

## Acil Servisten Akut Koroner Sendrom Nedeniyle Yatırılan Hastaların Birinci Derece Yakınlarının Kalp Hastalığı Bilirlik Düzeyleri: Anket Çalışması

*Emergency services First-Degree Relatives of patients admitted for acute coronary syndrome Heart Disease Recognition Levels: Questionnaire Study*

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### Özet

**Amaç:** Çalışmamızda, sağlık sektörü dışındaki genel popülasyonun miyokart enfarktüsü (MI) geçiren hastaların tanınması ve yapılması gereken ilk müdahale konusunda bilgi düzeyi ve yaklaşımlarını incelemeyi amaçladık.

**Yöntem:** Araştırmacılar tarafından, MI geçiren kişilerdeki klinik bulgular ile ilk müdahalede yapılması gerekenleri sorgulayan bir anket oluşturuldu ve 250 gönüllü kişi tarafından doldurulması sağlandı. Gönüllüler özellikle sağlık sektörü dışından seçildi.

**Bulgular:** Katılımcılara sorulan "Sizce hastalıklara bağlı en sık ölüm nedir" sorusuna kadınların %45.1'i kalp krizi, %47.2'si kanser derken aynı soruya erkeklerin ise % 63.9'u kalp krizi, %22.2'si kanser cevabı verdiler. Katılımcılara sorulan "Yalnız başınıza çevrenizde MI geçirdiğini düşündüğünüz biri ile karşılaşırsanız ne yaparsınız?" sorusuna %92.4'ü acil servisi arayacağını (kadınlarda %57, erkeklerde %40.7), %31,2'si hastanın bulunduğu odayı havalandıracağını (kadınlarda %31.7, erkeklerde %30.6), %20.4'ü hastaya aspirin vereceğini (kadınlarda %21.8, erkeklerde %18.5), %7.6'sı ise ne yapacağı konusunda bilgisi olmadığını ifade etti (kadınlarda %7.2, erkeklerde %4.3).

**Sonuç:** Bu çalışmanın sonucunda MI yaygınlığı ve mortalitesi konusunda özellikle kadınlarda farkındalığın daha az olduğu görülmüştür. MI'daki tipik bulgular konusunda göğüs ağrısı dışında diğer bulguların yeterince bilinmediği kanısına varılmıştır. MI ile karşılaşılacak bir durumda ise popülasyonun acil servisi arama dışında yapılması gerekenler konusunda yeterli bilgi seviyesine sahip olmadığı anlaşılmıştır. MI'ne müdahalede en önemli kısmı oluşturan tanı ve ilk müdahale konusunda toplum çapında yaygın eğitim programlarının uygulanması gerekli olduğunu düşünmekteyiz.

**Anahtar Kelimeler:** anjiyografi, HBsAg, anti-HCV, anti-HIV, sağlık personeli.

### Abstract

**Objective:** In this study, aimed to investigate the level of knowledge and approaches of the general population outside the health sector on the recognition of myocardial infarction and first intervention.

**Method:** A questionnaire was created by researcher showing the first treatment should be done in patients with MI. Questionnaire was completed by 250 volunteers. Volunteers were particularly selected from outside the health sector.

**Results:** When asked to participants "Do you think what is the most common mortality due to diseases?" Women said that 45.1% of heart attack, 47.2% of cancers, in men said that 63.9% of heart attack, 22.2% of cancer. When asked "what do you do encounter with one of the people around you think having a MI?" to the participants, the answer of 92.4% of participant seek emergency service (women 57%, men 40.7%), 31.2% of participant said that would provide ventilation to the room and (women 31.7%, men 30.6%), 20.4% of participant said that would give aspirin to the patient (women 21.8%, men 18.5%), 7.6% of participant said that would stated they had no information (women 7.2%, men 4.3%).

**Conclusion:** As a result of this study, especially in women were found to be less awareness about the prevalence and mortality of MI. About typical symptoms of MI other than chest pain concluded that the findings is not known enough. The normal population encounters with MI have not enough information on what to do other than call the emergency services have been discovered. Constitute the most important part of the diagnosis, and early intervention in acute myocardial infarction and it is necessary to consider that the implementation of community-wide education programs.

**Keywords:** angiography, HBsAg, anti-HCV, anti-HIV, health care providers.

### Introduction

In Turkey and all over the world, coronary heart diseases are the most frequent cause of death, independently from regional and racial differences (1-4). Acute Myocardial Infarction (AMI) is an acute and fatal disease that develops in the context of coronary artery disease. Approximately one third of AMI deaths happen during the

transport to the hospital and within a few hours after the beginning of the symptoms (5).

Chest pain, which is one of the most frequent symptoms of AMI, is an important cause of application to emergency unit. Chest pain is a frequent symptom that can be due to much different pathology. Indeed, it can be observed in com-

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mon muscle disease as well as in cardiac arrest due to severe cardiac complications. Thus, a right diagnosis and appropriate treatment are important in patients who present chest pain. The terms astringent, oppressive, strangling, tightening, burning are used. Oppression on chest, a tightening sensation around the chest, and the feeling that someone sits on the chest cage are among the descriptions. It is important that the first grade patient relatives also know these expressions as well as the patients.

The risk factors (RF) for coronary heart diseases patients are diabetes mellitus (DM), smoking, hypertension (HT), family history, hypercholesterolemia (HC), obesity, age, sex, menopause and physical inactivity and these directly affect the atherosclerosis incidence (6). First grade parents of AMI patients may know the relation between the other diseases and AMI. They also are conscious that they can present similar risk factors.

In our study, the first grade parents of patients hospitalized upon acute coronary syndrome diagnosis have been subject to a survey about the causes of acute myocardial infarcts, the recognition of the symptoms, the first aid procedures to perform and their own risk factors.

### Material and Method

Our study has been started upon the authorization of the Ethics Committee of Clinical Research of Abant İzzet Baysal University Faculty of Medicine. A survey about the clinical observations of patients who have undergone an MI and the first aid procedures has been prepared by the researchers and has been submitted to 250 volunteers. The volunteers were especially selected out of health sector. The selection of the volunteers has been performed in order to choose those who have not undergone MI or be in contact with such a patient. The illiterates have not been included in the study.

In the survey, age, sex, education level and profession have been asked among the demographic characteristics. The nature of symptoms that can be due to acute myocardial infarcts, the risk factors of having a heart attack (smoking, stress, hyperactivity, fatty food and sedentary life style) and the other diseases that can be at the origin

of that disease (Diabetes, Migraine, Rheumatic Diseases, hypertension, stomach ulcer), sexual distribution, the genetic nature of the disease and the age at the time of crisis have been asked to the participants. Moreover, the procedure to apply to a patient having a heart attack (I will give pain killer, I have no idea, I will ventilate the room, I will immediately call emergency services, I will give aspirin) and their smoking habit have been asked to the volunteers.

The data obtained from the survey have been transferred to the digital media. The data have been analyzed using the statistics software Package for the Social Sciences (SPSS, Inc., Chicago, IL), version 17.0 for Windows. Mann-Whitney U and Chi-square  $\chi^2$  test have been used for the determination of non-parametric values and the values have been considered significant when  $p < 0,05$ .

### Results

A total of 250 patients' relatives participated in our survey. 52.8 % of the volunteers were women ( $n=142$ ), 47.2 % were men ( $n=108$ ). The age average of the volunteers was  $36.09 \pm 12.09$ . The mean ages were  $34.45 \pm 10.69$  and  $38.24 \pm 14.29$  for women and men respectively. The education levels of the volunteers were 35.3% from secondary education ( $n=77$ ), 28.4% from high-school ( $n=71$ ), and 40.8% from university ( $n=102$ ). The distribution of the education levels according to the gender was as follows; 25% from secondary education ( $n=50$ ), 21.8% from high school ( $n=31$ ), 43% from university ( $n=61$ ) for women, and 25% from secondary education ( $n=27$ ), 37 % from high school ( $n=40$ ), 38 % from university ( $n=41$ ) for men.

11.6% ( $n=29$ ), 30% ( $n=75$ ), 14% ( $n=35$ ), 22.8% ( $n=57$ ), 11.6 % ( $n=29$ ) of the total participant number were respectively from education sector, from liberal profession, of students, of housewives, of retirees, and 9.2% ( $n=23$ ) were from different profession sectors. The housewives 40.1% ( $n=57$ ) and the liberal profession 56.6% ( $n=61$ ) respectively attracted the attention among the participants.

When the question 'which symptoms may be observed in people undergoing heart attack' has



been asked to the participants, the answers obtained were; 52.4% for respiratory disorder (n=131), 93.6% for chest pain (n=234), 61.6% for palpitation (n=154), 55.6% for transpiration (n=139), 50% for numbness in arm (n=125), 6% for indigestion (n=15), 5.2% for headache (n=13). When considering the gender of the participants, it is possible to say that men are more informed than women for this question.

When the question 'which ones are risk factors for a heart attack' has been asked to the participants, the answers obtained were; 'Smoking is a risk factor' 76.8% (n=192), 'smoking is not a risk factor' 23.2% (n=58). 'Stress is a risk factor' answer was given by 79.2% (n=198), while 20.8% (n=52) said 'Stress is not a risk factor'. 'Sedentary life is a risk factor' answer was given by 92% (n=230), 'excessive activity is a risk factor' answer was given by 8% (n=20). 'Fatty food is a risk factor' answer was given by 76% (n=190), while 24% (n=60) said 'Fatty food is not a risk factor'.

62.1% (n=36) of the participants who answered that smoking is not a risk factor were women while 37.9% (n=22) were men.  $p < 0.05$  and is statistically significant. Among participants who answered that smoking is not a risk factor, 44.8% (n=26) were graduated from university, 37.9% from high school (n=22), and 17.2% from secondary education (n=10). The professional group of participants who answered that smoking is not a risk factor, 34.5% (n=20) were from liberal profession, 15.5% were students, and 17.2% (n=10) were from the education sector.

When the question 'which diseases are risk factors for a heart attack' has been asked to the participants, the answers obtained were: 'Diabetes is a risk factor' answer was given by 20.8% (n=52), 'Diabetes is not a risk factor' answer was given by 79.2%. 38.1% (n=75) of the participants who did not know that diabetes is a risk factor were graduated from university, 30.5% (n=60) from high school, 31.4% from secondary school. 56.9% (n=112) of the participants who did not know that diabetes is a risk factor were women, while 43.1% (n=86) were men. The distribution of those participants according to their professional group was as follows: 30.5% (n=60) from liberal profession, 23.9% (n=47) of housewives, 13.7% (n=27) of students, and 12.2% (n=24) of teachers.

The classification for the other diseases considered as a risk factor was; 70.4% (n=176) hyperlipidemia, 64.8% (n=162) hypertension, 56% (n=140) obesity, 31.6% (n=79) rheumatic diseases, 4.4% (n=11) ulcer, 1.2% migraine. It is important to note that obesity is not known as a risk factor at 44% (n=110). 52.7% of this group (n=58) were women while 47.3% (n=52) were men. The distribution according to the education level was as follows; 37.3% (n=41) from secondary school, 34.5% (n=38) from university, 28.2% from high school. The distribution according to the professional group was as follows 35.5% (n=39) from liberal profession, 24.5% (n=27) of housewives.

When the question 'is the heart attack risk higher in women or in men' has been asked to the participants, the answers obtained were: 16% (n=40) for women, 84% (n=210) for men. When the question 'is heart attack hereditary' has been asked to the participants, the answers obtained were 56% (n=140) for yes, 43.6% (n=109) for no, 0.4 (n=1) for no answer. When the question 'when is heart attack observed' has been asked to the participants, the answers obtained were; 64.8% (n=162) for 40-60 years, 18% (n=45) for 20-40 years, 15.6% (n=39) for 60 years and more.

When the question 'how would you help someone having a heart attack' has been asked to the participants, the answers obtained were; 96.4% (n=241) for "I know", 3.6% (n=9) for "I do not know". 92.4% (n=231) answered they would call 112, 31.2% (n=78) said they would ventilate the room, 20.4% (n=51) answered they would give aspirin while 2% (n=5) said they would give a pain killer.

35.2% (n=88) of the participants were smokers. The mean age of the smokers was a young group at  $34.74 \pm 9.97$ . 33% (n=29) were women while 67% (n=59) were men. The education levels of these participants were as follows: 37.5% (n=33) from university, 34.1% (n=30) from high school, 28.4% (n=24) from secondary education.

## Discussion

In this survey, the opinions of the first grade relatives of AMI patients have been studied. Approximately equal participation from the two



sexes has been obtained. When considering the level of conscience and culture, the participants from the two genders were observed to belong to the same middle age group. The education level is above secondary education with a maximum for university graduates. The professional distribution of the participants presented a maximum for liberal profession in men, and housewives in women, in addition to people from education sector and students.

When women experience acute coronary syndrome symptoms such as AMI, they rapidly recognize the symptoms and perform emergency aid system (7). But there are also researchers who defend that women are not informed enough to recognize the presence of individual risk factors in ACS and to detect the risk (8). In our study, it has been determined that women are less informed about the recognition of AMI symptoms and thus to activate the emergency aid system. People have to be informed about acute coronary syndromes. By orientating the education towards women, the two genders may play an important role in determining the symptoms and activating the emergency response system.

During the education and information studies performed in order to decrease the delay before the application to the hospital, the factors increasing the application time and the patient groups shall be at the first plan. Public education campaigns shall be pursued to decrease the delay before the application to the hospital (9). The two genders gave the same results for the determination of pain and the activation of medical care as a result of the pain (10). In our study, men were more performing to recognize the symptoms. Chest pain is the most well known symptom.

The knowledge and the evaluation of heart attack and risk factors are insufficient from students. As in smoking example, educational campaigns for people or especially for students about heart attack, risk factors and adequate life style are necessary (11). Information about the blood pressure, the maximum levels of cholesterol and triglycerides are insufficient (12). In a study about the knowledge of risk factors by heart disease patients, it has been determined that the patients do not know the risk factors very well (13). People who participated to our

survey defined smoking, stress sedentary life style and fatty food as risk factors. The consciousness about risk factors is correct but it can be increased with additional education.

The mortality of the hospital for AMI with ST segment elevation is higher in men than women especially for 55 years and lower (14). No significant difference has been observed for coronary artery disease according to the business life tension, for men-women, young-old, from different socio-economic levels (15). In Iranian women patients, it presented a strong relation with CAD. In patients with coronary arterial disease, the medical treatment has been more frequently proposed to women (16). Especially for women who present high risk of AMI, the level of awareness is not enough.

The most important factor that affects the beginning of the symptoms and the call of professional medical aid is the fact that patients and patients' relatives have no knowledge about the heart-based complaints. The recognition of the symptoms is necessary to get first aid faster (17). In our study, the wish to activate emergency aid system is predominant. Calling 112 is an important factor to get advanced medical care rapidly. The participants of the survey have been accepted to have enough knowledge. However, they do not have enough knowledge about the drugs to give to the patients.

Smoking is elevated among men. It decreases among young people but it increases in lower socio-economic level (18). In Turkey, smoking is higher among men than among women (19). In our study, smoking is elevated especially in the young group. Men smoke more than women. The fact that the volunteers do not determine smoking as risk factors of acute coronary syndrome and acute myocardial infarcts, especially in the group with the highest education level, is a more dangerous situation.

The participants mostly do not see diabetes as a risk factor. There are more women than men in this group. Housewives and people from liberal profession do not state diabetes as a risk factor. Hyperlipidemia, hypertension and obesity are among the risk factors recognized by our volunteers. Especially women are aware that obesity is a risk factor. People from secondary education



are more aware than high school and university graduates.

As a result, it has been determined that women are less aware than men for recognition of acute myocardial infarcts and activation of emergency aid system. Chest pain is the better known symptoms and women as well as men recognize it successfully. The reflex to activate emergency aid is at a sufficient level. The high level of smokers among young people and the fact that they do not see smoking as a risk factor for acute coronary syndrome and acute myocardial infarcts is regrettable. Although the level of the participants is above the mean value, the level of risk factor awareness is insufficient. People need more information and education to recognize acute myocardial infarcts, to know the medical care to apply, to recognize the risk factors. The level of awareness may be increased by education campaigns for people.

#### KAYNAKLAR

- Oğuzhan A, Kaya MG. ST yükselmesiz akut koroner sendromda yaklaşım. *Türkiye Klinikleri J Surg Med Sci*2007;3:15-23.
- Onat A, Yazıcı M, Sari I, Turkmen S, Uzunlar B, Uyarel H, et al. The risk factor survey of 2003 in wester Turkey indicates trend to declining coronary mortality and urban overall mortality. [Article in Turkish] *Türk Kardiyol Dern Arş* 2003;31:762-9.
- Onat A, Sari İ, Tuncer M, Karabulut A, Yazıcı M, Türkmen S ve ark. TEKHARF çalışması takibinde gözlemlenen toplam ve koroner mortalitenin analizi. *Türk Kardiyol Dern Arş* 2004; 32:611-7.
- Sans S, Kesteloot H, Kromhout D. The burden of cardiovascular diseases mortality in Europe. Task Force of the European Society of Cardiology on cardiovascular Mortality and Morbidity Statistics in Europe. *Eur Heart J* 1997;18:1231-48.
- Chambless L, Keil U, Dobson A, Mahonen M, Kuulasmaa K, Rajakangas AM, et al. Population versus clinical view of case fatality from acute coronary heart disease: results from the WHO MONICA Project 1985-1990. Multinational Monitoring of Trends and Determinants in Cardiovascular Disease. *Circulation* 1997;96:3849-59.
- Block, RC., Pearson, TA. (2008). Risk faktor modifikasyonuna tamamlayıcı yaklaşım. Ceviren Erol MK. Kozan O (Ceviri Editoru), *Turkce Textbook of Cardiovascular Medicine. Ucuncu Baskı, Guneş Tıp Kitabevleri*, 175–183.
- David P. Nau, PharmD, Jeffrey J. Ellis, Eva M. Kline-Rogers, Usha Mallya, Kim A. Eagle, Steven R. Erickson. Gender and perceived severity of cardiac disease: Evidence that women are "tougher" *The American Journal of Medicine* (2005) 118, 1256-1261
- King KB, Quinn JR, Delehanty JM, Rizzo S, Eldredge DH, Caufield L, Ling FS. Perception of risk for coronary heart disease in women undergoing coronary angiography. *Heart Lung*. 2002 Jul-Aug;31(4):246-52.
- Sari I, Acar Z, Ozer O, Erer B, Tekbaş E, Uçer E, Genç A, Davutoğlu V, Aksoy M. Factors associated with prolonged prehospital delay in patients with acute myocardial infarction. *Türk Kardiyol Dern Ars*. 2008 Apr;36(3):156-62
- Granot M, Goldstein-Ferber S, Azzam ZS. Gender differences in the perception of chest pain. *J Pain Symptom Manage*. 2004 Feb;27(2):149-55.
- Gülizar Hacıoğlu, Nurdan Mert, Selda Deniz, Elmas Orak. The Investigation of Awareness of the Students of a Private University about Myocardial Infarction Risk Factors. *İ.Ü.F.N. Hem. Derg* (2011) Cilt 19 - Sayı 2: 99-104 ISSN 1304-4869
- Steffenino, G., Galliano, E., Roatta, M. Risk Factors, Life Habits and Personal Beliefs of Nurses and Nurse-Students About Cardiovascular Prevention. *Ital Heart J* 2005;6(3):172-7.
- Momtahan, K., Berkman, J., Sellick, J., Kearns, S., Lauzon, N. Patients' Understanding of Cardiac Risk Factors: A Point Prevalence Study. *J Cardiovasc Nurs*, 2004;19(1): 13-20.
- Nazzal C, Alonso FT. Younger Women Have a Higher Risk of In-Hospital Mortality Due to Acute Myocardial Infarction in Chile. *Rev Esp Cardiol*. 2012 Nov 15. doi:p11: S0300-8932(12)00500-3. 10.1016/j.recesp.2012.07.015.
- Kivimäki M, Kawachi I. Need for More Individual-level Meta-Analyses in Social Epidemiology: Example of Job Strain and Coronary Heart Disease. *Am J Epidemiol*. 2013 Jan 1;177(1):1-2. doi: 10.1093/aje/kws407.
- Abbasi Sh, De Leon AP, Kassaian S, Karimi A, Sundin O, Soares J, Macassa G. Gender differences in the risk of coronary artery disease in iran. *Iran J Public Health*. 2012;41(3):36-47.
- Ruston A, Clayton J, Calnan M. Patients' action during their cardiac event: qualitative study exploring differences and modifiable factors. *BMJ*. 1998 Apr4;316(7137):1060-4.
- Roberts B, Gilmore A, Stickley A, Rotman D, Prohoda V, Haerpfer C, McKee M. Changes in smoking prevalence in 8 countries of the former Soviet Union between 2001 and 2010. *Am J Public Health*. 2012 Jul;102(7):1320-8. doi:10.2105/AJPH.2011.300547.
- Onat A. Risk factors and cardiovascular disease in Turkey. *Atherosclerosis*. 2001 May;156(1):1-10.

