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THE CLINICAL SPECTRUM OF ACUTE CORONARY SYNDROMES IN A TERTIARY CARE HOSPITAL IN ROHILKHAND REGION.

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Abstract

Introduction: The most frequent causes of death for people with CAD are acute coronary syndromes (ACS), which include unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI), and ST-segment elevation myocardial infarction (STEMI). Globally, coronary artery disease (CAD) is the primary cause of both mortality and morbidity. The industrialized world has experienced a significant decline in the death rate from ACS over the last 20 years as a result of the development of numerous invasive and noninvasive therapeutic approaches. **Methods**: Case files of every patient hospitalized to the coronary care unit of the tertiary care hospital in the Rohilkhand region, under the department of cardiology. Excluded from the research were those with established non-cardiac chest discomfort and those that were released from the hospital before the course of treatment was finished for any reason. For analytical purposes, the cases were divided into two groups: those with STEMI and those with NSTEMI/UA. **Results:** 90% of STEM ACS patients had coronary angiography results. DVD (51.02%) was the most frequently performed angiography, with left main (8.16%), SVD (4.08%), TVD (18.37%), and insignificant CAD (8.16%) following. In contrast, the most prevalent angiogram in the NSTEMI/UA ACS group was DVD (58.82%), which was followed by left main (1.96%), SVD (3.92%), TVD (15.69%), and insignificant CAD (5.88%). The mortality rate was 16% and 84% of patients survived. **Conclusion**: According to this report, there is still a significant fatality rate from ACS. The mean age of the female patients at presentation was significantly higher than that of the male patients. Compared to STEMI, NSTEMI/UA is more prevalent in female ACS patients. Female patients with NSTEMI/UA need special care because they are more likely to die than male patients. Elderly patients and those with diabetes mellitus should receive more cautious care in order to reduce the fatality rates from STEMI.

Keywords: ACS, CAD, STEMI

Introduction

Acute coronary syndromes (ACS), which include unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI), and ST-segment elevation myocardial infarction (STEMI), are the most common causes of mortality in patients with CAD. Coronary artery disease (CAD) is the leading cause of death and morbidity worldwide.[1,2] Over the past 20 years, the developed world has seen a considerable decrease in the death rate associated with ACS due to the advent of a vast array of invasive and noninvasive therapy techniques.[3,4] However, Indian death rates are still very high.[5–7]

Indians experience CAD 5–10 years sooner than other people worldwide, and the country's 35–65 year old productive workforce is primarily impacted by this unusual condition.[8] The prevalence of CAD and the incidence of ACS also are very high among Indians.[9,10] India has the highest burden of ACS in the world.[7] The rising incidence of ACS in Indians may be related to the changes in the lifestyle, the westernization of the food practices, the increasing prevalence of diabetes mellitus and probably genetic factors. The present study was aimed to evaluate the clinical spectrum of Acute coronary syndromes in a tertiary care hospital in Rohilkhand region.

Methods

Case files of every patient hospitalized to the coronary care unit of the tertiary care hospital in the Rohilkhand region, under the department of cardiology. Excluded from the research were those with established non-cardiac chest discomfort and those that were released from the hospital before the course of treatment was finished for any reason. For analytical purposes, the cases were divided into two groups: those with STEMI and those with NSTEMI/UA. STEMI was defined as cases of chest pain, uneasiness, and elevation of the ST segment in electrocardiographic (ECG) leads or suspected new onset left bundle branch block in the ECG.

The area of the myocardium that was infarcted, the hemodynamic subset (Killip class), the conduction abnormalities and related mechanical complications, the administration of thrombolytic therapy, postinfarction angina, reinfarction, pericarditis, and arrhythmias were all analyzed in cases of STEMI. In patients with ACS, the causes of death and risk factors for high mortality were also examined.

The clinical characteristics and results of STEMI patients who were over 75 years old were contrasted with those of patients who were younger. Clinical parameters were compared between STEMI and NSTEMI/UA, as well as between males and females.

Statistical Analysis

Results

Baseline characteristics

In our study, the most common age group was 51-60 years (55%) followed by ≤30 years (8%), 41-50 years (23%), and >60 years (14%). 67% of patients were male and 33% of patients were female. Male to female ratio was 1:2.03. The most common comorbidity was hypertension (55%) followed by diabetes mellitus (45%) and dyslipidemia (29%).

Table 1: Baseline characteristics

Baseline characteristics	Frequency (n=100)	Percentage (%)
Age group (years)		
≤30	8	8%
41-50	23	23%
51-60	55	55%
>60	14	14%
Gender		
Male	67	67%
Female	33	33%
Comorbidity		
Hypertension	55	55%
Diabetes Mellitus	45	45%
Dyslipidemia	29	29%

Coronary angiography

Coronary angiography was contained in 88%. The most common angiography was DVD (55%) followed by insignificant CAD (7%), SVD (4%), TVD (17%), and left main (5%). 12% of patients were normal (Table 2).

Table 2: Coronary angiography

Coronary angiography	Frequency (n=100)	Percentage (%)
Normal	12	12%
Insignificant CAD	7	7%
SVD	4	4%
DVD	55	55%
TVD	17	17%
Left main	5	5%

Acute coronary syndrome

In our study, 49% of patients had STEM ACS and 51% of patients had NSTEMI/UA ACS (Table 3).

Table 3: Acute coronary syndrome

Acute coronary syndrome	Frequency (n=100)	Percentage (%)
STEM	49	49%
NSTEMI/UA	51	51%

Association between Coronary angiography and ACS

In STEM ACS, coronary angiography was obtained in 90%. The most common angiography was DVD (51.02%) followed by Insignificant CAD (8.16%), SVD (4.08%), TVD (18.37%), and left main (8.16%) while in NSTEMI/UA ACS group, the most common angiography was DVD

(58.82%) followed by Insignificant CAD (5.88%), SVD (3.92%), TVD (15.69%), and left main (1.96%) (Table 4).

Table 4: Association between Coronary angiography and ACS

Coronary angiography	Acute coronary syndrome		P Value
	STEM (n=49)	NSTEMI/UA (n=51)	
Normal	5 (10.20%)	7 (13.73%)	0.738
Insignificant CAD	4 (8.16%)	3 (5.88%)	
SVD	2 (4.08%)	2 (3.92%)	
DVD	25 (51.02%)	30 (58.82%)	
TVD	9 (18.37%)	8 (15.69%)	
Left main	4 (8.16%)	1 (1.96%)	

Outcome

In our study, the mortality rate was 16% and 84% of patients survived (Table 5).

Table 5: Outcome

Outcome	Frequency (n=100)	Percentage (%)
Expired	16	16%
Survived	84	84%

Discussion

The most common age group was 51-60 years (55%) followed by ≤30 years (8%), 41-50 years (23%), and >60 years (14%). 67% of patients were male and 33% of patients were female. Male to female ratio was 1:2.03. The most common comorbidity was hypertension (55%) followed by diabetes mellitus (45%) and dyslipidemia (29%). In a study by **Singh et al** there were 207 patients above the age of 45 years with STEMI in the present study and their clinical characteristics are compared with those at younger ages (<45 years).[11] In a study by **Perers et al** among the 1,744 patients with ACS, 31% were women. They were older than the men and more often tended to present with unstable angina, especially the low-risk type. The proportion of patients with ST elevation MI was similar in women and men but non-ST elevation MI was more common in men. Previous CABG rates were generally low, and women had been subjected to CABG half as often as men.[12] In a study by **Xavier et al** the mean age of these patients was 57.5 (SD 12.1) years; patients with STEMI were younger (56.3 [12.1] years) than were those with non-STEMI or unstable angina (59.3 [11.8] years).[7]

In STEM ACS, coronary angiography was obtained in 90%. The most common angiography was DVD (51.02%) followed by Insignificant CAD (8.16%), SVD (4.08%), TVD (18.37%), and left main (8.16%) while in NSTEMI/UA ACS group, the most common angiography was DVD (58.82%) followed by Insignificant CAD (5.88%), SVD (3.92%), TVD (15.69%), and left main (1.96%). In a study by **Iqbal and Barkatak**i a total of 704 consecutive cases of ACS were included in the present study. Out of 704 patients, 510 (72.4%) presented with STEMI and 194

(27.6%) presented with NSTEMI/UA. Of the 194 patients with NSTEMI/UA, 121 (62.37%) presented with NSTEMI and 73 (37.6%) presented with UA. Males outnumbered females in STEMI, but in NSTEMI/UA, both the sexes were almost equal.[13] In a study by **Misiriya et al** six hundred forty-six cases (61.9%) of STEMI presented with central chest discomfort, 296 (28.4%) with left-sided chest pain, 69 (6.6%) with right-sided chest pain and 16 (1.5%) with jaw pain. Seventeen cases presented with acute onset of palpitation and/ or collapse due to ventricular tachycardia. The majority of cases were transported to the hospital by either ambulance or motor cars.[14]

Conclusion

This study shows that the ACS death rate is still quite high. Compared to male patients, female patients had a considerably greater mean age at presentation. NSTEMI/UA is more common in female ACS patients than STEMI. Compared to male patients, female patients with NSTEMI/UA have a higher risk of death and require special management. To lower the death rates in STEMI, elderly patients and those with diabetes mellitus should receive more cautious care. In our study, the death rate for inferior wall STEMI was greater than that for anterior wall STEMI. Patients from mountainous locations had a greater mortality rate than those from plain/Terai regions. So, when handling STEMI and NSTEMI patients, these considerations should be made.

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