



A COMPREHENSIVE STUDY ON THE CLINICAL AND BIOCHEMICAL ATTRIBUTES OF WOMEN EXPERIENCING ACUTE MYOCARDIAL INFARCTION

Community Medicine

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ABSTRACT

Introduction- Acute myocardial infarction is one of the leading cause of mortality and morbidity worldwide both in males as well as females. **Aims & objectives-** To analyse the clinical, biochemical and angiographic parametres of MI. **Methodology-** Observational study conducted in Katihar Medical College, a total of 42 females were enrolled from emergency department of medical college below age 70 years. **Results-** High prevalence of hypertension 64.3% and type 2 DM 45.2%, dyslipidemia 40.5% and obesity 57.1%. Chronic stable angina reported in 31.0% cases, mean age of presentation was 62 years. **Conclusion-** The need for urgency of enhancing public awareness, to recognize and address cardiovascular risk factors early.

KEYWORDS

Acute Myocardial Infarction (AMI), commonly known as a heart attack, remains a significant global health concern and a leading cause of morbidity and mortality among both men and women. While the majority of research has traditionally focused on the male population, recent studies have emphasized the importance of understanding the unique clinical and biochemical attributes of women experiencing AMI

AIMS & OBJECTIVES

To comprehensively investigate the clinical, biochemical, and angiographic attributes of women below 70 years of age who are presenting with acute myocardial infarction (AMI).

This observational study is a hospital based study conducted in Katihar Medical College & Hospital, Katihar, from January 2023 to November 2023. A total of 42 consecutive female patients meeting the inclusion and exclusion criteria were enrolled from emergency department of KMCH, Katihar in the study. Data were compiled and analyzed at Post Graduate Department of Community Medicine, KMCH, Katihar. The clinical presentation, biochemical markers, and angiographic findings of these women were meticulously examined.

Inclusion Criteria: Patients presenting with acute myocardial infarction, admitted in cardiology ward or ICCU.

Exclusion Criteria: Female patients aged above 70 years, Patients with valvular heart disease, with underlying neoplasm, retroviral disease, Patients presenting for second time Patients with pericarditis and inflammatory, malignant pericardial effusion, CKD, liver disease, anaemia, chronic obstructive lung diseases. Data collected was maintained in strict confidentiality with access to Principal Investigator

Diabetes: Patients on oral hypoglycemic drugs, Insulin or those having fasting blood sugar > 129 mg/dl were regarded as having diabetes mellitus according to ADA 2015 guidelines.

Hypertension: Those with blood pressure > 140 / 90 mmHg taken twice or those on antihypertensive drugs were defined as hypertensive as per criteria given in JNC 8.

Hyperlipidemia: A diagnosis of hyperlipidemia was made if total Cholesterol is > 160 mg/dl, Triglycerides > 150 mg/dl, and LDL > 130 mg/dl according to NCEP ATP III guidelines.

Radiological parameters noted were Electrocardiography STEMI was diagnosed using ACC/AHA 2013 for the management of STEMI guidelines, both in the setting of absence of LBBB and in the presence of LBBB.

RESULTS & ANALYSIS

Table: 1. Demographic and Risk Factors (n=42).

Variables	No of Cases	Percentage
Age		
42-50 Years	09	21.4
51-60 Years	21	50.0
61-<70 Years	12	28.6
		$\chi^2=0.01, df=2, p=0.995$
Symptoms		
Atypical	10	33.8
Typical	32	76.2
Risk Factors:		
Hypertension	27	64.3
Type 2 Diabetes Mellitus	19	45.2
Dyslipidemia	17	40.5
Obesity	24	57.1
Premenopausal	6	14.3
Postmenopausal	36	85.7
Chronic stable angina	13	31.0

We found Predominance in the 51-60 age group (50.0%) & typical symptoms (76.2%). High prevalence of hypertension (64.3%) and type 2 diabetes mellitus (45.2%). Significant presence of dyslipidemia (40.5%) and obesity (57.1%). Postmenopausal status prevalent in the majority (85.7%). Chronic stable angina reported in 31.0% of cases.

Table:2. Onset of Symptoms and Diagnosis of Patients.

Presentation after Onset of Symptoms	No of Cases	Percentage
Within 12 hours	11	26.2
After 12 hours	31	73.8
Diagnosis		
AWMI	21	50.0
IWMI	17	40.5
LWMI	4	9.5
		$\chi^2=0.02, df=2, p=0.99$

These findings underscore a significant portion of cases presenting after 12 hours from symptom onset (73.8%). In terms of diagnosis, AWMI is the most prevalent (50.0%), followed by IWMI (40.5%) and LWMI (9.5%), providing insights into the distribution of myocardial infarction types among the studied patients.

Table: 3. Biochemical Abnormalities:

Type 2 DM	No of Cases	Percentage
Diabetic (Glucose-F->129 mg/dl and PP->199 mg/dl)	19	45.2
Non Diabetic (Glucose-F-<126 mg/dl and PP-<139 mg/dl)	20	47.7
Impaired Glucose Tolerance (Glucose-F->126-129 mg/dl and PP->140-199 mg/dl)	3	7.1

Dyslipidemia		
Total Cholesterol >160 mg/dl	15	35.7
Triglyceride >150 mg/dl	17	40.5
HDL <43 mg/dl	12	28.6
LDL >130 mg/dl	15	35.7
X ² =0.03, df=3, p=0.9986		

These findings highlight a significant presence of both diabetic and non-diabetic cases among the patients, with a notable proportion showing impaired glucose tolerance. Dyslipidemia is also prevalent, with a substantial number of cases exceeding recommended levels for total cholesterol, triglycerides, HDL, and LDL. Understanding these biochemical abnormalities is crucial for tailoring effective interventions in the management of acute myocardial infarction.

In this current investigation, we enrolled 42 consecutive female patients below the age of 70, all of whom presented with acute myocardial infarction (AMI) at our tertiary care center. A study conducted in North India by Sahni et al[1] reported a mean age of presentation as 62 years.

Concerning traditional risk factors, hypertension emerged as the most prevalent factor in our study, aligning with findings from other research studies. Sree Ranga PC[2] et al observed similar trends in a study focusing on women in South India.

Upon analyzing the lipid profile, hypertriglyceridemia was identified as the most common dyslipidemia, a trend consistent with findings from other studies. Sahni et al, in a study conducted in North India, reported a 66% incidence of dyslipidemia characterized by low HDL-C and elevated LDL-C values.[1]

CONCLUSION

This study underscores the urgency of enhancing public awareness, especially among at-risk populations, to recognize and address cardiovascular risk factors early. The findings contribute valuable insights to the existing literature on AMI in women, emphasizing the need for gender-specific strategies in prevention, early detection, and tailored management.

REFERENCES

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