

Analysis of Prevalence of Acute Coronary Syndrome: An Institutional Based Study

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ABSTRACT

Background: Coronary artery disease (CAD) is an emerging health problem in India; various risk factors contribute to the increased prevalence of CAD in different age groups. The present study was conducted to assess the prevalence of acute coronary syndrome in a tertiary care hospital.

Materials and Methods: The prospective study was a conducted among 200 patients in Department of General Medicine, Rama Medical College Hospital and Research Centre, Hapur, Uttar Pradesh (India) over a period of 1 year. Data was collected. The recorded data was compiled, and data analysis was done using SPSS (SPSS Inc., Chicago, Illinois, USA). P-value less than 0.05 was considered statistically significant.

Results: A total of 200 patients were included in the study. In the present study 73% were males and 27% were females. Maximum patients were of age group 41-45yrs. The mean age of the patient was 34.22 ±4.59 years. Among 200 patients, 51% were having NSTEMI, 36% were having STEMI, and 13% were having UA.

Conclusion: The present study concluded that maximum

patients of acute coronary syndrome were of age group 41-45yrs. 51% were having NSTEMI, 36% were having STEMI, and 13% were having UA.

Keywords: Acute Coronary Syndrome, Unstable Angina, NSTEMI, STEMI.

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INTRODUCTION

Coronary artery disease (CAD) is one of the leading causes of morbidity and mortality in the world. In CAD atherosclerotic plaque builds up inside the coronary arteries and restricts the flow of blood, and therefore the delivery of oxygen to the heart. CAD can lead to acute coronary syndrome (ACS), which describes any condition characterized by signs and symptoms of sudden myocardial ischemia – a sudden reduction in blood flow to the heart. The term ACS was adopted because it was believed to more clearly reflect the disease progression associated with myocardial ischemia. The signs and symptoms of ACS constitute a continuum of intensity from unstable angina (UA) to non-ST-segment elevation myocardial infarction (NSTEMI) to ST-segment myocardial infarction (STEMI). UA and NSTEMI normally result from a partially or intermittently occluded coronary artery, whereas STEMI results from a fully occluded coronary artery.¹ Coronary artery disease (CAD) is a significant cause of mortality and morbidity in women, representing 1 out of 3 deaths in women without race or ethnicity bias.^{2,3}

From 1960 to 1995, the prevalence of CAD in Indian women has risen from 3% to 10% in the urban population, whereas 2%–4% in the rural population.⁴ Diabetes mellitus, smoking, hypertension, dyslipidaemia, as well as autoimmune and inflammatory diseases such as lupus or rheumatoid arthritis have been established as major cardiovascular risk factors in women. Apart, polycystic ovary, early menopause, and history of preeclampsia may also contribute to the development of ACS in women.⁵ The present study was conducted to assess the prevalence of acute coronary syndrome in a tertiary care hospital.

MATERIALS AND METHODS

The prospective study was a conducted among 200 patients in Department of General Medicine, Rama Medical College Hospital and Research Centre, Hapur, Uttar Pradesh (India) over a period of 1 year. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute and written consent was taken from the patient after explaining the study. All

in patients diagnosed with ACS of age ≥ 18 years of age were included in the study. The patients, those who were not willing to participate and patients with insufficient medical records, were excluded from the study. Patient's demographics, reason for admission, final diagnosis, comorbidities, past medical history, past medication history, family history, social history, length of

hospital stay, ECG findings, relevant laboratory investigation data, use of medications and use of invasive cardiac procedures and interventions were collected. The recorded data was compiled, and data analysis was done using SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA). P-value less than 0.05 was considered statistically significant.

Table 1: Demographic characteristics among the study population

Variables	N=200	%
Gender		
Male	146	73
Female	54	27
Age Group (in years)		
25-30	29	14.5
31-35	32	16
36-40	65	32.5
41-45	74	37
Age in years (Mean \pm SD)	34.22 \pm 4.59	

Table 2: Clinical presentation of the study population

Presentation	N=200	%
STEMI	72	36
NSTEMI	102	51
Unstable Angina	26	13

RESULTS

A total of 200 patients were included in the study. In the present study 73% were males and 27% were females. Maximum patients were of age group 41-45yrs. The mean age of the patient was 34.22 \pm 4.59 years. Among 200 patients, 51% were having NSTEMI, 36% were having STEMI, and 13% were having UA.

DISCUSSION

The global burden of CVDs is on rapid rise due to a predominant increase in the incidence and prevalence of the same in the developing countries. India, a developing nation, is following the same trend. During the past three decades, the prevalence of most of the cardiovascular risk factors including smoking, diabetes mellitus, hypertension, and dyslipidaemia has increased markedly in India.^{6,7}

A total of 200 patients were included in the study. In the present study 73% were males and 27% were females. Maximum patients were of age group 41-45yrs. The mean age of the patient was 34.22 \pm 4.59 years. Among 200 patients, 51% were having NSTEMI, 36% were having STEMI, and 13% were having UA.

Sharma et al also showed that ACS occurred a decade earlier in South Asians compared to the Western population.⁸

Medagama et al also showed no significant difference in age distribution of patients with all groups of ACS, with the majority being between 51 and 70 years of age.⁹

Two Indian studies, Kerala ACS registry¹⁰ and CREATE,¹¹ respectively, reported a 22.6% and 23.6% prevalence of ACS.

The mean age for the first presentation of acute myocardial infarction (MI) in Indians is 53 years.¹²

Studies carried out in India, and other places suggest that Asians in general and Indians in particular are at an increased risk of MI at a younger age (<40 years).¹³

In a study conducted on 400 patients by Wadkar et al., clinical and angiographic profile of young patients with ACS, in the Department of Cardiology, Lokmanya Tilak Municipal General Hospital, Sion, Mumbai, showed males were 93% whereas female patients were 7%.¹⁴

CONCLUSION

The present study concluded that maximum patients of acute coronary syndrome were of age group 41-45yrs. 51% were having NSTEMI, 36% were having STEMI, and 13% were having UA.

REFERENCES

1. Kristen JO. Acute coronary syndrome. Am J Neurol 2009;109:42-52.
2. Catherine K, Debi S, Janic P, James L, Anand SS. Referrals in acute coronary events for cardiac catheterization: The RACE CAR Trial. Can J Cardiol 2010;8:e290-6.
3. Thom T, Haase N, Rosamond W, Howard VJ, Rumsfeld J, Manolio T, et al. Heart disease and stroke statistics-2006 update: A report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Circulation 2006;113:e85-151.
4. Gupta RV. Coronary Heart Disease Epidemiology in India: The Past, Present and Future. New Delhi, India: Jaypee; 2001. 6-28.
5. Mehilli J, Presbitero P. Coronary artery disease and acute coronary syndrome in women. Heart 2020;106:487-92.

6. Kasliwal RR, Kulshreshtha A, Agrawal S, Bansal M, Trehan N. Prevalence of cardiovascular risk factors in Indian patients undergoing coronary artery bypass surgery. *J Assoc Physicians India* 2006;54:371-5.
7. Gupta R. Meta-analysis of prevalence of hypertension in India. *Indian Heart J* 1997;49:43-8.
8. Sharma R, Bhairappa PSR, Manjunath CN. Clinical characteristics, angiographic profile and in hospital mortality in acute coronary syndrome patients in south indian population. *Heart India*. 2014;2(3):65-9
9. Medagama A, Bandara R, De Silva C, Galgomuwa MP. Management of acute coronary syndromes in a developing country; time for a paradigm shift? an observational study. *BMC Cardiovasc Disord*. 2015;15:133.
10. Mohanan PP, Mathew R, Harikrishnan S, Krishnan MN, Zachariah G, Joseph J, et al. Presentation, management, and outcomes of 25 748 acute coronary syndrome admissions in Kerala, India: results from the Kerala ACS Registry. *Eur Heart J* 2013;34:121-9.
11. Xavier D, Pais P, Devereaux PJ, Xie C, Prabhakaran D et al. CREATE registry investigators. Treatment and outcomes of acute coronary syndromes in India (CREATE): A prospective analysis of registry data. *Lancet* 2008; 26; 371: 1435-42.
12. Sharma M, Ganguly NK. Premature coronary artery disease in Indians and its associated risk factors. *Vasc Health Risk Manag* 2005;1:217-25.
13. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): Case-control study. *Lancet* 2004;364:937-52.
14. Wadkar A, Sathe A, Bohara D, Shah H, Mahajan A, Nathani P. Clinical and angiographic profile of young patients (<40 years) with acute coronary syndrome. *J Indian Coll Cardiol* 2014; 4: 95-100.

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