Clinical Profile of Acute ST Elevation Myocardial Infarction in Females

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ABSTRACT *Introduction: Ischemic heart disease (IHD) is a condition in which there is an inadequate supply of blood and oxygen to a portion of the myocardium; it typically occurs when there is an imbalance between myocardial oxygen supply and demand. Clinical manifestation of CHD usually occurs in the form of Acute myocardial infarction, Unstable angina, Stable Angina and Sudden death. Coronary heart disease is the greatest cause of death among women[2,3].*

Aim & Objectives: Study the clinical profile of ST elevation AMI in females which included age, risk factors, symptoms, family history, complications and outcome. The study was carried out in a tertiary care hospital on patients hospitalized in period of 2012-2014.

Results & Discussion: Post menopausal women are more prone to IHD. Majority of females have multiple risk factors like DM, HT, obesity and hypercholesterolemia. Incidence of DM and HT has significantly increased owing to sedentary lifestyle as compared to past.

INTRODUCTION

Despite advances in diagnosis and management, STEMI continues to be a major public health problem in the industrialized world and is rising in developing countries [1].Coronary heart disease is the greatest cause of death among women[2,3]. Ischaemic heart disease causes more deaths and disability and increase greater economic costs than any other illness in the developed world[4]. Each year, approximately 300,000 women die from MI.

CHD risk in females increases markedly at menopause. After menopause, women are 2-3 times more likely to have CHD compared to premenopausal females.

AIMS AND OBJECTIVES

To study the clinico-epidemiological profile of patients with ST Elevation Acute Myocardial Infarction in females with special reference to :

1. Risk Factors
2. Presenting Features
3. Complications
4. Management
5. Outcome

METHODOLOGY

Institutional Ethical committee has approved the study conducted. This cross sectional study is to study the clinical profile of ST elevation Myocardial Infarction In Females.

- Total 100 cases of Acute ST Elevation AMI getting admitted to ICCU fulfilling the inclusion and exclusion criteria's were studied.
- Written consent for participating in this study was taken of all patients. All patients were informed and explained about the study.
- Detailed history & clinical findings of all patients were collected.

Inclusion criteria:
1. Female patients between age 35 to 70 years.
2. ECG Evidence of ST elevation MI.
3. Patients who have received thrombolysis or not.

Exclusion Criteria:
1. Patients presenting with non-ST Elevation Myocardial Infarction.
2. Patient age more than 70 years.
3. Doubtful chest pain & enzyme changes in patients of chest pain.

RESULTS AND DISCUSSION

1. Incidence of Age in present study

AGE (in years)	Number	Percentage
< 40 years	2	2 %
40 – 49 years	15	15 %
50 – 59 years	28	28 %
>60 years	55	55 %
Total	100	100 %

In present study there is linear increase in incidence of MI with increasing age. These observations were similar to many other studies carried out in different decades in our country only(,Ghanshyam[5] et al,Yavagal[6] et al). In all studies above, highest incidence of AMI is seen in post menopausal group reflecting protective value of estrogen in premenopausal females. In all studies above, highest incidence of AMI is seen in post menopausal group reflecting protective value of estrogen in premenopausal females.
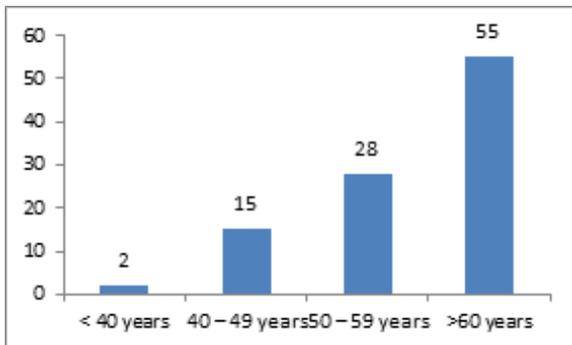
2. Incidence of Mean Time Delay in present study

Majority of patients i.e 80% presented within 12 hours from onset of chest pain while 18% presented between 12 to 24 hours and 2 % presented after 24 hours of onset of chest pain.

As compared to Antonio et al and McSweeney[7] study incidence of time delay is less in present study due to increased awareness among people.

3. Incidence of symptoms in present study

Symptoms	Number	Percentage
Chest pain	95	95 %
Perspiration	90	90 %
Breathlessness	27	27 %
Nausea / Vomiting	24	24 %
Giddiness	14	14 %
Palpitation	12	12 %
Others	7	7 %

The above table shows that in present study majority of patients i.e 95% presented with typical chest pain of acute myocardial infarction, while 90% were having perspiration, 27% presented with breathlessness, 24% presented with nausea/ vomiting, 14% presented with giddiness, 12% presented with palpitation while 7% presented with other symptoms (drowsiness, unconsciousness, etc.)

The above table shows that chest pain remains the hallmark symptoms in all the studies of AMI.This is followed by breathlessness (27%) and nausea/ vomiting(24%).Incidence of Nausea and vomiting is reported by Ghanshyam[5] et al which matches with our study.Incidence of others symptoms like giddiness, unconscious-ness and other symptoms were less common and similar to Ghanshyam et al study.
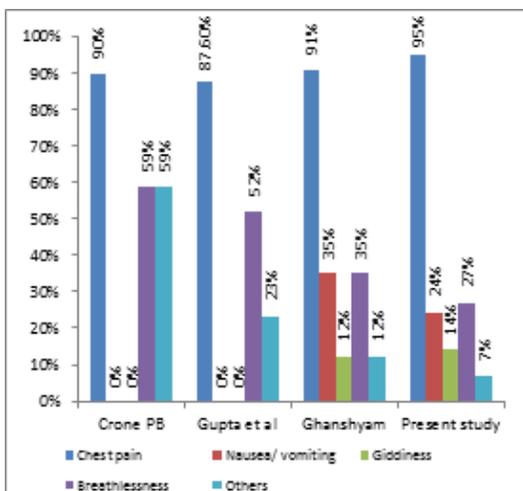
4. Incidence of risk factors in present study

Risk factors	Number	percentage
Post menopausal	93	93 %
>55years	76	76 %
Hypertension	57	57 %
Tobacco	39	39%
Family history	31	31 %
Obesity	28	28 %
Past h/o IHD	26	26 %
hypercholestrolemia	23	23 %
Diabetes	18	18 %
O.C.pills	2	2 %

In the present study 93% women are postmenopausal, major risk factor was hypertension (57%) followed by tobacco chewing (39%),obesity (28%) and hypercholoestolemia (23%). 31% females were having positive family history and 26% with past history of IHD. Only 2% were consuming O.C. Pills.

The above study shows hypertension remains the most important risk factor in female patient,although incidence varies from 71.4% to 27% in different studies .Obesity was the second most common risk factor accounting for 28% in our study This also reflects dietary habits and sedentary lifestyle of patients.

Past h/o IHD is also an important risk factor which is seen in 26% in present study and 21.7% in Ghanshyam et al study.

Diabetes Mellitus accounts for 18% in our study. While present study is comparable to David et al,Greenland[8] and Ghanshyam et al study.It was only 4.5% in William[9] BR study.

In all studies above,highest incidence of AMI is seen in post menopausal group reflecting protective value of estrogen in pre menopausal females.

5. Incidence of Myocardial Wall involved in present study

In present study majority of patients presented with anterior wall MI (63%), in which 11% were extensive anterior wall, 9 % were anteroseptal wall and 12% anterolateral wall. While 37 % presented with inferior wall MI, 17 % presented with posterior wall MI, 13 % presented with right ventricular wall MI.

In present study as well as in all other studies incidence of anterior wall MI was highest followed by inferior wall MI.

Incidence of anterior wall MI in our study was 71% while it was 58% in Behram study.

Incidence of Inferior wall MI was 26% in our study and it is comparable to Nigam et al study which is 24.5%

In our study it is also noted that incidence of posterior and RVMI is also increasing i.e 17% and 13% respectively.
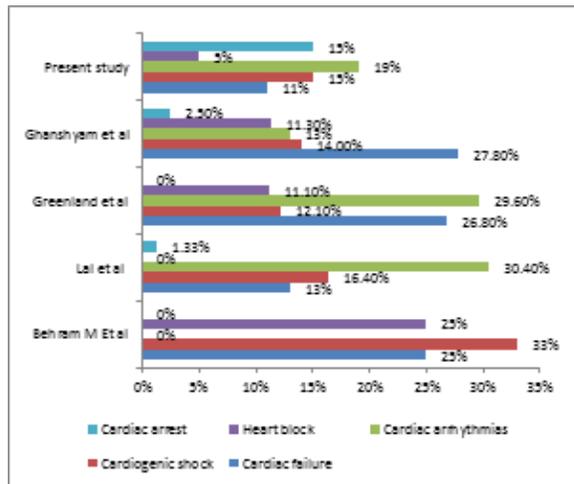
6. Incidence of complications in present study

In present study majority of patients i.e 19% were having cardiac arrhythmia in form of VPCs, Ventricular Bigeminy, Accelerated Idioventricular Rhythm and heart block. While 15% had cardiogenic shock , 11% presented with left ventricular failure, and 5 % heart block.

Cardiac arrhythmias are most common complication seen in all studies which was 30.4% in Lal et al,29.6% in Greenland et al study and 19% in present study.

Cardiogenic shock was 15% in present study while it was 33% in Behram M et al study.

Incidence of cardiac failure is also decreased in our study(11%) comparable to 13% of lal et al study.

Heart block accounts for 5% in present study and in Ghanshyam et al n Greenland et al study it was 11%.

7. **Incidence of mortality and complications leading to mortality**
In present study 15 % patients expired.In present study 80% of mortality is attributed to cardiogenic shock, 10.5 % mortality is attributed to cardiac arrhythmia while 9.5% mortality is attributed to LVF.

CONCLUSION
- The present study is clinical profile of acute myocardial infarction in females in which 100 such cases were studied.
- 55% of females were more than 60 years of age which is nearly same as seen in other studies.
- Incidence of AMI in young age group(<40yrs) remains same as seen in previous studies i.e. 2%
- The MTD has been significantly reduced to 6.52 hrs as compared to previous study showing 9.2 hrs.This explains increase awareness among female patients and earlier arrival in enhanced ICCU facilities.
- In present study majority of patients i.e 95% presented with typical chest pain of acute myocardial infarction, while 90% were having perspiration, 27% presented with breathlessness, 24% presented with nausea/ vomiting, 14% presented with giddiness, 12% presented with palpitation while 7% presented with other symptoms (drowsiness, unconsciousness, etc.) The preva-

lence of chest pain, breathlessness, nausea and vomiting has increased in prospective group as compared to retrospective group.
- In the present study 93% women are postmenopausal, major risk factor was hypertension (57%) followed by tobacco chewing (39%),obesity (28%) and hypercholoestolemia (23%). 31% females were having positive family history and 26% with past history of IHD. Only 2% were consuming O.C. Pills.As compared to retrospective group incidence of HT(40% vs 57%),Diabetes 16 vs 18%) and (25% vs 28%) is significant.
- In present study majority of patients presented with anterior wall MI (63%), in which 11% were extensive anterior wall, 9 % were anteroseptal wall and 12% anterolateral wall. While 37 % presented with inferior wall MI, 17 % presented with posterior wall MI, 13 % presented with right ventricular wall MI.In present study as well as in all other studies incidence of anterior wall MI was highest followed by inferior wall MI.
- Thus over years there is no change in anatomical involvement.
- In present study majority of patients i.e 19% were having cardiac arrhythmia in form of VPCs, Ventricular Bigeminy, Accelerated Idioventricular Rhythm and heart block. While 15% had cardiogenic shock , 11% presented with left ventricular failure, and 5 % heart block.

As compared to retrospective study incidence of arrhythmias (13% vs 19%) and cardiac arrest is increased.

Incidence of mortality in present study was 15% which was around 30% in retrospective group.

Majority of deaths in present study was attributed to cardiogenic shock while few percent to ventricular tachycardia and cardiac failure.

Mortality rates has decreased owing to better diagnostic facility, increasing awareness of people, early and timely thrombolysis and better control of cardiac arrthythmias and heart block.

- **Its concluded that**
i. Post menopausal multiparous women are more prone to IHD.
ii. Increasing awareness of conditions,alertness and enhanced ICCU facilities resulted in earlier reporting of patients in hospitals as compared to past years.
iii. More women now present with chest pain, breathlessness and giddiness as before.
iv. Majority of females have multiple risk factors like DM, HT, obesity and hyper-cholesterolemia.
v. Incidence of DM and HT has significantly increased owing to sedentary lifestyle as compared to past
vi. Incidence of anterior wall MI is same as before.

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