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Study of clinical profile of ischemic heart disease patients admitted in tertiary care hospital

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ABSTRACT

Background: Cardiovascular diseases have assumed epidemic proportions in India. The study was undertaken to know the clinical presentation of ischemic heart disease. It also included time lapsed between symptoms and admission which is important outcome indicator. The aim and objective was to study the clinical profile of ischemic heart disease patients admitted in tertiary care hospital.

Methods: The study was done in IHD patients admitted in ICU of tertiary care hospital. The study period was June 2014 to June 2015. Detailed clinical data like symptoms, signs, associated illnesses, general and systemic examination was included.

Results: 33.59% patients were brought to tertiary care centre within 3-6 hours of onset of symptoms. Out of total, 63.61% presented with chest pain not relieved in ten minutes followed by 21.89% patients who had chest pain which relieved in ten minutes. 68.95% patients had associated sweating, 35.62% had associated breathless-ness and 16.03% had associated swelling over feet. Associated symptoms with chest pain were not exclusive of each other. 62.85% patients were of STEMI, 21.37% patients were classified as NSTMI and 15.78% were patients of unstable angina. Cardiac failure was seen in 69.52% patients.

Conclusions: Most of the patients were of STEMI with most common complain of chest pain and most common clinical complication was cardiac failure in the patients.

Keywords: Clinical profile, Ischemic heart disease, Chest pain not relieved in 10 minutes, Chest pain which relieved in 10 minutes, Clinical complications

INTRODUCTION

"In earlier times, starvation consigned languishing bodies to death; now, prosperity plunges them into the grave"—Lucretius.

Cardiovascular diseases (CVD) already places a significant economic burden on low- and middle-income

countries, the resources available for its management in these countries are limited because of competing health priorities. It is, nevertheless, essential to recognize that the transition to lower levels of infectious diseases and higher levels of non-communicable diseases is already under way; failure to act now will result in large increases in avoidable CVD, placing serious pressures on the national economies.¹

Mortality rates vary widely in different parts of world. 7.2 million deaths and 12.8 per cent total deaths of IHD are reported worldwide, with SEAR countries showing 25.28% of deaths due to IHD.² The highest coronary mortality is seen at present in the European region followed by SEAR.³ Cardiovascular diseases have assumed epidemic proportions in India as well. The global burden of diseases (GBD) study reported the estimated mortality from coronary heart disease (CHD) in India at 1.6 million in the year 2000. A total of nearly 64 million cases of CVD are likely in the year 2015, of which nearly 61 million would be CHD cases (the remaining would include stroke, rheumatic heart disease and congenital heart diseases). Deaths from this group of diseases are likely to amount to be a staggering 3.4 million.⁴

Aim and objectives

To study the clinical profile of ischemic heart disease patients admitted in tertiary care hospital.

METHODS

The present study has been carried out on the patients of ischemic heart disease admitted in Intensive care unit of tertiary care hospital attached to a medical college. It is a hospital based descriptive study. The study was carried out in civil hospital Solapur attached to medical college. The study duration was from January 2014 to June 2015 i.e. 18 months. All patients diagnosed as ischemic heart disease admitted in intensive care unit of a tertiary care centre in study period were included. Patients who did not give consent for participation in the study were excluded. Permission from medicine department is taken for the present study of ischemic heart disease in intensive care unit. Informed written consent was taken in local language from the patients before participation in the study. Separate proforma for each individual was filled. Identity of patients was not revealed. History was obtained from the patient and his/her relatives.

Detailed clinical data like symptoms, signs and associated illnesses, general and systemic examination is collected and included in the study. Weight was entered in kilograms and height in centimeters from the history sheet. Pulse rate was counted for complete one minute. Blood pressure was also taken at the time of examination. Waist circumference was measured with non-stretchable measuring tape. Investigations like electrocardiogram (ECG), lipid profile, during present admission are also considered in the study. Dyslipidemia was defined by presence of any one of the following: LDL >130 mg/dl, TG≥150 mg/dl or HDL <40 mg/dl in men and <50 mg/dl in women.⁵

Outcome during present admission and hospital stay of present admission was also included in the study.

Percentages and Chi square (χ^2) for goodness of fit test were used for analysis of data.

RESULTS

The present hospital based descriptive study was carried out among 393 patients and above in the intensive care unit under Department of Medicine of a tertiary care Centre. Out of total 393 patients, 55.47% were males and 44.53% were females.

Table 1: Distribution of patients on the basis of time lapsed from onset of symptoms to hospital admission.

Time period lapsed	Number of patients (%)
<1 hour	7 (1.78)
1 hour to 3 hours	21 (5.34)
3 hours to 6 hours	132 (33.59)
6 hours to 12 hours	84 (21.37)
12 hours to 1 day	31 (7.89)
≥1 day	118 (30.03)
Total	393 (100)

The χ^2 for goodness of fit=215.47, df=5, p<0.0001, highly significant.

Maximum numbers of patients 132 (33.59%) were brought to tertiary care centre within 3-6 hours of onset of symptoms and minimum i.e. 7 (1.78%) patients visited hospital within 1 hour of onset of symptoms, which was statistically significant at p<0.0001 (Table 1).

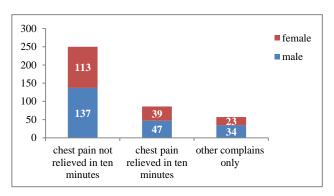


Figure 1: Distribution of patients according to the chief complains at the time of admission.

Out of total 393 patients, 63.61% presented with chest pain not relieved in ten minutes followed by 21.89% patients who had chest pain which was relieved in ten minutes. Out of total, 14.50% patients had no chest pain but symptoms mentioned as others. This included vomiting, nausea, abdominal pain and constitutional symptoms.

Out of the patients with chest pain not relieved in ten minutes 250 (100%) patients, 220(88%) had associated sweating. Breathlessness was seen in 99 (39.6%) study participants. Swelling was seen 50 (20%) patients in this group. Out of 86 (100%) patients with chest pain relieved in ten minutes, 51 (59.30%) had associated sweating. Breathlessness was seen in 41 (47.67%) study participants. Swelling was seen in 13 (15.12%) patients in this group (Table 2).

Table 2: Distribution of patients according to duration of chest pain and associated complains at the time of admission.

Associated complains	Patients with chest pain not relieved in ten minutes	Patients with chest pain relieved in ten minutes	Total patients
	n=250 (%)	n=86 (%)	N=393 (%)
Sweating	220 (88)	51 (59.30)	271 (68.95)
Breathless-ness	99 (39.6)	41 (47.67)	140 (35.62)
Swelling over feet	50 (20)	13 (15.12)	63 (16.03)

Out of total 393 patients, 271 (68.95%) had associated sweating, 140 (35.62%) had associated breathless-ness and 63 (16.03%) had associated swelling over feet. Associated symptoms with chest pain were not exclusive of each other. More than one associated symptoms may be present in the patients (Table 2).

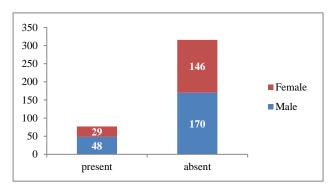


Figure 2: Distribution of patients according to family history of coronary heart disease.

Out of total 393 patients of ischemic heart disease, family history of coronary heart disease was present in 77 (19.59%) patients. Total 316 (80.41%) patients had no family history of ischemic heart disease.

Table 3: Distribution of patients according to body mass index of patients.

Categorization	BMI	Number of patients (%)
Underweight	<18.5	37 (9.42)
Normal range	18.5-24.99	168 (42.75)
Pre-obese	25.0-29.99	115 (29.26)
Obese Class I	30.0-34.99	57 (14.50)
Obese Class II	35.0-39.99	16 (4.07)
Total		393 (100)

 χ^2 for goodness of fit test= 196.35, df=4, p<0.01, statistically significant.

Out of total 393 patients, maximum patients belong to normal range of BMI 168 (42.75%), which was statistically significant at p<0.01 (Table 3).

Out of total 393 patients, 247 (62.85%) were classified as STEMI on basis of clinical picture and ECG findings. Out of total, 84 (21.37%) patients were classified as NSTMI and 62 (15.78%) were patients of unstable angina on the basis of clinical picture, ECG findings and cardiac enzyme studies (Table 4).

Table 4: Classification of patients according to clinical picture, ECG changes suggestive of ischemic heart disease, and cardiac biomarkers.

	Male (%)	Female (%)	Total (%)
STEMI	139 (35.36)	108 (27.48)	247 (62.84)
NSTMI	46 (11.71)	38 (9.66)	84 (21.37)
UA	33 (8.40)	29 (7.37)	62 (15.77)
Total	218 (55.47)	175 (44.53)	393 (100)

Table 5: Distribution of patients having clinical complications.

Clinical complication	Number of patients (%)
Cardiogenic shock	9 (8.57)
Cardiac failure	73 (69.52)
Arrhythmias	4 (3.81)
Other complications	13 (12.38)
Cardiogenic shock, cardiac failure	2 (1.91)
Cardiogenic shock, other complications	1 (0.95)
Cardiac failure and arrhythmias	1 (0.95)
Cardiac failure and other complications	2 (1.91)
Total number of patients having complications	105 (100)

 χ^2 value for goodness of fit test=322.05, d.f.=7, p<0.001; significant.

Out of the patients presenting with clinical complications 105 (100%), maximum patients 73 (69.52%) had cardiac failure. Patients having cardiogenic shock as complication were 9 (8.57%). Arrhythmias were seen as complication in 4 (3.81%) patients. 6 (5.72%) patients had more than one complications mentioned above. Other clinical complications were seen in 13 (12.38%) patients (Table 5).

Most common clinical complication seen in ischemic heart disease patients was cardiac failure which was statistically significant at p<0.001.

Outcome of ischemic heart disease patients was studied during this hospital admission. The results shown that, maximum 286 (72.77%) patients were discharged after symptomatic relief. Out of total, 68 (17.30%) patients died during this hospital stay, 37 (9.42%) patients took discharge against medical advice (DAMA) and only 2 (0.51%) patients were referred to higher centre (Table 6).

Table 6: Distribution of patients according to outcome.

Outcome of patient	Male (%)	Female (%)	Total (%)
Discharged	158 (40.20)	128 (32.57)	286 (72.77)
Died	34 (8.65)	34 (8.65)	68 (17.30)
Discharge against medical advice	26 (6.62)	11 (2.80)	37 (9.42)
Transferred to other hospital	0	2 (0.51)	2 (0.51)
Total	218 (55.47)	175 (44.53)	393 (100)

 χ^2 value for goodness of fit=500.57 d.f.=3, p<0.001, highly significant.

Maximum numbers of ischemic heart disease patients brought to tertiary care centre were discharged 286 (72.77%) after symptomatic relief, which was statistically significant at p<0.001.

DISCUSSION

Distribution of patients on the basis of time lapsed from onset of symptoms to hospital admission shows that maximum numbers of patients i.e. 33.59% were brought to tertiary care centre within 3-6 hours while only 7 (1.78%) patients visited hospital within 1 hour of onset of symptoms. In a study carried by Vaz et al 45.48% had 0-6 hours of time gap between onset of symptoms and treatment.^{6,7} 13.70% patients had time gap of 6-12 hours between onset of symptoms and treatment. Patients with time gap of 12-24 hours between onset of symptoms and treatment were 5.61% and 27.10% patients presented one day after the onset of symptoms. Similar findings were observed in a study carried out by Kakade et al.8

Distribution of patients according to chief complains for admission showed that out of total 393 study participants, total 85.50% had chest pain. Out of total, 63.61% presented with chest pain not relieved in ten minutes followed by 21.89% patients who had chest pain which relieved in ten minutes. Out of total, 14.50% patients had no chest pain but symptoms mentioned as others. Out of total 393 patients, 68.95% had associated sweating, 35.62% had associated breathless-ness and 16.03% had associated swelling over feet. In a cross-sectional observational survey carried out by Nagamalesh et al majority, 93% patients presented with history of chest pain, among patients with chest pain 78% had typical chest pain, rest of the patients had atypical pain. In 196 (65%) of patients, who were presented to hospital had history of dyspnea at rest. In 4 (1.3%) of patients had history of syncope and 4 (1.3%) were asymptomatic. In small number of patients, 3 patients (1%) were presented to hospital with history of cardiac arrest and were resuscitated. In a prospective study by Singh et al, the commonest presenting symptom was chest pain (90%), followed by sweating (75%) and breathlessness (60%). 10 Out of total 200 patients, 56% presented with giddiness, 10% presented with vomiting and 4% presented with abdominal pain. The findings were comparable to present study.

Out of total 393 patients of ischemic heart disease, family history of coronary heart disease was present in 19.59% patients, male patients were 12.21% and female patients having family history of coronary heart disease were 7.38%. In a hospital based study carried out by Sharma, positive family history of CAD was seen in 9.73% patients.¹¹ In a case-control study by Zodpey et al, 16.98% had family history of coronary heart disease. Out of total 393 patients of ischemic heart disease. 12

Distribution of patients according to body mass index of patients showed that, 42.75% patients had BMI in normal range i.e. 18.5- 24.99 followed by 29.26% patients having BMI in the range of 25-29.99. In a case-control study carried out by Gupta et al in Lok Navak Hospital. New Delhi, out of 100 cases, 4% patients had BMI<18.5, 63% patients had BMI between 18.5 to 24.9, 25% patients had BMI between 25 to 29.9 and 8% patients had BMI more than 30.¹³ The findings are similar to present study. In a study carried out by Meenakshisundaram et al, BMI was below 23 in 48.2% of patients and below 21 in 22.5%.14 In CREATE study, they found that, less than a third of the patients were overweight (body-mass index >25 mg/kg2), and only about 7% were obese (body-mass index >30 mg/kg2).15 The findings are comparable to present study.

Classification of patients according to clinical picture, ECG changes suggestive of ischemic heart disease, and cardiac biomarkers showed that 62.85% patients were classified as STEMI on basis of clinical picture and ECG findings. Out of total, 21.37% patients were classified as NSTMI and 15.78% were patients of unstable angina classified on the basis of clinical picture, ECG findings and cardiac enzyme studies. In a hospital based study carried out by Sharma, most common presentation in ACS was STEMI with 995 (63.7%) patients followed by UA 390 (25%) and NSTEMI 177 (11.3%). 11 In a study carried out by Gupta et al, out of total, 75.4% patients suffered from STEMI while remaining 25.6% cases were classified as UA/NSTMI. 13 The findings are comparable to present study.

Distribution of patients according to clinical complications of ischemic heart disease showed that, 26.72% patients had one or more clinical complications of ischemic heart disease. Patients having cardiac failure

were 18.58%. Patients having cardiogenic shock as complication were 2.29%. Arrhythmias were seen as complication in 1.02% patients. Patients having more than one complications mentioned above were 1.52%. Other clinical complications were seen in 3.31% patients. In a hospital based study carried out by Sharma.¹¹ Cardiogenic shock was seen in total 2.9% patients, 0.7% patients had complete heart block. Ventricular tachycardia occurred in 0.5% patients. In a study carried out by Singh et al, 25% patients developed complications in form of arrhythmia - 50%, cardiac failure - 40%, CVA - 6% and mechanical complication like VSD, MR, and PMD in 4%. 10 The results of present study showed that, 287 (72.77%) patients were discharged after symptomatic relief, 68 (17.30%) patients died during this hospital stay, 37(9.42%) patients took discharge against medical advice (DAMA) and 2 (0.51%) patients were referred to higher centre. In a hospital based study carried out by Vaz et al in Goa, 21.86% patients died during the hospital stay, and remaining 78.82% survived.^{6,7} The findings were similar to present study.

CONCLUSION

Maximum numbers of patients i.e. 33.59% were brought to tertiary care centre within 3-6 hours of onset of symptoms. Time lapse between onset of symptoms and treatment is crucial for better outcome and should be reduced to less than 30 minutes in maximum patients. Maximum patients 85.50% presented with chest pain while 14.50% patients had no chest pain but symptoms mentioned as others which included vomiting, nausea, abdominal pain and constitutional symptoms. These 15% patients may be missed due to nonspecific clinical presentation and should be investigated by ECG and biomarkers as required. Most common clinical complication seen in patients was cardiac failure in the patients. 72.77% patients brought to tertiary care Centre were discharged after symptomatic relief, shows better outcome in maximum cases if treatment is availed.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- Haines A, Patterson D, Rayner M, Hyland K. Prevention of cardiovascular disease. Occas Pap R Coll Gen Pract. 1992;58:67-78.
- World Health Organization, Disease and Injury, Regional Estimates, Cause Specific Estimates for 2008, Geneva 27: WHO Press; 2011.
- Shah B, Kumar N, Menon G, Khurana S, Kumar H. Assessment of burden of non-communicable diseases. Delhi WHO India. 2010;161. Available at: http://onlinelibrary.wiley.com/doi/10.1002/cbdv.200 490137/abstract\nhttp://scholar.google.com/scholar?

- hl=en&btnG=Search&q=intitle:Assessment+of+Bur den+of+Non-Communicable+Diseases#6 Accessed on 14-4-2015.
- Ministry of Health and Family Welfare, Government of India, Burden of disease in India, Background papers for the National Commission on Macroeconomics. New Delhi; 2005.
- Gupta S, Gupta VVK, Gupta R, Arora S, Gupta VVK. Demographic profile and prevalence of risk factors and their correlation with STEMI, NSTEMI and premature CAD in documented CAD patients. 2012;1(4):164-72.
- Vaz FS, Ferreira AM, Kulkarni MS, Motghare DD. Utility of Logistic Regression Analysis to Estimate Prognosis in Acute Myocardial Infarction. Indian J Community Med. 2009;34(4):371-2.
- Vaz FS, Ferreira AM, Kulkarni MS, Motghare DD. Predictors of prognosis in patients with acute myocardial infarction. International journal of science and nature. 2013;4(2):284-7.
- Kakade SV, Tyagi NK, Kadam RN. Application of Logistic Regression to Estimate Prognosis. Indian J Community Med. 2006;31(2):2-5.
- Nagamalesh UM, Prakash VS, Hegde AV, Ambujam N. Cross-Sectional Observational Survey Evaluating Myocardial Infarction, Risk Profile and Management. Int J Clin Cases Investigat. 2013;5(5):69-77.
- 10. Singh PS, Singh G, Singh SK. Clinical profile and risk factors in acute coronary syndrome. Indian Acad Clin Med J. 2013;14(2):130-2.
- Sharma R, Bhairappa S, Prasad SR, Manjunath CN. Clinical characteristics, angiographic profile and in hospital mortality in acute coronary syndrome patients in south indian population. Heart India. 2014;2:65-9.
- 12. Zodpey SP, Shrikhande SN, Negandhi HN, Ughade SN, Joshi PP. Risk factors for acute myocardial infarction in Central India: A case-control study. Indian J Community Med. 2015;40:19-26.
- Gupta R, Kishore J, Bansal Y, Daga MK, Jiloha RC, Singal R, Ingle GK. Relationship of psychosocial risk factors, certain personality traits and myocardial infarction in Indians: A case-control study. Indian J Community Med. 2011;36:182-6.
- Meenakshisundaram R, Agarwal D, Chinnaswamy R, Ponniah T. Risk factors for myocardial infarction among low socioeconomic status South Indian population. Diabetol Metabol Syndrome. 2010;2:32.
- Yusuf S. Treatment and outcomes of acute coronary syndromes in India (CREATE): a prospective analysis of registry data, Lancet. 2008;371:1435-42.

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