country the genetic testing for SCN5A and HCN4 is not available. When we look at the national literature about this topic, we have found out only a case report about familial SSS suggesting autosomal dominant inheritance in two siblings whereas parents and other siblings showed no evidence of sinus node disorder (5). Finally, the presence of the familial form of SSS should be considered and detailed family history should be screened in such a patient with SSS.

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doi:10.5152/akd.2013.248

Awareness about preventable cardiovascular risk factors of students attending Faculties of Nursing and Literature

Hemşirelik ve Edebiyat Fakültesi öğrencilerinin önlenebilir kardiyovasküler risk faktörleri ile ilgili farkındalıkları

To the Editor,

In 2012 report, The American Heart Association (AHA) highlighted an increased risk levels from cigarette smoking, physical inactivity, unbalanced body mass index and unhealthy nutrition habits in adults over the age of 20 (1). Therefore, in this study, the objective is to define the level of knowledge about preventable cardiovascular risk factors and the level of awareness about individual risk factors for undergraduate level students in the Faculties of Nursing and Letters of a İstanbul University.

The study was carried out between October 2011 and February 2012. The participants were first and third class students from the faculty of nursing and letters. The participation of students in the study was voluntary. Data was organized using individual knowledge form and "Cardiovascular Disease Risk Factors Knowledge Level (CARRF-KL) Scale" (2). Of the 900 participants, 63.8% were female and 36.2% were male. The mean age was 21.12±3.69. Overall 19% of the participants were from the faculty of nursing while 81% were from the faculty of letters. 56.4% of the participants were first class and 43.6% were third class. In our study, we found that, among the participants from the faculty of letters, there were higher risk levels as indicated by waist circumference and body mass index (BMI) measurements, tobacco smoking and alcohol usage rates, preference for higher consumptions of hamburgers, French fries, saturated fat meals, margarine, and salt.

As can be seen in Table 1, among participants from the faculty of nursing we found a desired level of physical activity, healthy diet, and low sodium consumption ($p<0.05$).

In studies where participants were university students, the rates of smoking and alcohol usage and physical inactivity were high; however, the rates of smoking and alcohol usage by nursing and medical students were very low and they also had a desired level of physical activity (3, 4). Physical inactivity is a global health problem causing the deaths of more than 2 million people each year. The World Health Organization, has recommended that individuals must have a daily regimen consisting of medium to intense aerobic physical activity and resistance (muscle-strengthening) exercises for adults between the ages of 18-64 (5).

In this study, CARRF-KL scale "risk factors, risk behavior knowledge level" is higher for students who are tobacco/cigarette non-smokers and do not use alcohol ($p<0.05$) (Table 2). This situation reflects the relationship that exists between knowledge and lifestyle behaviors. As similar to our study, Metintaş et al. (6) also found higher CARRF-KL scale risk factor knowledge levels for students who are tobacco/cigarette non-smokers.

CARRF-KL total knowledge levels were also found higher for students who regularly exercise 30-45 minute/day, have a normal BMI and waist circumference ($p>0.05$), eat whole grains, low-fat, protein-rich, and low sodium meals ($p<0.05$) (Table 2). Metintaş et al. (6) also found lower cardiovascular risk factor knowledge level in students who were obese and physically inactive.

As a result of this study, awareness of nursing students about cardiovascular risk factors and risk behaviors such exercising, consuming less salt, eating healthy, and having a normal body mass index and waist circumference, was found to be higher.

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Table 1. The frequency of cardiovascular risk factors of students of faculty of nursing and letters (n=900)

Variables	FN* (n=171) % (n)	FL** (n=729) % (n)	Chi-square/p***
Tobacco/smoking/to exposure cigarette smoke			
Risk no	59.1 (101)	34.4 (251)	35.29
Risk yes	40.9 (70)	65.6 (478)	/ 0.000
Tobacco/cigarette smoking duration and amount			
Risk no	91.8 (157)	65.7 (479)	46.47
Risk yes	8.2 (14)	34.3 (250)	/ <0.0001
To use of alcohol			
Risk no	81.9 (140)	62.3 (454)	23.69
Risk yes	18.1 (31)	37.7 (275)	/ <0.0001
1-2 glass of wine, beer, raki/week			
Risk no	84.2 (144)	73.7 (537)	8.37
Risk yes	15.8 (27)	26.3 (192)	/ 0.004
3-5 glass of wine, beer, raki/week			
Risk no	98.2 (168)	83.7 (610)	25.09
Risk yes	1.8 (3)	16.3 (119)	/ <0.0001
To make physical activity/exercise more than 3 days/week			
Risk no	19.3 (33)	12.5 (91)	5.41
Risk yes	80.7 (138)	87.5 (638)	/ 0.02
To walk regularly			
Risk no	66.7 (114)	53.5 (390)	9.74
Risk yes	33.3 (57)	46.5 (339)	/ 0.002
Usually eats dinner outside			
Risk no	64.9 (111)	42.7 (311)	27.5
Risk yes	35.1 (60)	57.3 (418)	/ <0.0001
Usually eats dinner at school			
Risk no	9.4 (16)	4.9 (36)	4.96
Risk yes	90.6 (155)	95.1 (693)	/ 0.02
Body mass index >25 kg/m^2			
Risk no	92.9 (159)	81.5 (594)	14.45
Risk yes	7.0 (12)	18.5 (135)	/ 0.002
Measure waist circumference K>88 cm E>102 cm (risky)			
Risk no	90.6 (155)	81.6 (595)	8.12
Risk yes	9.4 (16)	18.4 (134)	/ 0.004
To prefer hamburger, French fries			
Risk no	40.4 (69)	29.6 (216)	7.35
Risk yes	59.6 (102)	70.4 (513)	/ <0.0001
To prefer baked foods like pastry, bagels, toast			
Risk no	56.1 (96)	40.3 (294)	14.10
Risk yes	43.9 (75)	59.7 (435)	/ >0.0001
To consume solid oil, margarine, butter, tail fat			
Risk no	86.0 (147)	69.3 (505)	19.33
Risk yes	14.0 (24)	30.7 (224)	/ <0.0001
Too much salt consumption			
Risk no	74.3 (127)	65.5 (477)	10.23
Risk yes	25.7 (44)	34.6 (252)	/ 0.006

Data are presented as percentage (number)
***Chi-square test,
*FN - faculty of nursing,
** FL - faculty of letters

Table 2. Scores and mean differences of CARRF-KL scale according to cardiovascular risk factors and demographic characteristics

		CARRF-CVD#	CARRF-RF##	CARRF-RB###	CARRF-T####
Girl (n=574)		2.2±1.00	10.4±3.06	5.7±1.74	18.5±4.72
Man (n=326)		2.4±10.03	9.4±3.14	5.2±1.59	17.1±4.64
		z*:-2.69 p∞:0.007	z*:-4.72 p∞:0.000	z*:-4.86 p∞:0.000	z*:-4.26 p∞:0.000
FNμ (n=171)		2.3±0.88	12.5±2.70	6.8±1.56	21.8±4.37
FLμμ (n:729)		2.3±1.04	9.5±2.94	5.2±1.59	17.1±4.37
		z*:-0.67 p∞:0.50	z*:-12.18 p∞:0.000	z*:-11.30 p∞:0.000	z*:-12.07 p∞:0.000
1st Class (n=508)		2.2±10.01	9.7±3.08	5.4±1.68	17.3±4.56
3rd Class (n=392)		2.4±1.00	10.6±3.12	5.8±1.71	18.8±4.83
		z*:-4.13 p∞:0.000	z*:-4.08 p∞:0.000	z*:-3.01 p∞:0.003	z*:-4.47 p∞:0.000
Tobacco/smoking/to exposure cigarette smoke	Yes	2.4±1.02	9.8±3.15	5.3±1.70	17.6±4.72
	No	2.1±0.98	10.5±3.04	5.8±1.68	18.5±4.72
		z*:-4.35 p∞:0.000	z*:-3.28 p∞:0.001	z*:-4.43 p∞:0.000	z*:-2.87 p∞:0.004
To use of alcohol	Yes	2.4±1.01	9.5±3.27	5.3±1.72	17.4±4.95
	No	2.2±1.01	10.3±3.04	5.6±1.70	18.2±4.64
		z*:-3.05 p∞:0.002	z*:-2.99 p∞:0.003	z*:-1.98 p∞:0.04	z*:-1.93 p∞:0.05
Fatty and cholesterol diet	Yes	2.5±0.99	10.4±3.04	5.8±1.77	18.8±4.47
	No	2.2±1.02	9.9±3.14	5.5±1.68	17.7±4.80
		z*:-3.05 p∞:0.002	z*:-2.26 p∞:0.02	z*:-2.48 p∞:0.01	z*:-2.92 p∞:0.003
Waist circumference	Normal	2.3±0.99	10.1±3.16	5.6±1.72	18.1±4.77
	Risky	2.3±1.14	9.7±2.93	5.4±1.61	17.5±4.56
	MD	z*:-0.21 p∞:0.22	z*:-1.59 p∞:0.11	z*:-1.18 p∞:0.23	z*:-1.22 p∞:0.22
Body mass index	Normal	2.3±0.99	10.1±3.15	5.5±1.72	18.1±4.79
	Obese	1.9±1.02	8.6±3.89	5.0±1.72	15.6±5.68
		χ^{2**}:4.99 p∞:0.28	χ^{2**}:7.34 p∞:0.11	χ^{2**}:5.55 p∞:0.23	χ^{2**}:5.74 p∞:0.21
To walk regularly	Yes	2.3±1.01	10.3±3.18	5.7±1.78	18.3±4.83
	No	2.3±1.02	9.8±3.04	5.3±1.58	17.5±4.58
		z*:-0.33 /0.73	z*:-2.51 p:0.01	z*:-4.10 /0.000	z*:-3.04 p:0.002
Daily exercise time	30-45 minutes/day	2.2±1.07	10.3±3.20	5.7±1.70	18.3±4.96
	More than 45 min./day	2.3±0.98	9.6±3.37	5.5±1.85	17.6±4.97
		χ^{2**}:0.47 p∞:0.79	χ^{2**}:2.26 p∞:0.32	χ^{2**}:0.92 p∞:0.63	χ^{2**}:1.82 p∞:0.40
Vegetables, whole grains and/ or fat-free, protein diet	No	2.2±0.85	9.9±3.01	5.5±1.84	17.7±5.01
	3-4/day	2.3±1.07	10.3±2.90	5.6±1.66	18.3±4.47
	Every day	2.3±0.85	11.7±3.16	6.4±1.83	20.5±5.00
		χ^{2**}:0.87 p∞:0.83	χ^{2**}:44.1 p∞:0.000	χ^{2**}:36.8 p∞:0.000	χ^{2**}:43.9 p∞:0.000
To choose low-salt and low-fat meals	Yes	2.3±0.98	10.5±3.06	5.8±1.69	18.6±4.69
	No	2.3±1.03	9.8±3.13	5.4±1.70	17.6±4.73
		z*:-0.33 p∞:0.74	z*:-3.48 p∞:0.000	z*:-3.70 p∞:0.000	z*:-3.46 p∞:0.001
Salt rate	Less salty	2.3±1.01	10.1±3.12	5.6±1.70	18.1±4.75
	More salty	2.3±1.04	9.9±3.14	5.4±1.72	17.7±4.73
		z*:-0.44 p∞:0.66	z*:-1.05 p∞:0.29	z*:-2.34 p∞:0.01	z*:-1.37 p∞:0.16
Often to eat hamburger, French fries etc.	Yes	2.3±1.04	9.7±3.15	5.3±1.70	17.4±4.71
	No	2.2±0.95	10.9±2.88	6.0±1.64	19.2±4.59
		z*:-2.15 p∞:0.03	z*:-5.86 p∞:0.000	z*:-5.12 p∞:0.000	z*:-5.12 p∞:0.000
To consume solid oil, margarine, butter, tail fat	Yes	2.4±1.05	9.1±3.27	5.3±1.67	16.9±4.93
	No	2.2±1.00	10.4±3.08	5.6±1.71	18.4±4.61
		z*:-2.53 p∞:0.01	z*:-5.24 p∞:0.000	z*:-2.45 p∞:0.01	z*:-3.77 p∞:0.000

Data are presented as mean±SD
*Mann-Whitney U **Kruskal Wallis Test ∞p - mean differences #CDRF-CVD - characteristics of cardiovascular diseases
##CDRF-RF - risk factors ###CDRF-RB - risk behaviors ####CDRF-T - total score μFN - faculty of nursing μμFL - faculty of letters

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Available Online Date/ Çevrimiçi Yayın Tarihi: 23.10.2013

doi:10.5152/akd.2013.249

Cardiohepatic interactions in heart failure

Kalp yetersizliğinde kardiyohepatik etkileşim

To the Editor,

Heart failure (HF) is a fatal and progressive disease, driven by cardiac dysfunction (1). The syndrome of HF is characterized by organ cross-talks, since, heart is central to hemodynamics of many organs both in the form of distributing the oxygenated blood and delivering deoxygenated blood in order to send it to lungs . Among many organ cross-talks in the syndrome of HF, interaction between heart and kidney is relatively well established and defined as "cardiorenal syndrome" (2). Hepatic involvement in the form of cardiohepatic interaction has also been described in patients with chronic HF (3, 4).

In the recent analysis of the SURVIVE database (5), cardiohepatic dysfunction was present in about a half of this cohort of patients with acute decompensated heart failure (ADHF). Furthermore, it seems liver function tests behave as surrogates of systemic hemodynamics. In the analysis, cholestasis associated biochemical markers were associated with signs of systemic congestion and elevated right-sided filling pressure, while biochemical markers of liver cytolysis were associated with clinical signs of hypoperfusion. Hence, there are two hypothetical modes of cardio-hepatic interaction proposed within the light of the recent paper: 1) in the form of either predominantly HF-induced cholestasis or 2) predominantly HF-induced liver cell cytolysis. In addition to these two discrete modes of involvements, cardiohepatic dysfunction was shown to be associated with poor long term outcome.

Elevated plasma alkaline phosphatase (AP), alone or in conjunction with abnormal transaminase levels was present in 20% of patients with ADHF at baseline. High basal AP levels were associated with systemic congestion and elevated right-sided filling pressure, including peripheral edema, ascites, tricuspid regurgitation and high plasma levels of creatinine and BNP. The results were confirmatory to the previous studies with pathophysiological background (3, 4). Although, the mechanism by which systemic congestion and elevated right-sided filling pressure causes release of biochemical markers of cholestasis remains uncertain, it is possible that in patients with ADHF, the markedly elevated right-sided filling pressure can possibly be transmitted to centrilobular liver sinusoids which could compress any collapsible structure within the lobule, including bile canaliculi and ductules (Fig. 1). Raised hydrostatic pressure in liver sinusoids can potentiate the compression along with enlargement of liver cells. Such pathophysiology could yield compression of bile ducts and change the direction of bile flow (including AP) towards the blood (5). Hence, AP stands as a biomarker of liver congestion and reflects the extent of right-sided filling pressure in ADHF patients. Along with this mechanism, elevated AP was not associated with poor short-term outcome in the study, since, decongestive therapy has the potential to decompress biliary tract and divert bile flow and hence causing normalization of AP without liver cell death.

In the study, a second discrete profile was characterized by elevated transaminase levels, which were associated with signs of hypoperfusion, including hypotension, tachycardia and cold extremities. Hepatic cytolysis, which yields elevations of alanine and aspartate transaminases (ALT/AST in the study), could potentially be driven by hypoperfusion and/or hypooxygenation of the liver cells of the centrilobular region ("nutmeg liver") that are known to be far away from the dual circulatory supply of the hepatic artery and portal veins. It seems liver ischemia, characterized by elevated liver enzymes, secondary to compromised perfusion, caused by rapid deterioration of cardiac function influenced the in-hospital outcome of the patients with ADHF negatively.

In conclusion, two discrete profiles of cardiohepatic interaction, identified in the study, seem to be critically important targets in order for physicians to tailor the therapy of patients with ADHF.

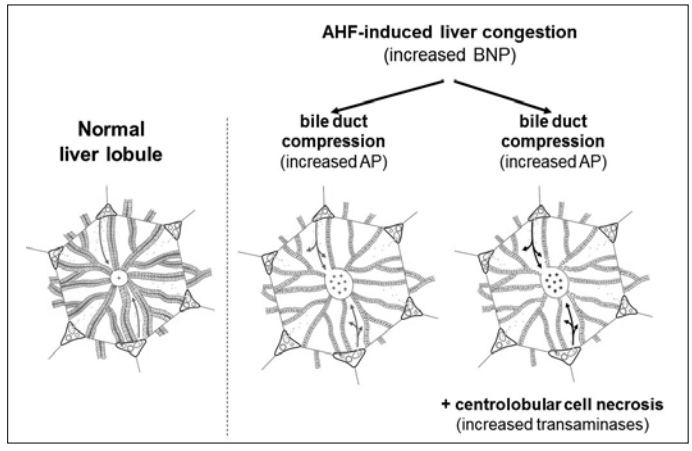

Figure 1. Hepatic microstructure
(Reproduced from Nikolau M, Parissis J, Yilmaz MB, Seronde MF, Kivikko M, Laribi S, et al. Liver function abnormalities, clinical profile, and outcome in acute decompensated heart failure. Eur Heart J 2013; 34: 742-9. with permission of Oxford University Press)