



**The relationship between main cardiac risk factors and acute myocardial infraction in the patients referring to Zabol Amir Al-Momenin Hospital in 2016**

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**Abstract**

**Introduction:**

Myocardial infraction is one of the most common causes of hospitalizing patients in industrial countries. The most important measure to minimize the myocardial infraction rate and its complications is minimizing the risk factors. By modifying and improving the risk factors among the groups at risk, the rate of infection and mortality of myocardial infraction can be reduced that can result in preserving the productive forces of the society and promoting the individuals' quality of life. The present study was conducted to study the relationship between main cardiac risk factors and acute myocardial infraction in the patients referring to Zabol Amir Al-Momenin Hospital in 2016.

**Method:**

The present study is a descriptive-analytical one in which the samples studied included individuals that were suffering from myocardial infraction for the first time and they were hospitalized in Zabol Amir Al-Momenin Hospital in 2016. For measuring the risk factors, chi-squared test, Fisher's exact test. For the simultaneous comparison of the individual risk factors in men and women, logistic regression model was used.

**Findings:**

In the experimental group, 330 patients were studied: 242 were men, and the rest were women. In the control group, 345 patients were studied: 264 were men, and the rest were women. The mean age of the experimental group was  $54.5 \pm 13.2$  years, and the mean age of the control group was  $53.2 \pm 12.2$  years. With respect to residential area, age, gender, educational level, and job, there was no significant statistical difference between the two groups. Given the findings of Logistic Regression test, factors such as high blood pressure, suffering from diabetes, and smoking in men are to be included as the risk factors of suffering from myocardial infraction in the myocardial infraction group. However, factors such as age and inappropriate diet were not risk factors of suffering from myocardial infraction in the myocardial infraction group.

**Conclusion:**

Given the findings of logistic regression test, high blood pressure history is likely to increase the relative risk of suffering from myocardial infraction. The findings of logistic regression test indicate that history of high blood pressure, diabetes, and smoking are the main risk factors of suffering from myocardial infraction in Zabol.

**Keywords:** cardiac risk factors, acute myocardial infraction, Zabol

## Introduction

Myocardial infraction is one of the most common causes of hospitalizing patients in industrial countries; in the US, 1.1 million people suffer from this disease, and about 30 percent of them die from the complications arising from this disease(1). The main cause of cardiac diseases especially myocardial infraction is arteriosclerosis of the coronary arteries. Although the risk factors of arteriosclerosis are numerous, the risk factors of coronary artery disease are divided into non-modifiable such gender, age, family history, and modifiable such as blood lipids level, high blood pressure, diabetes, smoking, obesity, inactivity, stress, emotional excitement, inappropriate diet, and taking contraceptive pills(2). The prevalence of coronary artery disease varies based on the geographic location, underlying disease, and behaviors that are likely to increase suffering from coronary artery disease. In spite of the modern therapeutic techniques for the coronary artery diseases as well as the significant developments in caring for the patients suffering myocardial infractions, the patients' mortality rate due to myocardial infraction has not decreased, and this disease is still behind the individuals' reduced longevity and their reduced useful years of the individuals' lives before they are 65(3). The most important measure to minimize the myocardial infraction rate and its complications is minimizing the risk factors(4). Rigel maintains that by modifying and improving the risk factors among the groups at risk, the rate of infection and mortality of myocardial infraction can be reduced that can result in preserving the productive forces of the society and promoting the individuals' quality of life(5). Given the high and increasing prevalence of this disease in our country and the necessity for determining the main risk factors of this disease to prevent, modify, and omit these risk factors, the present study was conducted to study the relationship between main cardiac risk factors and acute myocardial infraction in

the patients referring to Zabol *Amir Al-Momenin* Hospital in 2016.

## Method

The present study is a descriptive-analytical one in which the samples studied included individuals that were suffering from myocardial infraction for the first time and they were hospitalized in Zabol *Amir Al-Momenin* Hospital in 2016. The control group included the individuals that were hospitalized in other units of the hospital such as surgery, urology, neurosurgery, orthopedics, and gynecology. They did not suffer from myocardial infraction, cardiovascular diseases, congenital disease, and cardiovascular diseases. Moreover, they did not take cardiovascular drugs. Data collection was conducted through questionnaires including demographic information as well as information about coronary artery risk factors. The samples were selected by conducting convenience sampling. Both control group and case group were standardized with respect to demographic information and inclusion criteria of the present study. Descriptive statistics were used for preparing the tables, measuring the frequency distribution, central indices, and distribution. For measuring the risk factors, chi-squared test, Fisher's exact test. For the simultaneous comparison of the individual risk factors in men and women, logistic regression model was used.

## Findings

In the experimental group, 330 patients were studied: 242 were men, and the rest were women. In the control group, 345 patients were studied: 264 were men, and the rest were women. The mean age of the experimental group was  $54.5 \pm 13.2$  years, and the mean age of the control group was  $53.2 \pm 12.2$  years. With respect to residential area, age, gender, educational level, and job, there was no significant statistical difference between the two groups.

Table 1. The distribution of myocardial infraction risk factors in patients referring to Zabol *Amir Al-Momenin* Hospital.

P value	Confidence interval %95		OR	Frequency (percentage)		group Variable
	Low	high		Control	Experimental	
P <0/001	1/14	2/41	1/66	175	172	History of high blood pressure
P <0/001	1/22	2/84	1/84	139	130	Smoking
P <0/001	2/34	6/11	3/54	118	116	Diabetes

Chi-squared test and Fisher's exact test indicate that there is a significant difference in the frequency percentage, high blood pressure history ( $p < 0.001$ ), suffering from diabetes ( $p < 0.001$ ), and smoking ( $p < 0.001$ ) between the experimental group and control group. Given the findings of Logistic Regression test, factors such as high blood pressure, suffering from diabetes, and smoking in men are to be included as the risk factors of suffering from myocardial infarction in the myocardial infarction group. However, factors such as age and inappropriate diet were not risk factors of suffering from myocardial infarction in the myocardial infarction group.

## Discussion

Given the findings of logistic regression test, high blood pressure history is likely to increase the relative risk of suffering from myocardial infarction. Thus, this variable in this geographic location was a myocardial infarction risk factor(6). In this regard, the findings of the study conducted by Bullen et al indicate that increased blood pressure was the risk factor of cardiovascular disease in 52 percent of the women and 49 percent of men(7). Moreover, in the report of their study, Keil et al indicate that the relative risk of myocardial infarction increases with increased blood pressure; the annual prevalence of myocardial infarction among people with normal blood pressure is 5.7 from 1000, while as for the individuals with high blood pressure it will increase to 16.4 from 1000(8). Moreover, with respect to hypertension, the likelihood of suffering from myocardial infarction was 3.3 for men and 2.5 for women. In the study conducted by Thomas, although the risk factors of myocardial infarction and stroke are different, the relationship between these health problems and systolic and diastolic high blood pressure is more significant than other variables(9). Give the findings of logistic regression test, diabetes is to be included as a myocardial infarction risk factor. The findings of a study conducted by Pedro et al indicate that diabetes (with the prevalence of 2.5 in both genders) is an important risk factor of suffering from myocardial infarction(10). By increasing platelet adhesion, diabetes mellitus increases the likelihood of forming thrombus, and it will subsequently increase the likelihood of suffering from ischemic heart diseases(11). Thus, given the increasing growth of chronic diseases especially diabetes and their risk for creating coronary artery disease in this geographic location, the authorities need to pay due attention to control diabetes and its complications in this area. The other important risk variable of myocardial infarction

is smoking. The finding of a study conducted by Gillum et al indicate that smoking is an independent and significant risk factor of coronary artery disease in men and women(12). In the aforementioned study, the relative risk of suffering from myocardial infarction due to smoking is 1.42 in white women and 1.4 in white men, and this rates are more significant in black women(13). Smoking has turned out to increase the likelihood of suffering from myocardial infarction to 2.08 times. In the study conducted by Njolstad et al, the prevalence of myocardial infarction was higher among the smokers of both genders (especially men)(14). Increased smoking will result in the increased risk of suffering from myocardial infarction. This is especially true for women; women who smoke more than 20 cigarettes a day are 6 times more likely to suffer from myocardial infarction than non-smoking women. However, men who smoke more than 20 cigarettes a day are 3 times more likely to suffer from myocardial infarction than non-smoking men.

## Conclusion

The findings of logistic regression test indicate that history of high blood pressure, diabetes, and smoking are the main risk factors of suffering from myocardial infarction in Zabol.

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