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EPIDEMIOLOGICAL INVESTIGATION OF CARDIOVASCULAR DISEASES IN KHATAMOL ANBIA HOSPITAL IN ZAHEDAN CITY IN 2016

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ABSTRACT

Background and Objective: Cardiovascular diseases are among the most common diseases around the world and the leading cause of death in Iran. In addition, it is regarded as one of the most preventable non-communicable diseases in humans. The main objective of this research was epidemiological investigation of cardiovascular disease in patients admitted to Emergency Unit of Khatamol Anbia Hospital in Zahedan city.
Methodology: this is a descriptive and retrospective research, in which the medical file of 1512 patients with a primary diagnosis of cardiovascular disease was examined in two-year period since 2013 to 2015. The data were extracted from the medical files using two-part checklist. The first part included demographic information and the second part of the information was related to risk factors and hospitalization duration. Findings were analyzed by using SPSS software.
Findings: research findings revealed that the mean age of the patients (622 females and 890 males) was 56.17 ± 13.81.
Conclusion: by controlling the risk factors such as hypertension, smoking, high level of blood cholesterol, and high weight, cardiovascular disease can be greatly prevented.

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Introduction

Cardiovascular diseases are considered as one of the chronic diseases and one of the main causes of death in the world. They account for 30% of all deaths and they cause death of 17.5 million people on average annually (1, 2). This disease affects about 5 million people annually in the United States and leads to death of 285000 people. (3) It is estimated that cardiovascular diseases would cause death of about 23.6 million people by 2030 (4). Cardiovascular diseases are also regarded as the leading cause of death in Iran, so that these diseases account for 45% of the deaths (5). Ischemic heart disease is one of the cardiovascular diseases, in which blood supply to heart is reduced, leading to necrosis of myocardia [6]. Myocardial infarction is one of the ischemic heart diseases. Myocardial infarction or heart attack is an ischemic necrosis of cardiac myocytes, occurring due to loss or reduced supply of blood to the heart tissue. It is the most common and most dangerous disease in industrialized countries (7). Myocardial infarction is regarded as the lethal symptom of this disease, so that out of five deaths, one death occurs due to acute coronary diseases (8). Statistics indicate that 19.5% of deaths in Iran in years 2004 and 2005 were due to ischemic heart diseases (9). Its rate is growing in developing countries, unfortunately, due to urban life characteristics, reduced physical activity, and weight gain, increased use of tobacco, job and mental stress, and lack of attention to health recommendations (10 and 11). This complication is less seen in high-income countries. This disease is seen more in low-income countries, such as South Asia countries, including India, Pakistan, Sri Lanka and Nepal (12). The real prevalence of cardiovascular disease is 0.5 and 0.18% in 35- 44 years old males and females, respectively, and 20.5 and 17.1% among the males and females aged over 60 years, respectively (13). It is also considered as one of the most common causes of death in

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Iran and nearly 3.6 million people with cardiovascular disease are hospitalized annually in hospitals covered by Ministry of Health and Medical Education, accounting for about 46% of deaths (14 and 15). Cardiovascular diseases in younger people have different risk factors and prognosis compared to those of older people. Patients suffering from this complication show non-specific symptoms, except for chest pain, which are often not diagnosed in the primary evaluation. These non-specific symptoms might indicate undesired treatment and prognosis (16 and 17). Heart attack occurs due to inadequate coronary blood flow and as a result of acute coronary artery occlusion due to thrombosis formation. Due to prolonged myocardial ischemia, it causes irreversible damages and necrosis in the heart muscle. When heart damage occurs in all thickness of the myocardium in the form of necrosis, ECG changes would be seen as ascending ST segment, and if necrosis occurs under the endocardium, ECG changes would be seen as descending ST segment (18). Patients suffering from ischemic heart disease are divided into two main groups: 1. Patients suffering from stable angina as a result of chronic coronary artery disease. 2. Patients suffering from acute coronary syndromes including unstable heart angina, acute myocardial infarction, along with ascending ST segment and acute myocardial infarction with and without ascending ST segment. Heart enzyme indices are used to distinguish the unstable angina from acute myocardial infarction with or without ascending ST segment (19). Given the high prevalence of cardiovascular diseases in Iran and death caused by these diseases, the current research was carried out to evaluate the epidemiologic status of cardiovascular disease in Khatamol Anbia Hospital in Zahedan.

Methodology

This research is a retrospective descriptive study. Its population included patients with a primary diagnosis of cardiovascular disease in a two-year period since 2013 to end of 2015, who admitted to Khatamol Anbia Hospital in Zahedan. Their disease was approved by an emergency medical specialist. The sample size was estimated to be 504 people based on findings of the research conducted by Belverdi et al. (20) and based on the formula for estimating the ratio with P = 0.16 and d = 0.032. In total, medical files of 1512 patients were examined. Inclusion criteria of the research included medical files of all patients, whose cardiovascular disease was diagnosed by an emergency specialist and they have treated and hospitalized and exclusion criteria included the files of all patients, whose cardiovascular disease was diagnosed by an emergency specialist but they have not been treated and they have discharged with reasons such as personal satisfaction and incomplete information inserted in the medical file. In this research, triage time and the time of patient admission to emergency unit, the time of the first visit by the emergency medical specialist recorded in the medical file, the time of start of therapeutic measures based on time recorded in the physician instructions sheet and the nurse report were recorded and investigated. Clinical history, ECG, interview, and questionnaire were used for collecting the data. In general, data were extracted from files using two-part checklist, which its first part was related to demographic information and the second part was related to risk factors and duration of hospitalization. The file of patients whose information was recorded incompletely was excluded from research. To reduce the confounding effect and to reduce the exclusion rate of the patients, cardiologist was used. In addition, in the case of access to patient, he was interviewed to complete the incomplete information on the medical file. Finally, in the case of incomplete information of the file for any reason, the patient file was excluded from study. SPSS 16 software was used to analyze the data.

Findings

In this research, medical files of 1512 patients were investigated. The mean age of patients was 56.17 ± 13.81. Given chi-square test, out of total patients, 622 people were female (37%) and 890 were male (63%). In addition, 63 were single (4.3%) and 1449 (95.7%) were married. Additionally, findings of this test revealed that out of all patients, 1023 people aged less than 60 years (67.7%) and 489 people (32.3%) aged over 60. Additionally, out of all patients, 354 (22.2%) had a history of heart disease and 1158 (77.8%) had no history of heart disease. Moreover, the most common risk factor was found to be hypertension (50.2%), followed by diabetes (19.4%), hyperlipidemia (14.7%), and family history of cardiovascular diseases (6.5%), and smoking (9.2%). Out of total hospitalized patients, 98.6% were discharged and mean duration of hospitalization was 2.5 ± 1.59.

Table 1. Frequency distribution of patients

Variable		f	Df	P
Gender	Male	890	1	0.00
	Female	622		
Married	Single	63	1	0.00
	Married	1449		
Age	Under 60 years	1023	1	0.00
	Over 60 years	489		
History of heart disease	Yes	354	1	0.00
	Yes	1158		

Discussion

Cardiovascular diseases are currently considered as the most important diseases throughout of world, which will lead to morbidity, mortality, disability and an increase in treatment costs by 2020 (21). This chronic disease has high impact on patients' quality of life. Out of total patients, 890 were male and 622 were female. In this research, majority of the patients were male, which is in line with findings of other studies found by research review of literature (21 and 22). The mean age of the patients was found to be 56.17 ± 13.81. In the research conducted by Belverdi, Ebrahim Zadeh, Emad Zadeh and Phelan, the mean age of patients was found to be similar to that of the current research (23, 20, 24). In the current research, most of the patients were married. Marriage has been recognized as an important social factor associated with mortality. Research on this issue in the United States, European countries, and Japan revealed that mortality risk for singles is 1.2 to 5.2 times more than that in married people. In a study conducted in Japanese on 94062 males and females aged 40 to 79, it was found that men who had never been married were at greater risk of death caused by cardiovascular diseases (25). Identifying the risk factors is means for decreasing the cardiovascular diseases risk through reducing the risk factors and making better decision-making through accurate determination of all risk factors status. Reducing the risk factors is the primary clinical measure for decreasing the mortality and morbidity of cardiovascular diseases. Epidemiological investigations have revealed that hypertension, smoking, and dyslipidemia are considered as the most common risk factors of coronary artery diseases, acting synergistically. Thus, given the increased risk factors of prevalence of coronary heart disease and increased costs, identifying and treatment of people at risk is considered as a national priority (26).

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