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Assessment of prevalence of cardiovascular risk factors among AMI patients

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Abstract
Background: Among the most common chronic diseases that afflict humans worldwide are diabetes, cardiovascular diseases (CVDs), osteoporosis, arthritis, obesity, chronic obstructive pulmonary disease, inflammatory bowel disease, central nervous system degenerative diseases and some cancers. Hence; the present study was undertaken for assessing the prevalence of cardiovascular risk factors among acute myocardial infarction (AMI) population.
Materials & Methods: A total of 200 AMI subjects were enrolled in the present study. Complete demographic details of all the patients were obtained. A self-framed questionnaire was given to all the subjects for obtaining the complete medical, clinical and demographic of all the patients. Socio-economic status was defined on basis of modified Kuppuswamy's Scale, according to which, Socio-economic classes were divided into upper, middle and lower. Blood samples were obtained from all the patients for assessing the hematological and biochemical profile.
Results: Significant results were obtained while assessing the age-wise correlation of patients. There were 110 males and 90 females in the present study. 33.5 percent of the patients belonged to upper class, while 365 percent of the patients belonged to middle class. 30 percent of the patients belonged to lower class. Significantly higher number of diabetic and hypertensive patients was seen in the present study.
Conclusion: Diabetes, hypertension and increasing age were found to be significant cardiovascular risk factors.

Keywords: cardiovascular, risk factors

Introduction
Chronic diseases have one or more of the following characteristics: they are persistent and leave residual disability; they are caused by non-reversible pathological conditions; and they require special training of the patient on rehabilitation, or may be expected to require prolonged medical supervision, observation or health care. Among the most common chronic diseases that afflict humans worldwide are diabetes, cardiovascular diseases (CVDs), osteoporosis, arthritis, obesity, chronic obstructive pulmonary disease, inflammatory bowel disease, central nervous system degenerative diseases and some cancers [1-3].
An acute myocardial infarction (AMI) is a subset of a spectrum of Ischemic Heart Disease (IHD) that includes unstable angina and AMI with or without ST elevation [4]. There are many risk factors for coronary artery disease (CAD) and some can be controlled but not others. The risk factors that can be controlled (modifiable) are: High BP; high blood cholesterol levels; smoking; diabetes; overweight or obesity; lack of physical activity; unhealthy diet and stress [5-8]. Some studies have shown the importance of the microenvironment, in particular the family, where genetic influences and lifestyle are equally important. Hence; under the light of above mentioned data, the present study was undertaken for assessing the prevalence of cardiovascular risk factors among known population.

Materials and Methods
The present study was conducted in the department of internal medicine of the medical institute and it included assessment of prevalence of cardiovascular risk factors among known population. Ethical approval was obtained from institutional ethical committee and written consent from all the patients after explaining in detail the entire research protocol. A total of 200 AMI subjects were enrolled in the present study. Complete demographic details of all the patients were obtained. A self-framed questionnaire was given to all the subjects for obtaining the complete medical, clinical and demographic of all the patients. Socio-

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economic status was defined on basis of modified Kuppuswamy's Scale, according to which,

Socio-economic classes were divided into upper, middle and lower [9]. Blood samples were obtained from all the patients for assessing the hematological and biochemical profile. All the results were recorded in Microsoft excel sheet and were assessed by SPSS software. Chi- square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

Results

In the present study, a total of 200 AMI patients were enrolled in the present study. Mean age of the patients of the present study was 59.4 years. 54 percent of the patients belonged to the age group of more than 45 years. Significant results were obtained while assessing the age-wise correlation of patients. There were 110 males and 90 females in the present study. 33.5 percent of the patients belonged to upper class, while 365 percent of the patients belonged to middle class. 30 percent of the patients belonged to lower class. Significantly higher number of diabetic and hypertensive patients was seen in the present study.

Discussion

Cardiovascular diseases (CVDs) account for the greatest burden of morbidity and mortality worldwide in both developed and developing countries. Coronary heart disease (CHD) is the greatest contributor to CVD and risk factors such as cigarette smoking, elevated cholesterol levels, high blood glucose, high blood pressure, physical inactivity and obesity are the driving forces behind the disease burden. Over 90% of CHD events occur in individuals with at least 1 risk factor [7- 9].

In the present study, a total of 200 AMI patients were enrolled in the present study. Mean age of the patients of the present study was 59.4 years. 54 percent of the patients belonged to the age group of more than 45 years. Significant results were obtained while assessing the age-wise correlation of patients. Nangia R *et al*. assessed the prevalence of raised BMI, blood pressure, cholesterol and blood sugar among serving armed forces personnel ≥35 yrs of age. The study was carried out between Jan 2013–Jun 2013. The study included all individuals ≥35 yrs of age deployed/posted in specific districts of northern part of the country (N = 5143) instead of a limited sample size. In this study, obesity was observed in 3.42%, raised BP in 14.07% and raised blood sugar levels in 1.71%. Additionally, 67.72% were pre-obese and 82.65% were pre-hypertensives. Lower prevalence of hypertension, hyperglycemia and dyslipidemia was observed in armed forces personnel in comparison to country specific data [10].

In the present study, there were 110 males and 90 females in the present study. 33.5 percent of the patients belonged to upper class, while 365 percent of the patients belonged to middle class. 30 percent of the patients belonged to lower class. Khetan A *et al*. assessed the prevalence and pattern of cardiovascular risk factors in a population in India. This is a cross-sectional study from Project SEHAT (Study to Enhance Heart Associated Treatments), an ongoing cluster randomised controlled trial testing the hypothesis that a community health worker-led intervention can improve the control of cardiovascular risk factors in a community in

West Bengal, India. For the baseline data, 3556 adults, between the ages of 35 and 70, were screened for hypertension, diabetes and smoking. For hypertension and diabetes, an elevated reading was confirmed on a repeat visit. 18.3% (n=650), 9.0% (n=317) and 14.1% (n=500) of adults were diagnosed with hypertension, diabetes and smoking, respectively. In their population in semiurban India, one in three adults has a major cardiovascular risk factor, with low control rates [11].

In the present study, significantly higher number of diabetic and hypertensive patients was seen. Gikas A *et al*. assessed the current prevalence of self-reported risk factors and CHD in Greek adult population. The study sample included 2636 subjects (men, 49.5%; mean age, 50.5; range 20-95 years), with similar age and sex distribution to the target population. The age-standardized prevalence rates of five major risk factors were as follows: type 2 diabetes 11.1%, hypercholesterolemia (cholesterol>240 mg/dl or using cholesterol-lowering medication) 23.8%, hypertension 27.2%, current smoking 38.9% and physical inactivity 43%. Of the participants, only 21% were free of any of these factors. Classic risk factors are highly prevalent and frequently clustered; especially in adults aged 50 years and older [12].

Table 1: Age-wise distribution of patients

Age group (years)	Number of patients	Percentage of patients	p-value
Less than 25	20	10	0.00 (Significant)
25 to 45	72	36	
More than 45	108	54	

Table 2: Gender-wise distribution of patients

Gender	Number of patients	Percentage of patients	p-value
Males	110	55	0.15
Females	90	45	

Table 3: Distribution of patients

Socio-economic status	Number of patients	Percentage of patients	p-value
Upper	67	33.5	0.41
Middle	73	36.5	
Lower	60	30	

Table 4: Distribution of patients according to residence

Residence	Number of patients	Percentage of patients	p-value
Rural	112	56	0.82
Urban	88	44	

Table 5: Distribution of patients according to diabetes

Diabetes	Number of patients	Percentage of patients	p-value
Present	128	64	0.00 (Significant)
Absent	72	36	

Table 5: Distribution of patients according to Hypertension

Hypertension	Number of patients	Percentage of patients	p-value
Present	144	72	0.00 (Significant)
Absent	56	28	

Conclusion
Under the light of above obtained results, the authors conclude that diabetes, hypertension and increasing age were found to be significant cardiovascular risk factors. However; further studies are recommended.

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