

## Knowledge and adherence to treatment in patients with poor or improved anticoagulation control

### *Antikoagülasyon kontrolü sağlanan ve sağlanmayan hastaların tedaviye ilişkin bilgi ve uyumları*

Warfarin is widely used for the treatment of thromboembolic cases. International Normalized Ratio (INR) control should be carried regularly to adjust the dose of warfarin. This is because excessive anticoagulation increases the risk of bleeding while inadequate anticoagulation increases the risk of thromboembolism (1). For this reason, it is vital that patients taking warfarin be informed about the reasons and importance for using this drug, the control of its impact, and the drug-drug and drug-nutrient interactions.

This study investigated the knowledge and adherence to treatment in patients who were given the anticoagulant drug-warfarin and who had poor or improved anticoagulation control. This cross-sectional observational study was conducted with 153 patients admitted to cardiology department of a university hospital between October 2009-March 2010. Data were collected with a "Questionnaire" and "Information Form". In statistical analysis, Mann-

**Table 1. The relationship between patients out and within therapeutic range and their socio-demographic and clinical characteristics**

Characteristics		Out of therapeutic range	Within therapeutic range	*p
Sex	Female	45 (51.7)	33 (50.0)	0.833
	Male	42 (48.3)	33 (50.0)	
Age, years	30-39	9 (10.3)	3 (4.5)	0.196
	40-49	12 (13.8)	15 (22.7)	
	50-59	18 (20.7)	18 (27.3)	
	60 or over	48 (55.2)	30 (45.5)	
Duration of drug use, years	0-1	27 (31.0)	6 (9.1)	0.004
	2-4	24 (27.6)	27 (40.9)	
	5 years or higher	36 (41.4)	33 (50.0)	
Place of drug therapy	University hospital	45 (51.7)	48 (72.7)	0.021
	Public hospital	9 (10.3)	6 (9.1)	
	Private hospital	33 (37.9)	12 (18.2)	
Knowledge of target INR value	Yes	42 (48.3)	30 (45.5)	0.729
	No	45 (51.7)	36 (54.5)	
Perceived current health	Good	45 (51.7)	33 (50.0)	0.108
	Moderate	30 (34.5)	30 (45.5)	
	Bad	12 (13.8)	3 (4.5)	
Problem experienced	Yes	75 (86.2)	57 (86.4)	0.978
	No	12 (13.8)	9 (13.6)	
Regular drug use	Yes	57 (65.5)	48 (72.5)	0.341
	No	30 (44.5)	18 (27.3)	
Regular INR control	Yes	66 (75.9)	57 (86.4)	0.105
	No	21 (24.1)	9 (13.6)	
Knowledge score		6 (5-7)	7 (3-9)	0.315

Data are presented as number (percentage) and median (range) values  
\*Mann-Whitney U and Chi-square tests

Whitney U, Kruskal Wallis, Chi-square test and descriptive statistics were used. A  $p \leq 0.05$  was considered significant.

Among the patients, 51% were female, the majority (86.3%) were married and the mean age was  $58.5 \pm 12.5$  years. Also, 54.9% of the patients reported mitral valve replacement, 31.4% used warfarin due to atrial fibrillation. The study found that 56.9% of the patients used the drug regularly, the majority (80.4%) had blood test regularly, and the INR value was within the therapeutic range for only 43.1%. The majority of the patients (68%) suffered minor problems due to warfarin use like skin bruising and bleeding in the nose and gums for no reason. Again, they significantly had major problems watery black stool / tea-colored urine (22%), temporary (27.5%) and permanent paralysis of one side (4.5%).

The patients' average score for knowledge about warfarin use was moderate  $[6.0 \pm 2.6 (0-11)]$ . The patients who were over 60, female, illiterate, just started the drug, lived in village, lived alone, and reported negative perception of family relationships had lower knowledge scores than the other groups ( $p < 0.05$ ). The majority had insufficient knowledge about duration of drug use (84.3%), smoking (76.5%), alcohol (70.6), and drug-drug (72.5%) and drug-diet interactions (54.9%). The study found no significant difference between patients with poor or improved anticoagulation control in terms of knowledge score of warfarin, regular drug use, blood test, and having problems ( $p > 0.05$ ) (Table 1). The patients had insufficient knowledge of the importance of blood tests and regular drug use, drug-drug and drug-nutrient interactions, and adherence to advice, which is compatible with other studies (2-5). However, in contrast to Rewiuk et al. (5), in our study, the knowledge and adherence of the patients with poor or improved anticoagulation control were similar.

In conclusion, the study found that the patients had major problems about the use of warfarin and moderate levels of knowledge about the drug and adherence to advice but there was no significant difference in terms drug use and adherence of the patients with poor or improved anticoagulation control. Our results indicate the necessity of developing interdisciplinary training strategies for patients using warfarin.

**Meral Altok, Funda Kuyurtar, Fatma Babalıklı\*, Semra Erdoğan\*\*  
Nursing of Internal Medicine, Health High School, \*Nursing of  
Department of Cardiology\*\*, Department of Biostatistics and  
Bioinformatics, Faculty of Medicine, Mersin University, Mersin-Turkey**

## References

- Çavuşoğlu Y. Ximelagatran cannot be an alternative to standard warfarin therapy in chronic atrial fibrillation/ antithrombotic therapy in atrial fibrillation with ximelagatran: can it be an alternative to warfarin? Anadolu Kardiyol Derg 2007;7:217-9.
- Hu A, Chow CM, Dao D, Errett L, Keith M. Factors Influencing patient knowledge of warfarin therapy after mechanical heart valve replacement. J Cardiovasc Nurs 2006;21:169-75.
- Mercan S, Enç N. Educational needs of patients with warfarin. Turk Soc Cardiol Turkish Journal of Cardiovascular Nursing 2011;1:12-7.
- McCabe PJ, Schad S, Hampton A, Holland DE. Knowledge and self-management behaviors of patients with recently detected atrial fibrillation. Heart Lung 2008;37:79-90. [CrossRef]
- Rewiuk K, Bednarz S, Faryan P, Grodzicki T. Knowledge of antithrombotic prophylaxis among patients with atrial fibrillation. Cardiol J 2007;14:44-9.

**Address for Correspondence/Yazışma Adresi:** Dr. Meral Altok  
Mersin Üniversitesi Sağlık Yüksekokulu, İç Hastalıkları Hemşireliği,  
Çiftlikköy Kampüsü 33169, Mersin-Türkiye  
Phone: +90 324 361 00 01 Fax: +90 324 361 05 71  
E-mail: meralgun2001@yahoo.com

**Available Online Date/Çevrimiçi Yayın Tarihi:** 18.09.2012

©Telif Hakkı 2012 AVES Yayıncılık Ltd. Şti. - Makale metnine [www.anakarder.com](http://www.anakarder.com) web sayfasından ulaşılabilir.

©Copyright 2012 by AVES Yayıncılık Ltd. - Available on-line at [www.anakarder.com](http://www.anakarder.com)  
doi:10.5152/akd.2012.233