

Assessment of the cases of Myocardial infarction- A clinical study

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Abstract

Background: Myocardial injury is common in patients without acute coronary syndrome, and international guidelines recommend patients with myocardial infarction are classified by aetiology. The present study was conducted to assess the cases of Myocardial infarction. **Materials & Methods:** 102 cases of Myocardial infarction of both genders were included. Recording of education level, family history, residence, tobacco history, co- morbidities etc. was recorded. **Results:** Out of 102, males were 62 and females were 40. Common risk factors were smoking in 45, alcoholism in 50, hypertension in 72, hyperlipidemia in 80 and lack of exercise in 51. The difference was significant ($P < 0.05$). **Conclusion:** Common risk factors were smoking, alcoholism, hypertension, hyperlipidemia and lack of exercise.

Keywords: Myocardial infarction, Hypertension, Hyperlipidemia

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Introduction

Myocardial injury is common in patients without acute coronary syndrome, and international guidelines recommend patients with myocardial infarction are classified by aetiology. The universal definition differentiates patients with myocardial infarction due to plaque rupture (type 1) from those due to myocardial oxygen supply-demand imbalance (type 2) secondary to other acute illnesses [1]. Patients with myocardial necrosis, but no symptoms or signs of myocardial ischaemia, are classified as acute or chronic myocardial injury. This classification has not been widely adopted in practice, because the diagnostic criteria for type 2 myocardial infarction encompass a wide range of presentations, and the implications of the diagnosis are uncertain. However, both myocardial injury and type 2 myocardial infarction are common, occurring in more than one-third of all hospitalised patients. These patients have poor short-term and long-term outcomes with two-thirds dead in 5 years [2]. An Indian Population shows a lack of awareness relating to risk factors of heart diseases. By identifying risk factors, that can be identified and by the help of which further variations in the lifestyle practices will be made can reduce the risk

of MI. Globally, about 17.5 million of the deaths in 2012 occurred due to the cardio vascular diseases [3]. Majority (75%) of these deaths occurred in the developing countries where the mortality rate from the coronary heart diseases is rapidly declining; but it is continuously increasing in the developing countries. This type of increase is made due to the urbanization, industrialization, and the related lifestyle variations, known as epidemiological transition. ⁴ The present study was conducted to assess the cases of Myocardial infarction.

Material & Methods

The present study comprised of 102 cases of Myocardial infarction of both genders. All were enrolled after obtaining their written consent. Data such as name, age, gender etc. was recorded. A thorough clinical examination along with recording of education level, family history, residence, tobacco history, co- morbidities etc. was recorded. Results were clubbed and subjected to statistical analysis. P value less than 0.05 was considered significant. P value less than 0.05 was considered significant.

Results**Table 1: Distribution of patients**

Total- 102		
Gender	Males	Females
Number	62	40

Table 1 shows that out of 102, males were 62 and females were 40.

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Table 2: Assessment of risk factors

Risk factors	Number	P value
Smoking	45	0.18
Alcoholism	50	
Hypertension	72	
Hyperlipidemia	80	
Lack of exercise	51	

Table 2, Fig1 shows that common risk factors were smoking in 45, alcoholism in 50, hypertension in 72, hyperlipidemia in 80 and lack of exercise in 51. The difference was significant (P< 0.05).

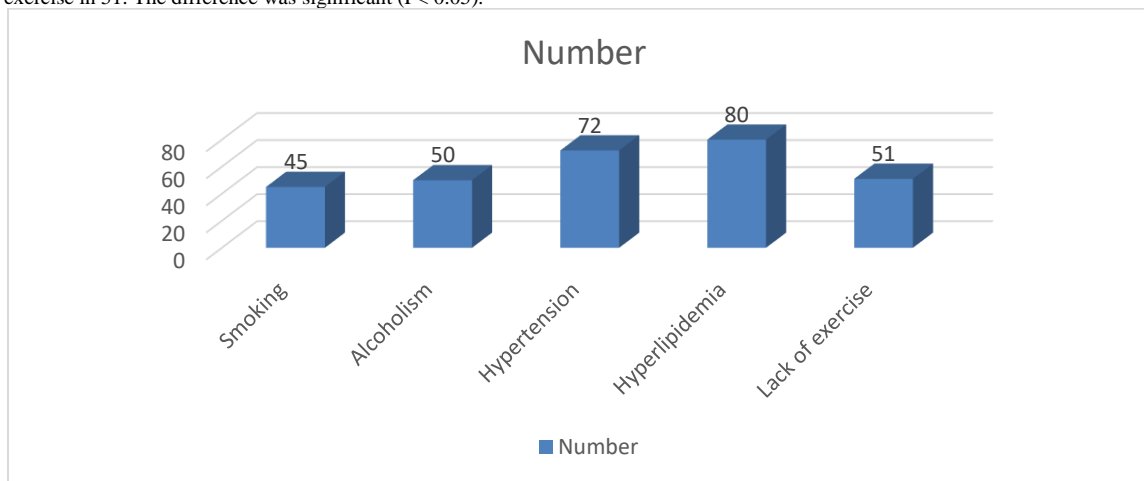


Fig 1:Assessment of risk factors

Discussion

The incidence of MI in the world varies greatly. More than 80% of the cardiovascular diseases occur in the developing countries. An Indian Population shows a lack of awareness relating to risk factors of heart diseases. By identifying risk factors, they can be identified and by the help of which further variations in the lifestyle practices will be made can reduce the risk of MI[5]. Cardiac troponin is the only recommended biomarker for the detection of myocardial necrosis, and it is integral to the diagnostic criteria for myocardial infarction. Our ability to accurately measure cardiac troponin has improved through the development of more sensitive assays, with the latest generation high-sensitivity assays capable of detecting cardiac troponin concentrations in the majority of healthy individuals. This has allowed accurate identification of the normal reference range and the 99th centile upper reference limit[6]. The universal definition has recommended the 99th centile as the diagnostic threshold for acute myocardial infarction since 2007, with a rise or fall in cardiac troponin concentrations necessary to confirm the diagnosis. Improvements in assay precision have identified differences in cardiac troponin concentrations between men and women, with the 99th centile twofold lower in women than men across a range of assays. The use of high-sensitivity cardiac troponin and sex-specific 99th centile upper reference limit increases the diagnosis of myocardial injury and infarction, particularly in women, and identifies a high-risk group of patients with poor outcomes[7]. The present study was conducted to assess the cases of Myocardial infarction. In present study, out of 102, males were 62 and females were 40. Shah et al[8]. assessed the risk level & various risk factors of MI among the post-MI patients, and to find the association of risk level of MI with socio-demographic variables of post MI patients. Seventy post-myocardial infarction patients were selected as sample that was selected by purposive sampling technique from a tertiary care hospital in Dehradun. The data were collected by using self-reported risk assessment tool. Study results shows that the majority 69 (98.6%) of the study participants were with the diagnosis of CAD with MI. The

majority 64 (91.4%) of the study participants had not attended any educational programme on CAD/Heart disease prevention. The study results shows that majority 58 (82.86%) of participants were having moderate risk of MI. As per this study the risk factors which were identified for MI were like male with 41 to 60 years, weight more than ideal weight, smoking habits, stress, eating sweet diets, personality type-A, no regular exercise and Diabetes mellitus. The association of MI risk level with the co-morbidity (including diabetes, hypertension or both) was statistically significant at the level of 0.05 significance. We found that common risk factors were smoking in 45, alcoholism in 50, hypertension in 72, hyperlipidemia in 80 and lack of exercise in 51. The classification distinguishes between type 1 myocardial infarction due to thrombosis of an atherosclerotic plaque and type 2 myocardial infarction due to myocardial oxygen supply demand imbalance in the context of another acute illness[9]. Myocardial infarctions presenting as sudden death (type 3), or after percutaneous coronary intervention (type 4) and coronary artery bypass grafting (type 5) are also defined. Acute myocardial injury is classified where troponin concentrations are elevated with evidence of dynamic change in the absence of overt myocardial ischaemia, whereas in chronic myocardial injury troponin concentrations remain unchanged on serial testing[10]. This is an important distinction, as the underlying pathological mechanisms in acute and chronic myocardial injury are likely to differ. This classification is contentious and was based on expert consensus rather than evidence from prospective clinical trials[11]. While it has been adopted in research studies, implementation in clinical practice has been less consistent. The most contentious diagnosis is that of type 2 myocardial infarction; a concept based on clinical hypothesis and observation without prospective mechanistic evaluation. Patients classified with type 2 myocardial infarction are heterogeneous and have myocardial ischaemia secondary to a variety of acute medical or surgical conditions. Based on the current criteria, a diagnosis of type 2 myocardial infarction could be applied to patients without coronary artery disease[12]

Conclusion

Authors found that common risk factors were smoking, alcoholism, hypertension, hyperlipidemia and lack of exercise.

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