

# Clinical profile of acute myocardial infarction in elderly patients

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## Abstract

**Background:** Acute myocardial infarction is a common medical emergency. It is consequent to atherosclerotic narrowing of coronary arteries. The risk factors for coronary artery disease are hypertension, diabetes mellitus, smoking, low high density cholesterol [HDL] and high levels of low density cholesterol (LDL). Acute myocardial infarction in elderly is likely to present with 1) pain which is more likely to be termed “atypical” because the description differs from the classical one of substernal pressure with exertion. The chest pain is usually described as a substernal pressure sensation that is also perceived as squeezing, aching, burning, or even sharp. In some patients, the symptom is epigastric, with a feeling of indigestion or of fullness and gas. When pain is the presenting complaint, it may be different in character or location, and sometimes appears as an upper abdomen pain rather than a crushing or squeezing substernal sensation. Often they are unfit for interventions 2) Cardiovascular complications including cardiogenic shock, a trial fibrillation, and heart failure are more common in elderly 3) elderly patients arrive late for treatment late arrival for treatment/interventions **Methodology:** In this retrospective study 100 patients admitted with Acute myocardial infarction in ICCU during 2016/2017 in Kamineni Hospital, L.B. Nagar, Hyderabad were included. They were divided into two groups: Group A > 60 yrs of either sex; Group B < 60 years of either sex. Their progress was followed from admission to discharge by going through case records. **Results:** In group A fewer patients underwent interventions like PTCA: 27 patients (54%) and 23 patients (46%) were managed conservatively. On the other hand in group B 33 patients underwent PTCA and 17 patients were managed conservatively. In group A the male to female ratio was 1; 1.7 while in group B it was 4:1. In group A diabetes mellitus was present in 31% meanwhile 40% in group B were patients of diabetes mellitus. Hypertension was present in 31 patients (63%) in Group A but in group B 24 patients (68%) had hypertension. Atypical chest pain was more common in group A i.e. 19 patients (38%) compared to 16 patients (32%) in group B. Similarly in group A atypical symptoms like sweating were noted in 20 patients (40%), breathlessness 17 patients (34%), nausea/vomiting 9 patients (15%) and giddiness in 4 patients (18%). Typical chest pain was seen in 31 patients in group A and 34 patients in group B. It is by far the predominant symptom in acute myocardial infarction. They were less frequent in group B where in sweating was seen in 33 patients (66%), breathlessness 11 patients (22%), and nausea/vomiting 5 patients (10%). In group A 4 patients (8%) were brought within 3 hours, 16 patients (32%) within 3-12 hours, 9 patients (18%) in 13-48 hours. In group B 9 patients (18%) were brought within 3-12 hours, 11 patients (22%) within 13-48 hours. Here more patients were brought within the first 12 hours. AALWMI 18% and ASWMI, 34% were more common in group A, while ALWMI 32% was more common in group B. **Conclusion:** Atypical features like sweating and breathlessness more common in elderly group although chest pain was predominant symptom in both groups, while nausea/vomiting and palpitations were more common in elderly group.

**Key Words:** acute myocardial infarction.

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## INTRODUCTION

Acute myocardial infarction is a common medical emergency from among conditions grouped under ACS i.e. acute coronary syndromes. The elderly have the highest incidence of cardiovascular disease and frequently present with Acute Coronary Syndrome. This number can be expected to increase over time because society is aging. Older adults often sustain unfavorable outcomes from Acute Coronary Syndrome because of atypical presentation and delay in recognition. In

addition, elderly patients commonly do not receive optimal guideline-directed Acute Coronary Syndrome treatment. Owing to their high baseline risk of ischemic complications, the elderly also fare worse even with optimal Acute Coronary Syndrome treatment as they frequently have more complex coronary disease, more comorbidities, less cardiovascular reserve, and a higher risk of treatment complications. They are also subjected to a broader range of pharmacologic treatment F1000Res. 2017 Oct 2;6:1791.doi:10.12688/f1000research.11064.1.eCollection 2017. Engberding N, Wenger NK Coronary heart disease is the single largest cause of death in developed countries. Guidelines exist for the management of acute myocardial infarction (AMI), yet despite these, significant inequalities exist in the care of these patients Acute myocardial infarction is consequent to atherosclerotic narrowing of coronary atherosclerosis. the risk factors for coronary artery disease are hypertension, diabetes mellitus,, smoking, low high density cholesterol and high levels low density cholesterol. Presenting symptoms of acute MI differ in the elderly differ from those in younger patients. They are more likely to be termed “atypical” because the description differs from the classical one of substernal pressure with exertion. When pain is the presenting complaint, it may be different in character or location, and sometimes appears as an upper abdomen pain rather than a crushing or squeezing substernal sensation. Elderly patients have changes in pain perception and altered ischemic thresholds, but the exact explanation for atypical pain syndromes is not known.

### MATERIAL AND METHODS

In this study 100 patients admitted with acute myocardial infarction in ICCU of Kamineni hospital and research centre, LB Nagar during 2017/2016 were grouped as

- a) Age more than/equal to 60 years
- b) Age less than 60 years

#### Inclusion Criteria

1. More than 18 years of either sex
2. Acute myocardial infarction proved by typical symptoms of acute myocardial infarction
3. Typical ECG pattern ST segment elevation >0.11 mu in at least two consecutive limb leads Or ST segment elevation >0.2mu in at least two chest leads
4. Elevated cardiac enzymes CK-MB, Troponin T/I

#### Exclusion Criteria

1. Age less than 18 yrs of either sex
2. Patients with stable angina
3. Patients with unstable angina
4. Sudden cardiac arrest

### RESULTS

Sex appears comparable in elderly group ie male 54% female 46%.It predominantly lies in favor of men in younger age group i.e. 80% male and 20% female. In elderly 19% patients had atypical chest pain compared with 16% in younger group. Atypical symptoms like nausea/vomiting in [9%,] giddiness in [4%], syncope in [5%], pain in abdomen in [9%,] and altered sensorium [3%] were more common in elderly group. Antero- lateral wall myocardial infarction was more common in elderly group[48%] antero-septal was more common in younger group. in elderly group there were male 54% female 46%.It was predominantly in favor of men in younger age group i.e.80% male and 20% female.

**Table 1: Age distribution of pts**

Group 1>60yrs	50	50
Group 2<60yrs	50	50
<b>Total</b>	<b>100</b>	<b>100</b>

**Table 2: Sex distribution**

	A	B
Male	27(54%)	40(80%)
Female	23, (46%)	10(20%)

**Table 3: Diabetes mellitus**

A	B
17[34%]	24.[46%]

**Table 4: Hypertension**

A	B
31[,62%]	24[,46%]

**Table 5: Diabetes and hypertension**

A	B
14,[18%]	16[23%]

**Table 6: Chest pain**

	A	B
typical	31[,62%]	34[,68%]
atypical	19,[%]	16,[32%]

**Table 7: Associated symptoms**

	A	B
sweating	20[,40%]	33[66%]
breathlessness	11[,22%]	9[18%]
Nausea/vomiting	9[,18%]	5[10%]
giddiness	4[8%]	2[4%]
syncope	5[10%]	3[6%]
palpitation	7[8%]	5[10%]
Altered sensorium	3[6%]	1[2%]
Pain in abdomen	9[14%]	7[14%]
unconsciousness	1[2%]	0

**Table 8: Duration of symptoms**

	A	B
< 3 hours	4[8%]	9[18%]
3 to 12hours	16[32%]	18[36%]
12 o 48 hours	9[18%]	11[22%]
>48 hours	22[44%]	12[24%]

**Table 9:** Types of Acute myocardial infarction

	A	B
ALWMI	24[44%]	16[32%]
ASWMI	17[34%]	21[42%]
AWMI	5[10%]	11[22%]
ILWMI	4[8%]	5,[10%]
PWMI		
IWMI	4[8%]	3[6%]
LWMI	0	1[2%]
RWMI		

ALWMI-antrolateral wall myocardial infarction, ASWMI-antero septal myocardial infarction AWMI-anterior wall myocardial infarction, ILWMI-inferolateral wall myocardial infarction, PWMI-posterior wall myocardial infarction, IWMI-inferior wall myocardial infarction, LWMI-lateral wall myocardial infarction, RWMI-right ventricular wall myocardial infarction

## DISCUSSION

Elderly patients presented with typical chest pain in 62% and atypical chest pain in 38%. younger patients presented with 68% and atypical chest pain in 32%. Elderly patients presented with sweating, 44%, breathlessness 22%, nausea/vomiting 9%, and giddiness 4%. Anterolateral wall myocardial infarction [ALWMI] was more common in elderly 48% to 32%, while antero-septal [ASWMI] was more common in younger group, 42% compared to 34%. In this study 50 patients with acute myocardial infarction age >60 years group A were compared with 50 patients with acute myocardial infarction age <60 years group B. In group A 54% were male and 46% were females while in group B 80% were males and 20% were females. This observation is similar to Holey *et al.* Here male to female ratio was 1.37 :1 in elderly and 3:1 in younger patients. Here chest pain was most common symptom as 62% of group A reported it as compared to 68% in younger age group. Atypical symptoms were more common in elderly in elderly 20% complained of sweating, 17% complained of breathlessness, 9% complained of nausea or vomiting, 4% complained of giddiness, while in younger age group 33% complained of sweating, 11% complained of breathlessness 9% complained of palpitation. In a study done by Woon V C, 5 *et al* compared elderly and younger acute myocardial infarction patients, similar clinical scenario was observed where atypical symptoms were seen in elderly. [33% /11.7%] In a study by Holey *et al* 29.6% in elderly and 12.5% in young presented with chest pain. Applegate *et al* showed that pts, more than 65 yrs were more likely to have complications compared to younger pts. C C Wood *et al* study In our study ALWMI was seen in 44% and ASWMI in 34% and IWM in 8% in elderly group. whereas in younger group ALWMI was seen in 32%, ASMI in 42% and ALMMWI in 5%. In

study done by ishihara *et al* had compared elderly with young AMI acute myocardial infarction, had a non-diagnostic ECG in 50%. similar observation was noted by Trasch *et al*<sup>18</sup> where 40% of elderly and very elderly did not have typical ST elevation

## CONCLUSION

A number of elderly patients reported 12hrs. After experiencing chest pain, compared to younger ones who appeared much earlier, a typical symptoms like breathlessness and nausea/vomiting were more common in elderly. Acute myocardial infarction attracts attention and scrutiny as it is a disease that causes significant mortality and morbidity. In this condition age is a risk factor and its clinical profile varies as displayed in our study in 100 patients. Better management of co-morbid condition like diabetes melitus, hypertension, obesity etc. and better access to treatment facilities for diagnosis and intervention thereof are need of the hour. A number of elderly patients reported 12hrs after experiencing chest pain, compared to younger ones who appeared much earlier, a typical symptoms like breathlessness nausea/vomiting were more common in elderly.

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