu[2], Cihan Altın[3], Ömer Çağlıyan[4], Nurullah Çetin[5], Onur Dalgıç[6], Nazile Bilgin Doğan[7], Selim Ekici[7], Barış Kılıçarslan[8], Tolga Özdemirkıran[9], Öner Özdoğan[8], Emre Özpelit[9], Nihat Pekel[9], İstemihan Tengiz[9], Necmi Özen[3], Caner Topaloğlu[5], Eşref Tunçer[2], Yasemin Turan[3], Kamil Tülüce[5]

[1]Ege University ARGEFAR, İzmir
[2]Central Hospital, İzmir
[3]Zübeyde Hanım Research and Practice Hospital, Faculty of Medicine, Başkent University, İzmir
[4]Aliağa State Hospital, İzmir
[5]Karşıyaka State Hospital, İzmir
[6]Bornova State Hospital, İzmir
[7]Menemen State Hospital, İzmir
[8]Tepecik Training and Research Hospital, İzmir
[9]İzmir University School of Medicine, İzmir

Introduction: Dabigatran etexilate is first NOAC that was approved by authorities and reimbursed by the major health insurance provider in Turkey. However there is no any prospective real life data about its safety and efficacy in patients with AF. D-SPIRIT registry is designed to investigate safety and efficacy of dabigatran etexilate in patients with nonvalvular AF (NVAF) and to collect data on outcomes in clinical practice.
Materials and Method: The D-SPIRIT is a national, prospective, observational, post-marketing registry involving patients with NVAF who already taking dabigatran etexilate therapy for stroke prevention minimum 6 months before enrollment. The registry will collect and analyze data from routine care, enrolling up to 600 patients in 9 centres. Patients will be followed up for 2 years to evaluate its effectiveness and safety. Sample size of 600 subjects are proposed based on the following assumptions; Two-sided significance level of 0.05 (1-sided significance level of 0.025), incidence rate of ischemic stroke is 0.768%-1.111%, incidence rate of hemorrhagic stroke is 0.109%-0.130%, incidence rate of transient ischemic attack is 0.722%-0.623%, incidence rate of therapy discontinuation is 40% at day 730, the duration of enrollment period is 12 months with non-uniformed enrollment rate. A comprehensive plan has been developed to monitor the quality of data entered into the CRFs and electronic database during the course of the program, with multiple edit checks, data quality review. Ethics approval was given by Dokuz Eylul University Ethics Committee of Clinical Research (2014/54) and approved by Turkish Ministry of Health.
Results: Potential results of D-SPIRIT registry will add data from clinical practice to those from RELY trial to expand knowledge of dabigatran etexilate treatment in patients with NVAF. The results will inform future decisions and enhance understanding of public health aspects of this highly prevalent condition.
Discussion and Conclusion: The D-SPIRIT registry is sponsored by Ege University ARGEFAR.

Other

PP-232

Assessment of the acceptance level of illness and quality of life in patients with coronary bypass operation in the first year

Muhammet Gürdoğan[1], Eylem Paslı Gürdoğan[2], Sinem Özbay Özyılmaz[3], Burak Açar[4], Derya Öztürk[3], Mehmet Ertürk[3], Hasan Arı[5]

[1]Lüleburgaz Common Health and Safety Unit, Kırklareli
[2]Trakya University, Health Science Faculty, Edirne
[3]Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, İstanbul
[4]Türkiye Yüksek İhtisas Training and Research Hospital, Ankara
[5]Bursa Yüksek İhtisas Training and Research Hospital, Bursa

Introduction: Today, one of the major causes of morbidity and mortality is coronary artery disease. Coronary bypass operation is an effective option in the treatment of this life-threatening disease. This stiuation affects patient' quality of life significantly. Assessment of the quality of life and acceptance level of illness will be an important guide in determination of patient care requirements. The purpose of the study was to determine the quality of life, acceptance level of illness and influencing factors in patients which was the first year after coronary bypass operation.
Materials and Method: The study was planned as descriptive and cross-sectional. It was carried out in a hospital in İstanbul. The sample of the study was patients, which apply to the cardiology clinics and in the first year of the coronary bypass operation. Data were collected with patient information form, which was consist of patients' sociodemographic characteristics, "The scale of acceptance level of illness" and " Turkish version of The World Health Organization Quality of Life Scale Short Form". The SPSS for Windows 21.0 program was used to evaluate data. Percantage, means, student t test, Anova were used in the evaluation of data. The correlation between the acceptance level of illness and quality of life was evaluated by Pearson correlation analysis. The significance level was accepted as p<0.05.
Results: The mean age of the patients who participated in the study was 58.59±8.55. 60.7% of the patients were male, 53.3% of them were graduated in primary school and 41.8% of the patients were lived with their wife/husband. 32.8% of the patients had three-vessel coronary bypass surgery and 32.8% had bypass surgery 10-12 months ago. The patients indicated that their income level was moderate. 55.7% of the patients' indicated high level of family support in their care. The mean acceptance level of illness score was calculated 27.27±6.76, and the mean quality of life score was 92.38±13.98. There were significant differences between the acceptance of illness scores with patients' incomes level (F=3.411; p=.036) and people lived together with patients (F=3.767; p=.013). A significant difference was found between the quality of life scores and the support they received from people lived together (F=4.855; p=.009). There were positive correlations between the acceptance level of illness and the quality of life scores (92.38±13.98).
Discussion and Conclusion: The quality of life scores of the patients which was in the first year of the coronary bypass operation was found to be above the average. As the patients' acceptance level of illness scores increased, so did their quality of life scores. People support lived with patients were increased patients' acceptance level of illness and quality of life. Therefore, not only operated patients but also people which are living with patients should be trained in the cardiac reahabilitation program. This stiuation draws attention to the importance of holistic approach in the treatme.

Other

PP-233

The relationship between inlammatory markers and body mass index

Burcu Uludağ[1], Yusuf İzzettin Alihanoğlu[2], İsmail Doğu Kılıç[2]

[1]Nusaybin State Hospital, Mardin
[2]Pamukkale University Faculty of Medicine, Denizli

Introduction: The aim of this study is to investigate the relationship between obesity and inflammatory markers.
Materials and Method: Totally 176 patients were enrolled to the study and it was divided into four groups as 57 morbid obese, 52 obese, 37 overweight ones and 30 controls. All cases of HOMA-IR values were calculated, hs-CRP and lipoprotein (a) values were studied.
Results: The characteristics of the participants are summarized in Table 1. hs-CRP and Lp (a) measurements were made in all patients to evaluate inflammatory status and statistically significant difference was found between groups (Table 2). Positive correlations were detected between hs-CRP and body mass index, waist circumference and HOMA-IR values. While positive correlations were seen between lipoprotein (a) and age, body mass index, waist circumference, HOMA-IR, total cholesterol, LDL cholesterol and trygliseride levels, a negative correlation was found between lipoprotein (a) and HDL cholesterol levels.
Discussion and Conclusion: Our study demonstrates a correlation between the inflammatory markers and increasing body mass index. And also hs-CRP and lipoprotein (a) levels were found to be significantly higher in both obese and morbid obese ones.

Table 1. The characteristics of the participants

	Normal	Overweight	Obese	Morbid Obese	p value
Age	34,47 ± 8,14	48,14 ± 15,11	45,24 ±15,72	38,44 ± 11,92	0.0001*
BMI(kg/m²)	22,09 ± 2,18	27,48 ± 1,26	34,2 ± 2,79	46,56 ± 5,89	0.0001*
Waist Circumference (cm)	82,8 ± 7,2	99,61 ± 6,83	112,88 ± 7,2	134,11 ± 14,01	0.0001*
Homa-IR	2,03 ± 1,38	2,7 ± 2,3	3,88 ± 2,62	4,12 ± 3,11	0.0001*
Total cholesterol (mg/dl)	175,17 ± 33,98	195,38 ± 36,37	190,81 ± 31,23	189,61 ± 30,24	0.075
LDL-C (mg/dl)	100,47 ± 30,02	114,54 ± 37,32	116,56 ± 26,93	114,47 ± 27,16	0.039*
HDL-C(mg/dl)	57,27 ± 12,97	49,78 ± 14,7	45,84 ± 11,34	46,07 ± 9,71	0.0001*
Triglyceride (mg/dl)	86,93 ± 43,62	160,27 ± 108,11	151,5 ± 68,39	145,02 ± 71,42	0.0001*

Table 2. Inflammation difference between groups

	Normal (n:30)	Overweight (n:37)	Obese (n:52)	Morbid obese (n:57)	p value
hs-crp	0,09 ±0,06	0,91 ±1,3	1,34 ±1,31	2,01 ±1,21	0.0001
Lp(a)	26,56 ±5,22	54,32 ±12,37	55,92 ±5,94	55,84 ±8,5	0.0001

Other

PP-234

Effects of sex steroid hormones on inflammation, oxidative parameters, and aortic stiffness

Musluhittin Emre Erkuş[1], İbrahim Halil Altıparmak[1], Emin Savik[1], Abdullah Taskin[1], Recep Demirbağ[1], Yusuf Sezen[1], Nurten Aksoy[1], Eyyüp Tosun[2]

[1]Harran University Faculty of Medicine, Şanlıurfa
[2]Şanlıurfa Training and Research Hospital, Şanlıurfa

Introduction: Sex hormones play important role in arterial stiffness and they are independent predictors of cardiovascular outcomes in both male and female. Aortic augmentation index (AIX) and pulse wave velocity (PWV) are used for assessment of aortic stiffness (AS). However, there is no available data concerning to mechanism of AS. The aim of the study is to investigate whether a relationship between sex steroid hormones and inflammation, oxidative parameters, and AS is present.
Materials and Method: Seventy healthy male (mean age 34±9 years; 20 to 51 years) and thirty-five healthy postpubertal and premenopausal female subjects (mean age 34±7 years; 22 to 47 years) were included in the study. Arterial stiffness parameters including aortic pulse wave velocity (PWV) and aortic augmentation index (AIX) were evaluated in each patient by using by tensioMedTM Arteriograph. High-sensitivity C-reactive protein (hs-CRP), pentraxin-3(PTX3), plasminogen activator inhibitor-1(PAI-1), ceruloplasmine, adiponectin, leptin, omentin, resistin, total antioxidant capacity (TAC), total oxidant status (TOS), oxidative stress index (OSI), estradiol, testosterone and progesterone were measured using the enzyme-linked immunosorbent assay system based on a monoclonal antibody to humans.
Results: The age, body mass index, systolic and diastolic blood pressure were similar between both sexes (all of p>0.05). Estradiol, testosterone and progesterone values were significantly different between male and female subjects (all of p<0.001). Testosterone levels had a significant negative correlation with AIX adjusting to75 bpm, ceruloplasmine, OSI, omentin, and leptin, and a positive correlation with TAC, uric acid, albumin (all of p<0.05). Estradiol and progesterone were positively correlated with AuIx75 and negatively correlated with uric acid. Multiple linear regression analysis showed that uric acid and ceruloplasmine were independently associated with testosterone in all participants (β=0.497, p<0.001 vs. β=-0.247, p=0.030 respectively).
Discussion and Conclusion: This study indicates that testosterone is more positively associated with inflammation, oxidative and AS parameters than estradiol and progesterone in middle aged healthy men and women.

Other

PP-235

There is no relationship between coronary collateral development with serum γ-glutamyltransferase and uric asid levels

Sebahat Tekeli Şengül[1], Özcan Özeke[2], Hüseyin Ayhan[3], Erol Kalender[2], Hatice Şaşmaz[2]

[1]Gazi Mustafa Kemal Hospital, Ankara
[2]Türkiye Yüksek İhtisas Hospital, Ankara
[3]Ankara Atatürk Education and Research Hospital, Ankara

Introduction: In this study, we aimed to evaluate the relationship between clinical and angiographic variables associated with collateral development in patients with advanced coronary artery disease.
Materials and Method: The study population consisted of 216 patients (176 men, mean age 62,8±9,6) were selected from a large group of patients scheduled for routine coronary angiography between February 2011 and May 2012. All patients in the study had at least one major epicardial coronary artery with complete occlusion or stenosis of >95% or higher. The coronary collateral development was graded according to the Rentrop scoring system. Rentrop grade 0 and 1 were accepted as poor coronary collateral development (CCD) (Group I), while Rentrop grades 2 and 3 were accepted as good CCD (Group II).
Results: One hundred thirty six patients (67%) had good CCD, and 80 patients (33%) had poor CCD. The two groups were similar with respect to age, sex, risk factors, medications and smoking. Patients in group II showed higher rate of multivessel disease and high Gensini score (p<0.001). There were no significant differences between subjects with poor and good CCD groups in terms of serum GGT (27,4±15,7 to 27,4±14,2 p=0,969) and uric acid levels (5,8±1,67 to 5,8±1,68 p=0,888). In multivariate regression analysis showed that the number of significantly diseased coronary arteries independent parameter of good collateral circulation (OR: 1,71, 95% CI : 1,11- 2,65, p:0,01).
Discussion and Conclusion: Unlike with previous studies our study showed no association between CCD with GGT and uric acid levels.

Table 1. Relation between presence of coronary collaterals

	All(n=216	Group1(n=80)	Group2(n=136)	p
Age	62,8±9,6 6	62,5±9,2	62,9±9,8	0,812
Smoking	66(%30.6)	19(%23,8)	47(%34,6)	0.096
GGT	27.4±14.79	27.4±15.79	27.4±14.23	0.969
Uric Acid(mg/dl)	5.8±1.67	5.8±1.67	5.8±1.68	0.888
Gensini Score	54(14-165)	43.5(14-115)	59.5(22-165)	0.001
diseased coronary arteries				0.001
1 vessel	60(%27,7)	33 (%41,3)	27 (%19,9)	
2 vessels	82(%38,0)	31 (%38,8)	51 (%37,5)	
3 vessels	74(%34,3)	16 (%20,0)	58 (%42,6)	

Other

PP-236

Rivaroxaban in chronic atrial fibrillation

Gaukhar Igimbayeva

Karankada University Hospital, Karankada Khazakistan

Introduction: The atrial fibrillation (AF) is an important independent risk factor of thromboembolic complications. Therefore anticoagulant therapy is necessary for prevention of ischemic events in all forms of AF.during EINSTEIN-PE research for prevention of venous tromboembolism, use of an oral anticoagulant rivaroxaban (Xarelto), a high-selective direct inhibitor of X factor plays the central role in coagulation cascade. So, the goal of this programme is determination of compliance to the established profile and safety of Xarelto in routine clinical practic for patients with non valvular AF during the observed 6months period within the research named XANTUS-XL.
Materials and Method: During observed period (6 months),we involved 56 patients with non-valvular AF. They were evaluated according to the approved protocol of AF. There were 33 men and 23 women. The ages were 54 to 69 years. The mean age was 61 year, average height and body weight were 174,2±3,5 cm and 78,1±2,1 kg. According to CHA_2DS_2Vasc scale the average mark coefficient made 2,5, that is the indication for carrying out oral anticoagulant therapy. On HAS-BLED scale the average mark coefficient made 1, that represents low risk of bleedings. Xarelto's preparation applied in a dose 20 mg per day from the moment of arrival of the patient to hospital. In all patients laboratory analyses carried out at the first visit of physician and continued for 3 months after discharge. All routine blood tests and coagulogram (including PT, INR and PTT) monitored. 25% of patients were on acetilsalicylic acid, and 75% of patients were on amiodaron therapy.
Results: patients on Xarelto had not bleeding during treatment in hospital and in out of hospital.Good tolerance was shown in all patients.in patients with mild renal failure,partial protrombin time (PTT) increased by 1.3 times. Mean INR levels reached from 2,0 to 2,65; 3 patients had symptoms of anemia – Hb's level to 107 g/l, erythrocytes – to 3,5x1012/l, and in biochemical blood tests,activity of serum transaminases were normal.
Discussion and Conclusion: Xarelto (rivaroxaban) 20 mg per day has established safety profile in routine clinical practice during the observed six months period.

AUTHOR INDEX

A

B

C

Ç

D

E

F

G

H

I

İ

J

K

L

M

N

O

Ö

P

Q

R

S

Ş

T

U

Ü

V

Y

Z