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Khausik Ghosh
Department of Medicine, R. G. Kar Medical College and Hospital, Hospital in Kolkata, India

Corresponding Author:
Khausik Ghosh
Department of Medicine, R. G. Kar Medical College and Hospital, Hospital in Kolkata, India

Evaluation of risk factors of myocardial infarction

Khausik Ghosh

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Abstract
Background: Myocardial infarction represents death of myocardial cells due to irreversible ischemia progressing to necrosis. The present study was conducted to evaluate the cases of myocardial infarction.
Materials & Methods: The present study was conducted on 146 cases of myocardial infarction of both genders. A thorough clinical examination was performed. History of hypertension, diabetes mellitus, renal disease and smoking cigarette were recorded.
Results: Out of 146 patients, males were 90 and females were 56. Different kinds of MI was inferior seen in 60, anterior in 34, inferior0 lateral in 20, anterior septal in 10 and others in 27. The difference was significant ($P< 0.05$). Risk factors in patients were hypertension seen in 37, diabetes mellitus in 40, renal dysfunction in 14, smoking in 84 and previous coronary artery disease in 16. The difference was significant ($P< 0.05$).
Conclusion: Authors found that common risk factors were hypertension, smoking, diabetes mellitus and previous history of coronary heart disease.

Keywords: coronary heart disease, myocardial infarction, smoking

Introduction
Myocardial infarction represents death of myocardial cells due to irreversible ischemia progressing to necrosis. According to the World Health Organization's estimates, every year approximately 6 million people around the world experience a myocardial infarction, and the lethal outcome occurs in over 25% of cases [1].
Coronary heart disease (CHD) is the most common serious disease in industrialized communities and a fast developing health problem in developing countries [2]. These diseases have caused mortality in developed countries more than other diseases and impose numerous social and economic costs. These diseases are now seen in countries with low or average income which also have the majority of population. These diseases will probably turn into the most common cause of death in world till 2020 [3].
Some of the risk factors of coronary heart disease are uncontrollable like senility, being male and history of atherosclerosis that are considered uncontrollable as risk factors but many of them can be modified like hypertension, hyperlipidemia , mellitus diabetes and smoking cigarette which are commutable risk factors of coronary artery disease. Studies results shows that CAD is not incidental and affected people can be found by clinical symptoms [4]. Cigarette is the most preventive risk factor. The effect of smoking cessation in smokers with coronary artery stenosis equals to that of surgery. The relationship between nutritious factors and blood lipids levels has also been examined in human groups in randomized studies.[5] The present study was conducted to evaluate the cases of myocardial infarction.

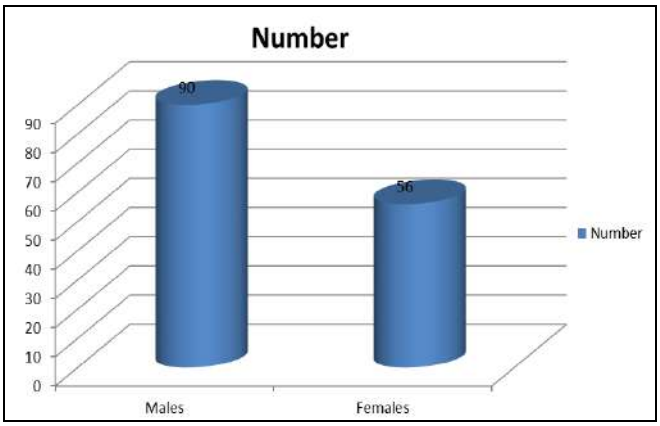
Materials & Methods
The present study was conducted in the department of Internal medicine. It comprised of 146 cases of myocardial infarction of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained prior to the study.
General information such as name, age, gender etc. was recorded. A thorough clinical examination was performed. History of hypertension, diabetes mellitus, renal disease and smoking cigarette were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table I: Distribution of patients

Total- 146		
Gender	**Males**	**Females**
Number	90	56

Table I, graph I shows that out of 146 patients, males were 90 and females were 56.

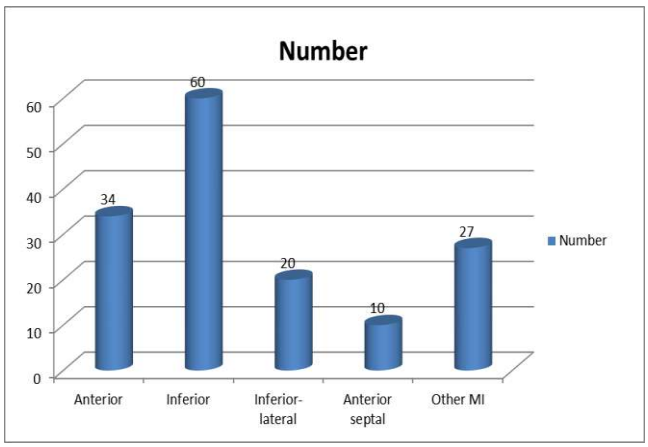


Graph I: Distribution of patients

Table II: Different kinds of MI

MI	Number	P value
Anterior	34	0.05
Inferior	60	
Inferior- lateral	20	
Anterior septal	10	
Other MI	27	

Table II, graph II shows that different kinds of MI was inferior seen in 60, anterior in 34, inferior0 lateral in 20, anterior septal in 10 and others in 27. The difference was significant (P< 0.05).

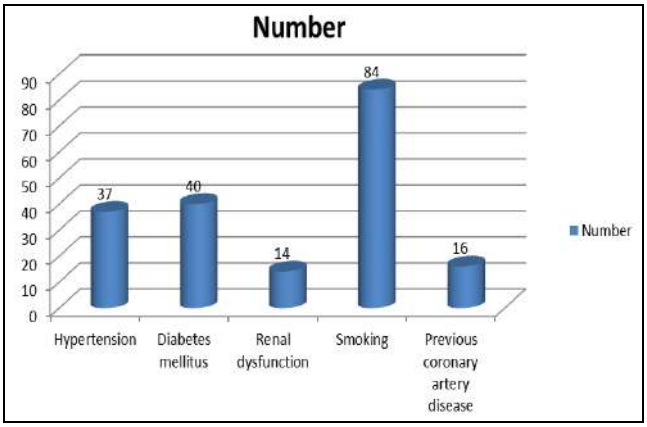


Graph II: Different kinds of MI

Table III: Risk factors in patients

Risk factors	Number	P value
Hypertension	37	0.01
Diabetes mellitus	40	
Renal dysfunction	14	
Smoking	84	
Previous coronary artery disease	16	

Table III, graph III shows that risk factors in patients were hypertension seen in 37, diabetes mellitus in 40, renal dysfunction in 14, smoking in 84 and previous coronary artery disease in 16. The difference was significant (P< 0.05).



Graph III: Risk factors in patients

Discussion

The introduction of more sensitive cardiac troponin assays and lower diagnostic thresholds led to a major revision of the guidelines introducing a classification by etiology to acknowledge that myocardial injury occurs in a wide range of clinical presentations. The third universal definition of myocardial infarction provided an international consensus on the classification of myocardial injury and infarction. The diagnosis of myocardial infarction requires evidence of myocardial necrosis in a clinical setting consistent with acute myocardial ischaemia [6].

These criteria require detection of a rise and/or fall in cardiac biomarker levels with at least one value above the 99th percentile upper reference limit, with at least one of the following: (1) symptoms of myocardial ischaemia, (2) new or presumed new significant ST-segment T-wave changes or new left bundle branch block, (3) development of pathological Q-waves on the electrocardiogram, (4) imaging evidence of loss of viable myocardium or new regional wall motion abnormality or (5) identification of intracoronary thrombus by angiography or autopsy [7]. The present study was conducted to evaluate the cases of myocardial infarction.

We found that out of 146 patients, males were 90 and females were 56. Ives et al. [8] conducted a cross sectional study in which 213 patients were examined. Results showed that 70% of patients were women and only 30% were men. 48% of them were illiterate and patients mean age was 58.3. SD had been 12.6. The mean of pain onset time till referring to hospital was 11 hours with SD of 2.1. 17% of patients (coronary artery diseases history), 25.5% (hypertension history), 26% (diabetes history), 15.5% (cholesterol history), 13% (smoking) and 3% have reported CABG history. The majority of people who referred had inferior MI (40.4%). 67.1% normal rhythm, 2.8% atrial fibrillation and 16% had ventricular tachycardia. Statistical tests showed a significant correlation between sex and the mean of referring time (P<0.05) but the relation between age and referring time was not significant.

We found that different kinds of MI was inferior seen in 60, anterior in 34, inferior0 lateral in 20, anterior septal in 10 and others in 27. The most common symptom of AMI is chest pain. Vomiting, tiredness, and poor rest could increase cardiac load and myocardial oxygen consumption, thus inducing AMI. As emergency care was immediately

administered by nurses to patients on admission, psychological nursing may be neglected. In addition, the frequently visit by their family members and friends may lead to insufficient rest and sleep of patients. Thus, careful psychological counselling and adequate and uninterrupted sleep are essential in reducing myocardial oxygen consumption and may play a therapeutic role in lowering the mortality rate [9].

Floyd et al. [10] found that the annual mortality had been 26% in diabetic patients and 14% in non-diabetic ones. The mortality of diabetic patients with MI had also been higher than non-diabetic ones. This ratio rises if hypertension and diabetes are both existent Anatomically the most prevalent kind of MI is respectively inferior 40.4%, anterior 25.8%, anteseptal 9.4% and the least is lateral MI. It is 53% inferior and 40% anterior. Infarction section is a prognosis factor and anterior infraction has a more severe prognosis.

Conclusion

Authors found that common risk factors were hypertension, smoking, diabetes mellitus and previous history of coronary heart disease.

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