

Original Research

Assessment of risk factors in cases of myocardial infarction in adult population

Dr. Chanchal Kumar Anand¹, Dr. Siddharth Sonkar²

¹Assistant professor, Department of Medicine, Prasad Institute of Medical Sciences, Lucknow, Uttar Pradesh, India;

²Associate professor, Department of Medicine, TS Misra Medical College and Hospital, Lucknow, Uttar Pradesh, India

ABSTRACT:

Background: The present study was conducted to assess risk factors in cases of myocardial infarction in adult population.

Materials & Methods: The present study was conducted among 82 patients diagnosed with severe MI. Factors such as duration, hypertension history, diabetes history, cholesterol, history of smoking, CABG history etc. was recorded. **Results:** out of 82 patients, males were 51 and females were 31. Common risk factors were diabetes in 48, CAG in 8, hypertension in 52, cholesterol in 68, smoking in 45 and history of CAD in 30 patients. The difference was non-significant ($P > 0.05$). Common type was anterior in 16, inferior in 34, inferior-lateral in 12, anterior septal in 10 and other in 8 cases. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that common risk factors were diabetes, CAG, hypertension, cholesterol and smoking.

Key words: Coronary artery disease, Hypertension, Smoking.

Received: 12/04/2020

Accepted: 18/05/2020

Corresponding author: Dr. Siddharth Sonkar, Associate professor, Department of Medicine, TS Misra Medical College and Hospital, Lucknow, Uttar Pradesh, India

This article may be cited as: Anand CK, Sonkar S. Assessment of risk factors in cases of myocardial infarction in adult population. J Adv Med Dent Sci Res 2020;8(6):130-133.

INTRODUCTION

Coronary artery disease (CAD) is the leading cause of mortality worldwide¹ and by 2020, will be the leading cause of disability.¹ India is going through an epidemiologic transition whereby burden of communicable diseases has been declining slowly, but that of non-communicable diseases (NCD) has been rising rapidly, thus facing a dual burden. Current estimates from various epidemiologic studies indicate the prevalence of coronary heart disease (CHD) to be 7%-13% in urban and 2%-7% in rural populations.² Acute myocardial infarction (AMI) is one of the most common presentations of CAD. Although individuals younger than 40 years of age account for only 3% of all patients with coronary artery disease, they are not completely immune from CAD. Additionally, AMI in very young patients aged ≤ 35 years has been poorly described but is estimated to be less than 2%.³

It seems that the mortality of these diseases will increase in developing countries due to lack of familiarity with coronary heart diseases risk factors and failure to comply preventive principles.⁴ One of the diagnosis methods is examining the affected patients.⁵ 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, diabetes mellitus and smoking cigarette which are commutable risk factors of coronary artery disease.⁶ The present study was conducted to assess cases of myocardial infarction in adult population.

MATERIALS & METHODS

The present study was conducted in the department of general medicine. It comprised of 82 patients diagnosed with severe MI based on WHO/AHA

criteria. All enrolled patients were informed regarding the study and their consent was obtained. Ethical clearance was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Factors such as duration, hypertension history,

diabetes history, cholesterol, history of smoking, CABG history etc. was 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- 82		
Gender	Male	Female
Number	51	31

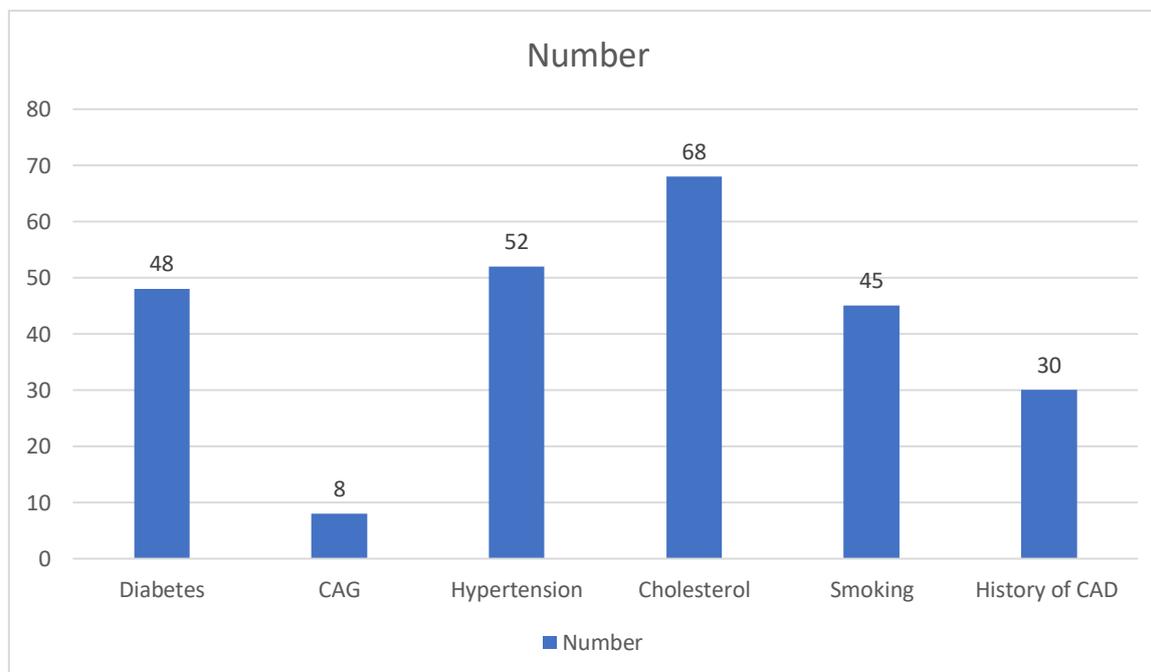
Table I shows that out of 82 patients, males were 51 and females were 31.

Table II Assessment of risk factors

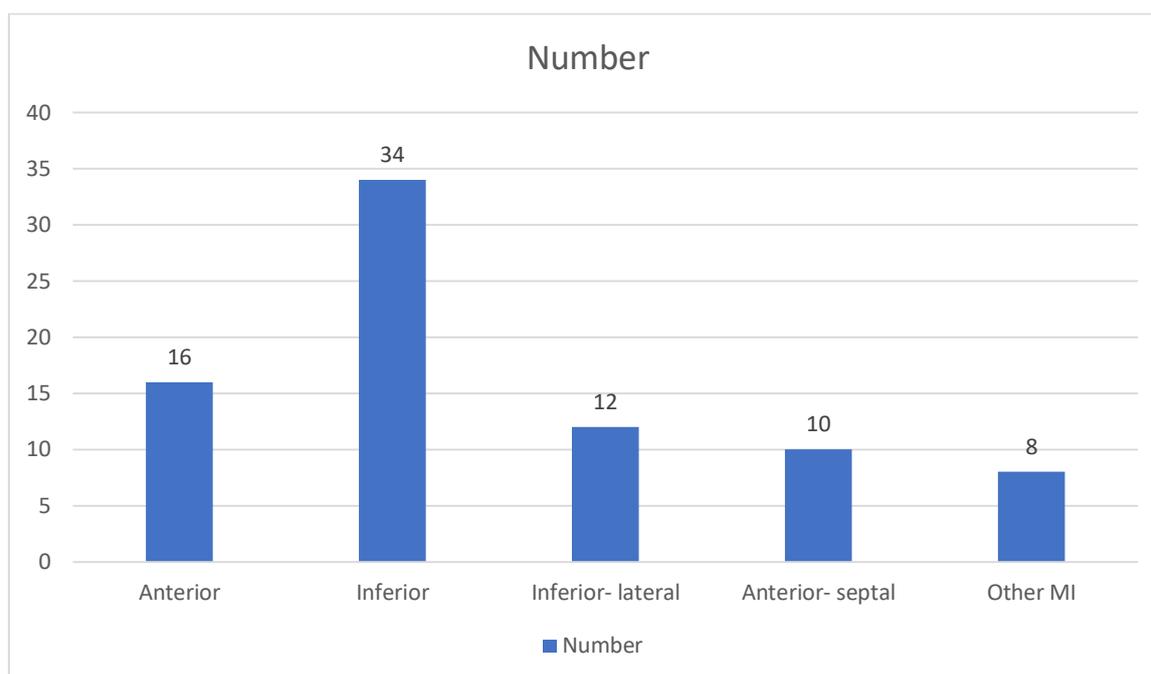
Risk factors	Number	P value
Diabetes	48	0.14
CAG	8	
Hypertension	52	
Cholesterol	68	
Smoking	45	
History of CAD	30	

Table II, graph I shows that common risk factors was diabetes in 48, CAG in 8, hypertension in 52, cholesterol in 68, smoking in 45 and history of CAD in 30 patients. The difference was non- significant ($P > 0.05$).

Graph I Assessment of risk factors



Graph II Different type of MI



Graph II shows that common type was anterior in 16, inferior in 34, inferior-lateral in 12, anterior septal in 10 and other in 8 cases. The difference was significant ($P < 0.05$).

DISCUSSION

Hypertriglyceridemia, low levels of high-density lipoprotein cholesterol (HDL-C), metabolic syndrome, high lipoprotein-a, dietary habits, and unplanned modernization associated with sedentary but stressful lifestyle are suggested as additional risk factors for CAD.⁷ Apart from smoking, ST-segment elevation acute myocardial infarction (STEMI) in the very young (≤ 30 years) is likely related to drug abuse or non-traditional risk factors, such as hyperhomocysteinemia.⁸ The pattern of care and outcomes of very young with STEMI is therefore not well defined. Coronary angiography (CAG) performed in young patients with AMI has identified a relatively high incidence of non-obstructive stenosis or single-vessel disease.⁹ The present study was conducted to assess cases of myocardial infarction in adult population.

In this study, there were 82 patients, of which males were 52 and females were 30. Sinha et al¹⁰ assessed the risk factors, clinical presentation, angiographic profile including severity, and in-hospital outcome of very young adults (aged ≤ 30 years) with first acute myocardial infarction (AMI). Total of 1,116 consecutive patients with ST-segment elevation acute myocardial infarction (STEMI) were studied. Risk factors were smoking (78.5%), family history of premature coronary artery disease (CAD) (46.8%), obesity (39.1%), physical inactivity (38.7%) and stressful life events (29.6%). The most common symptom and presentation was chest pain and anterior wall myocardial infarction (AWMI) in 94.8% and 58.8%, respectively. About 80.6% of patients had

obstructive CAD with single vessel disease (57.6%), double-vessel disease (12.9%) and left main involvement (3.2%). Left anterior descending (LAD) was commonest culprit artery (58.1%) followed by right coronary artery in 28.2%. In-hospital mortality was 2.8%. Percutaneous coronary intervention was performed in 71.6% of patients. Median number and length of stent were 1.18 and 28 ± 16 mm, respectively.

We found that common risk factors were diabetes in 48, CAG in 8, hypertension in 52, cholesterol in 68, smoking in 45 and history of CAD in 30 patients. Kiani et al¹¹ assessed the risk factors in patients with myocardial infarction (MI). 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 common type was anterior in 16, inferior in 34, inferior-lateral in 12, anterior septal in 10 and other in 8 cases. Morillas et al¹² recognized in their study that among attributed risk factors to MI patients, smoking cigarette and hypercholesterolemia

is more in young individuals and hypertension, diabetes and CAD is more in older ones. The limitation of the study is small sample size.

CONCLUSION

Authors found that common risk factors were diabetes, CAG, hypertension, cholesterol and smoking.

REFERENCES

1. Anand S. S, Islam S, Rosengren A, Franzosi M. G, Steyn K, Yusufali A. H, Yusuf S. Risk factors for myocardial infarction in women and men: insights from the INTERHEART study. *European heart journal*. 2008;29(7):932–940.
2. Bagherian Sararoodi R, Saneei H, Bahrami Ehsan H. The Relationship of History of Hypertension and Illness Cognitive Representation in Post-Myocardial Infarction. 2010;27(101):710–716.
3. Banks A. D, Dracup K. Factors associated with prolonged prehospital delay of African Americans with acute myocardial infarction. *American Journal of Critical Care*. 2006;15(2):149–157.
4. Baxter A. J, Coyne T, McClintock C. Dietary patterns and metabolic syndrome—a review of epidemiologic evidence. *Asia Pacific journal of clinical nutrition*. 2006;15(2):134.
5. Chadha SL, Radhakrishnan S, Ramachandran K, Kaul U, Gopinath N. Epidemiological study of coronary heart disease in urban population of Delhi. *Indian J Med Res*. 1990;92:424–30.
6. Enas EA, Yusuf S, Mehta JL. Prevalence of coronary artery disease in Asian Indians. *Am J Cardiol*. 1992;70(9):945–9.
7. Kanitz MG, Giovannucci SJ, Jones JS, Mott M. Myocardial infarction in young adults: Risk factors and clinical features. *J Emerg Med*. 1996;14(2):139–45.
8. Glover MU, Kuber MT, Warren SE, Vieweg WV. Myocardial infarction before age 36: Risk factor and arteriographic analysis. *Am J Cardiol*. 1982;49(7):1600–3.
9. Tewari S, Kumar S, Kapoor A, Singh U, Agarwal A, Bharti BB, et al. Premature coronary artery disease in North India: an angiography study of 1971 patients. *Indian Heart J*. 2005;57(4):311–8.
10. Sinha SK, Krishna V, Thakur R, Kumar A, Mishra V, Jha MJ, Singh K, Sachan M, Sinha R, Asif M, Afdaali N. Acute myocardial infarction in very young adults: A clinical presentation, risk factors, hospital outcome index, and their angiographic characteristics in North India-AMIYA Study. *Arya Atherosclerosis*. 2017 Mar;13(2):79.
11. Kiani F, Hesabi N, Arbabisarjou A. Assessment of risk factors in patients with myocardial infarction. *Global journal of health science*. 2016 Jan;8(1):255.
12. Morillas P. J, Cabadés A, Bertomeu V, Echanove I, Colomina F, Cebrián J, Sanz J. C. Acute myocardial infarction in patients under 45 years. *Revista española de cardiología*. 2002;55(11):1124–1131