Prevalence Risk Factors In Three Vessel Disease Patients Candidate For Coronary-Artery Bypass Surgery

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Abstract: Background: In the Iranian population, coronary artery disease is one of the major causes of death and disability higher morbidity and mortality rate is observed in patients with three vessel disease Therefore, the aim of this study was to evaluate the prevalence of risk factors in patients with three vessel disease who had been operated in Ahwaz Golestan hospital. Materials and Methods: this is a retrospective study. we referred to archive of Golestan hospitals, gathered files of patients with CAGB in 2013 and extracted required data from them. Data gathering instrument was researcher-constructed questionnaire including patients' demographic information. Results: Among the 500 patients in the study, 400 were male and 100 were female. The overall prevalence of risk factors in patients is as follows: hypertension 70.2%, respiratory disease 7%, hyperlipidemia 59%, history of hospitalization in CCU 44.2%, history of MI 42.4%, history of smoking 3.6%, and history of drug addiction 11.8%. Conclusion: Considering the prevalence of risk factors and underlying factors, health education, proper healthcare practices, and healthy feeding regimen can decrease morbidity and mortality in patients with cardiovascular disease and reduce the necessity for coronary bypass surgery, especially in 3VD patients.

Introduction:

During the last two centuries, the prevalence of cardiovascular disease has increased, such that today, it is considered the main cause of mortality and disability in the world. It constitutes 50% of deaths in developed countries and more than 25% of deaths in developing countries (1). In the Iranian population, coronary artery disease is one of the major causes of death and disability. It is now the first cause of death in people aged over 38. Heart diseases mortality rate has been reported about 28 to 48 percent, and the prevalence of ischemic heart has reported to be rising. According to WHO, cardiovascular disease causes 17 million deaths worldwide annually, which is nearly one-third of all annual deaths (3). This increase in the prevalence of cardiovascular disease has motivated many researchers to look into the factors that can affect its incidence and mortality. The results of these studies identify the factors known as cardiovascular disease risk factors. The most important of these risk factors are diabetes, hypertension, hyperlipidemia, smoking, history of hypertension, and cardiovascular disease (4). In coronary artery disease (CAD), the arteries are affected in different ways. In some patients, the involvement is confined to the distal end of the vessel, and, in some cases, several involvements,

including the involvement of the proximal parts of the vessel may also be observed. Based on the observations, it seems that there is a correlation between the severity of coronary artery involvement and other cardiovascular risk factors such as diabetes (5-10). This has been confirmed about hyperlipidemia in most studies (9-11), but, the results of different studies have been inconsistent about hypertension and smoking (9-10). Three vessel coronary disease (3VD) is defined as a stenosis equal to or more than 70% in any major epicardial coronary artery branches, and also in the their first branches of these vessels such as diagonal, obtuse marginal, posterior descending, and posterior lateral arteries which have a diameter of greater than or equal to 2 mm (12). Risk factors are more commonly observed in these patients. Also, higher morbidity and mortality rate is observed in these patients. Therefore, the aim of this study was to evaluate the prevalence of risk factors in patients with three vessel disease who had been operated on in Golestan hospital of Ahwaz.

Materials and Methods:

This is a retrospective a descriptive epidemiologic study. The statistical population included the patients who underwent CABG in

Ahvaz Golestan Hospital. After obtaining approval from the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences, the records of patients who had undergone cardiac surgery were collected. Then, the required information was obtained from the records. Data collection tool for this study was a researcher-made questionnaire, which includes both demographic data and variables studied. At the end, the data was entered into the computer and was analyzed using SPSS. Descriptive statistics was used to present the tables and graphs. Moreover, analytical statistics such as chi-square was used in order to compare the conditions in terms of two different sexes and various ages.

Results:

Among the 500 patients in the study, 400 were male and 100 were female. The overall prevalence of risk factors in patients is as follows: hypertension 70.2%, respiratory disease 7%, hyperlipidemia 59%, history of hospitalization in CCU 44.2%, history of MI 42.4%, history of smoking 3.6%, and history of drug addiction 11.8% (diagram 1).

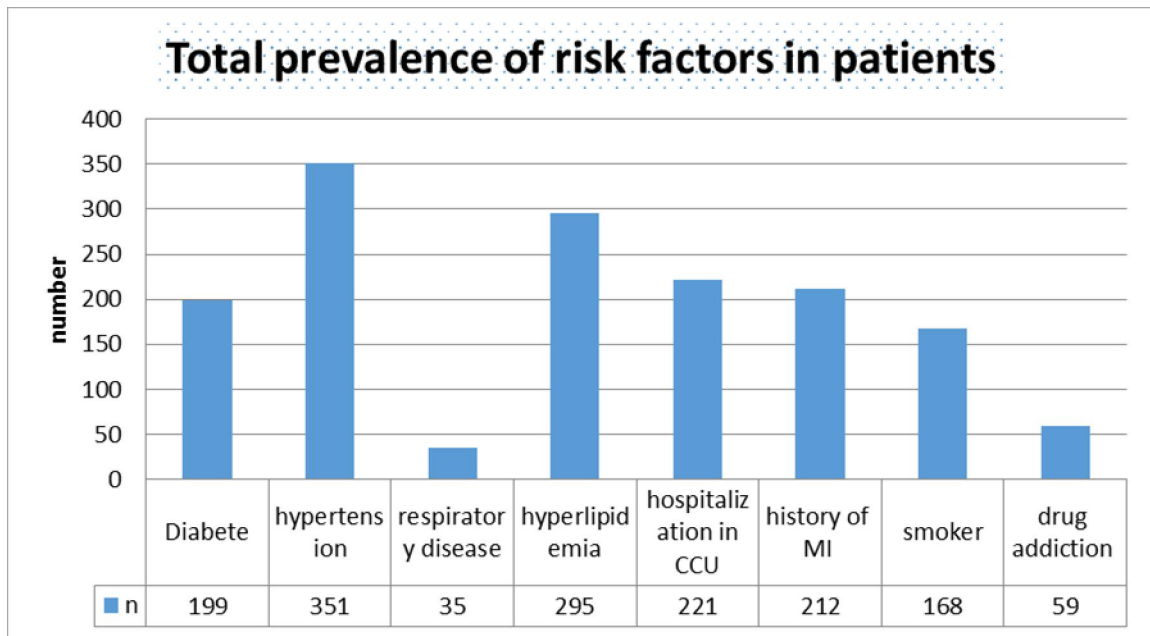|	Diabete	hypertension	respiratory disease	hyperlipidemia	hospitalization in CCU	history of MI	smoker	drug addiction
n	199	351	35	295	221	212	168	59

Diagram1. Total prevalence of risk factors in patients

Regarding gender, survey results show that the incidence of diabetes, hypertension and hyperlipidemia were significantly higher in women than in men (P <0.05), and the prevalence of smoking and drug addiction were significantly higher in men than women (P <0.05). It has to be noted that there was no significant difference in history of hospitalization in CCU, and MI in respiratory diseases in the two groups (P> 0.05) (table 1).

Table 1. Gender differences in risk factors

Risk factors	Male (n=400)	Female(n=100)	P Value
Diabete	145 (36.2%)	54 (54%)	P<0.05
hypertension	264 (66%)	87 (87%)	P<0.05
respiratory disease	28 (7%)	7 (7%)	NS
hyperlipidemia	225 (56.2%)	70 (70%)	P<0.05
Hospitalization in CCU	172 (43%)	49 (49%)	NS
history of MI	175 (43.7%)	37 (37%)	NS
smoker	164 (41%)	4 (4%)	P<0.05
drug addiction	57 (14.2%)	2 (2%)	P<0.05

Discussion:

The findings of this study were in a good agreement with those of previous study conducted in similar statistical population. In our previous study which was about the prevalence of risk factors in patients with carotid artery stenosis (13), it was found that in a total number of 608 patients, 217 patients (35.6%) had a history of smoking. Among the 503 non-stenotic patients, 171 patients (28.1%) had history of smoking. Among 105 patients who had stenosis, 46 patients (7.5%) had history of smoking. Among the total number of 608 patients, 213 patients (35.1%) were diabetics, among which 43 patients (7.0%) had carotid artery stenosis, and, 170 patients (27.9%) did not have carotid artery stenosis. Among the 608 patients, 441 patients (72.5%) had a history of hypertension, among which, 105 (17.3%) patients had carotid artery stenosis, and, 362 patients (59.5%) did not have carotid artery stenosis. Among the 608 patients, 48 patients (7.9%) had a history of pulmonary disease, among which, 12 patients (1.9%) had carotid artery stenosis, and, 36 patients (5.9%) did not have carotid artery stenosis. Among the 608 patients, 408 patients (67.1%) had a history of hyperlipidemia. This finding is in a very good agreement with the result of the present study. Keliani *et al.* in an article entitled "Survey of risk factors status in patients with 3VD candidate for coronary artery bypass graft surgery" argued that 38% of patients had diabetes, 32% had hypertension, and, 40 % had history of smoking. Among the patients, 11% had a BMI≥30, and 60.5% had a 25<MBI≤30. Also, 45.6% had O^+ blood type. Regarding blood lipids, 87% had TG≥200, and, 81% had TG≤200, and 70% had LDL≤100. No statistically significant relationship was observed between gender and smoking, hypertension and diabetes (P <0.05). There was a significant correlation between age and TG levels (P <0.05). They also concluded that risk factors for coronary artery disease in patients with stenotic three vessel coronary disease is not controlled even after the initial diagnosis of coronary artery disease, and these patients have to undergo invasive and stressful treatments. Authorities and healthcare professionals should pay more attention to this matter and use educational and preventive programs to decrease the incidence of this disease in non-affected people, as well as its progress in known patients (14). It is proposed that more research be dedicated to investigate prevalence of risk factors in these patients, especially in Iranian society, to achieve to more documented results.

Conclusions:

Considering the prevalence of risk factors and underlying factors, health education, proper healthcare practices, and healthy feeding regimen can decrease morbidity and mortality in patients with cardiovascular disease and reduce the necessity for coronary bypass surgery, especially in 3VD patients.

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