ORIGINAL RESEARCH

Clinical Profile and one month Outcomes of Women with Acute Coronary Syndrome as Initial Presentation of Ischemic Heart Disease

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Abstract
Background: Acute coronary syndrome (ACS) encompasses a range of clinical conditions, including ST-elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI), and unstable angina. The present study was conducted for assessing clinical profile and one month outcome of women with acute coronary syndrome as a first manifestation of ischemic heart disease.
Materials & methods:A total of 100 subjects were enrolled. The study focused on female patients who were being evaluated for the first time with a diagnosis of acute coronary syndrome (ACS). Inclusion criteria encompassed women aged 18 years and older who had received a diagnosis of ACS. Data collection occurred in two distinct phases: during hospitalization and through a 30-day follow-up via telephone. The initial survey was conducted upon the patient's first presentation with ACS, while the follow-up survey was administered 30 days post-discharge. Information was gathered from the patients and documented in a designated Case Report Form, ensuring that comprehensive demographic and clinical information was recorded systematically
Results:A total of 100 subjects were enrolled. Mean age of the patients was 61.7 years. Mean BMI of the patients was 23.9 Kg/m^2. Out of 100 patients, mortality occurred in 5 percent of the patients. Among NSTEMI patients, diabetes, hypertension, hypothyroidism and CKD was seen in 16 patients, 21 patients, 10 patients and 5 patients respectively. Among STEMI patients, diabetes, hypertension, hypothyroidism and CKD was seen in 25 patients, 31 patients, 12 patients and 8 patients respectively. Overall, in hospital complications was seen in 16.67 percent, 14 percent and 10 percent of the patients with NSTEMI, STEMI and UA respectively.
Conclusion: Periodic screening of elderly females should be done for decreasing the morbidity and mortality associated with disease.
Key words: Acute coronary syndrome, Ishemic heart disease

INTRODUCTION

Acute coronary syndrome (ACS) encompasses a range of clinical conditions, including ST-elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI), and unstable angina. It is classified as a form of coronary heart disease (CHD), which accounts for approximately one-third of all fatalities among individuals over the age of 35. While certain types of CHD may present without symptoms, ACS is characterized by the presence of symptoms.[1, 2]ACS represents a clinical expression of CHD and is typically triggered by the rupture of atherosclerotic plaques within the coronary arteries. Key risk factors associated with this condition include smoking, hypertension, diabetes, hyperlipidemia, male gender, sedentary lifestyle, familial obesity, and inadequate dietary habits. Additionally, the use of cocaine can induce vasospasm, further exacerbating the risk. A familial history of early myocardial infarction, particularly before the age of 55, is also considered a significant risk factor.[3, 4]
The diagnosis of acute coronary syndrome (ACS) is fundamentally based on the clinical presentation of the patient, electrocardiogram (ECG) findings, and biochemical markers indicative of myocardial injury. A critical initial decision point for a patient suspected of having ACS is the identification of ST-segment elevations on a 12-lead ECG. The diagnostic approach for non-ST-elevation acute coronary syndromes (NSTEACS), which includes both unstable angina and non-ST-elevation myocardial infarction (NSTEMI), has advanced considerably with the introduction of high-sensitivity troponin (hsTn) assays, which will be elaborated upon in the subsequent section. Additionally, supplementary diagnostic modalities, such as ECG and cardiac magnetic resonance imaging (MRI), can be utilized to identify regional wall motion abnormalities and other signs of myocardial ischemia in individuals with a suspected diagnosis of ACS.[5, 6]Hence; the present study was conducted for assessing clinical profile and 30-day outcome of women with acute coronary syndrome as a first manifestation of ischemic heart disease.

MATERIALS & METHODS

The present study was conducted for assessing clinical profile and 30-day outcome of women with acute coronary syndrome as a first manifestation of ischemic heart disease.A total of 100 subjects were enrolled. The study focused on female patients who were being evaluated for the first time with a diagnosis of acute coronary syndrome (ACS). Inclusion criteria encompassed women aged 18 years and older who had received a diagnosis of ACS. Exclusion criteria included individuals younger than 18 years, those with a history of heart failure or ischemic heart disease, and patients who declined to participate or provide informed consent. Diagnoses included ST-elevation myocardial infarction (STEMI), non-ST-elevation myocardial infarction (NSTEMI), and unstable angina (UA). Data collection occurred in two distinct phases: during hospitalization and through a 30-day follow-up via telephone. The initial survey was conducted upon the patient's first presentation with ACS, while the follow-up survey was administered 30 days post-discharge. Information was gathered from the patients and documented in a designated Case Report Form, ensuring that comprehensive demographic and clinical information was recorded systematically. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. Univariate analysis was done for assessing the level of significance.

RESULTS

A total of 100 subjects were enrolled. Mean age of the patients was 61.7 years. Mean BMI of the patients was 23.9 Kg/m^2. Out of 100 patients, mortality occurred in 5 percent of the patients. In the NSTEMI cohort, 20% of patients exhibited symptoms within 4 hours of onset, while 80% presented after this time frame. Conversely, in the STEMI group, 22% of patients arrived within 4 hours of symptom onset, with 78% presenting later. Additionally, 85% of patients in the unstable angina (UA) group sought medical attention more than 4 hours after the onset of symptoms. Chest pain was seen in 88 percent of the patients. Among NSTEMI patients, diabetes, hypertension, hypothyroidism and CKD was seen in 16 patients, 21 patients, 10 patients and 5 patients respectively. Among STEMI patients, diabetes, hypertension, hypothyroidism and CKD was seen in 25 patients, 31 patients, 12 patients and 8 patients respectively. Overall, in hospital complications was seen in 16.67 percent, 14 percent and 10 percent of the patients with NSTEMI, STEMI and UA respectively.

Table 1: Clinical profile

Variable		Number	Percentage
Mean age			61.7 years
Mean BMI			23.9 Kg/m^2
NSTEMI group (n= 30)	Onset with 4 hrs after symptoms	6	20
	More than 4 hrs after symptoms	24	80
STEMI group (n= 50)	Onset with 4 hrs after symptoms	11	22
	More than 4 hrs after symptoms	39	78
UA group (n= 20)	Onset with 4 hrs after symptoms	3	15
	More than 4 hrs after symptoms	17	85
Chest pain		88	88

Table 2: Risk factors

Risk factors	NSTEMI	STEMI	UA
Diabetes	16	25	10
Hypertension	21	31	12
Hypothyroidism	10	12	3
CKD	5	8	2
COPD	3	8	0
Anemia	3	7	0
Smoking	4	5	0
Family history of CAD	2	5	2

Table 3: In-hospital complications

Complications	NSTEMI	STEMI	UA
Ischemic MR	2	3	0
Cardiac tamponade	1	1	0

Others	2	3	2
Overall complications	5 (16.67%)	7 (14%)	2 (10%)

DISCUSSION

Acute coronary syndrome (ACS) encompasses a spectrum of clinical presentations indicative of acute myocardial ischemia, which includes unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI), and ST-segment elevation myocardial infarction (STEMI). These manifestations, which signify advanced coronary atherosclerosis, are significant contributors to the demand for emergency medical services and subsequent hospital admissions in the United States. A prompt yet comprehensive evaluation of the patient's medical history, along with findings from physical examinations, electrocardiograms, imaging studies, and cardiac biomarker analyses, facilitates precise diagnosis and early risk stratification, both of which are critical for informing treatment decisions. Patients identified as high-risk with UA/NSTEMI frequently undergo an early invasive approach that includes cardiac catheterization and timely revascularization of at-risk viable myocardium. The optimization of clinical outcomes is achievable through revascularization combined with intensive medical management, which encompasses anti-ischemic agents, antiplatelet therapies, anticoagulants, and lipid-lowering medications.[7-10]Hence; the present study was conducted for assessing clinical profile and 30-day outcome of women with acute coronary syndrome as a first manifestation of ischemic heart disease.

A total of 100 subjects were enrolled. Mean age of the patients was 61.7 years. Mean BMI of the patients was 23.9 Kg/m^2. Out of 100 patients, mortality occurred in 5 percent of the patients. In the NSTEMI cohort, 20% of patients exhibited symptoms within 4 hours of onset, while 80% presented after this time frame. Conversely, in the STEMI group, 22% of patients arrived within 4 hours of symptom onset, with 78% presenting later. Additionally, 85% of patients in the unstable angina (UA) group sought medical attention more than 4 hours after the onset of symptoms. Chest pain was seen in 88 percent of the patients. Ralapanawa U et al assessed the risk factors of patients with types of acute coronary syndrome presenting to a tertiary care hospital. The cohort of 300 patients exhibited a mean age of 61.3 years, with a notable prevalence of male patients across all three categories of acute coronary syndrome (ACS) in comparison to their female counterparts. The analysis revealed that unstable angina (UA) patients had a higher average age of 62.2 years, while non-ST elevation myocardial infarction (NSTEMI) patients averaged 61.9 years, in contrast to the 59.2 years observed in ST elevation myocardial infarction (STEMI) patients; however, these differences were not statistically significant. Smoking was prevalent among 55.8% of STEMI patients, 39.8% of UA patients, and 35.5% of NSTEMI patients, suggesting a significant correlation between smoking and STEMI. Alcohol consumption was reported by approximately 54.5% of STEMI patients, 35.4% of UA patients, and 32.7% of NSTEMI patients, with a strong association identified between alcohol use and STEMI (P = 0.006). Hypertension (HT) was present in 51.8% of NSTEMI patients, 47.8% of UA patients, and 29.9% of STEMI patients, indicating a significant relationship between HT and both UA and NSTEMI. Diabetes mellitus (DM) was found in 33.6% of UA patients and 30.0% of NSTEMI patients, while only 22.1% of STEMI patients had DM, with no significant difference noted. Dyslipidemia was reported in 15.0% of UA patients, 25.5% of NSTEMI patients, and 11.7% of STEMI patients. Furthermore, a strong association was observed between a history of prior ACS or stable angina and the occurrence of NSTEMI and UA.Smoking and alcohol abuse are significantly associated with STEMI.[11]

Among NSTEMI patients, diabetes, hypertension, hypothyroidism and CKD was seen in 16 patients, 21 patients, 10 patients and 5 patients respectively. Among STEMI patients, diabetes, hypertension, hypothyroidism and CKD was seen in 25 patients, 31 patients, 12 patients and 8 patients respectively. Overall, in hospital complications was seen in 16.67 percent, 14 percent and 10 percent of the patients with NSTEMI, STEMI and UA respectively. Singh A et al, conducted a survey of assessment and management of coronary Heart Disease Patients (SMART) in India.A total of 1,340 patients with a confirmed diagnosis of acute coronary syndrome (ACS) who survived their hospitalization were included in the study. The average age of the patients was 58.7 years, with 75% being male. Among these patients, 36.9% were diagnosed with ST-elevation myocardial infarction (STEMI), 8.9% with non-ST-elevation myocardial infarction (NSTEMI), and 54.2% with unstable angina (UA). The proportion of patients arriving at the hospital within six hours was 41.9% for STEMI, 35% for NSTEMI, and 18.4% for UA. Pre-existing conditions such as hypertension and diabetes were less prevalent among STEMI patients (54.8% and 31.9%, respectively) compared to those with NSTEMI (70.8% and 45.8%) or UA (64.2% and 41.5%). The use of medications, including aspirin, clopidogrel, nitrates, β-blockers, angiotensin-converting enzyme inhibitors, and statins, was more prevalent in NSTEMI patients than in those with STEMI or UA. Additionally, percutaneous coronary intervention was performed more frequently in STEMI cases (64.2%) compared to NSTEMI (41.7%) and UA (41.2%).UA is the commonest and NSTEMI is the least common type of ACS observed in their study.[12]Iqbal F et al prospectively collected data of 704 ACS patients. Of the 704 ACS patients, 72.4% presented with STEMI and 27.6% presented with NSTEMI/UA. Mean age of presentation was 56.5 years. Mean time to presentation was 11.42h and was higher

in NSTEMI/UA than STEMI. Treatment for STEMI did not differ much from NSTEMI/UA with ≥90% of patients in both groups receiving antiplatelets, statin, and anticoagulants. 39% of STEMI received thrombolytic therapy and percutaneous coronary intervention (PCI) rates were higher in STEMI. The 30-day mortality was found to be 10.22%, with STEMI having higher mortality than NSTEM/UA.These data represented the first reported study on spectrum of ACS in North Eastern India and has noted few key differences from the national registry CREATE, with greater percentage of STEMI patients, greater delay in seeking treatment, greater 30-day mortality, and lesser percentage of patients receiving reperfusion therapy.[13]

CONCLUSION

Periodic screening of elderly females should be done for decreasing the morbidity and mortality associated with disease.

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