

## DESCRIPTIVE STUDY OF ACUTE MYOCARDIAL INFARCTION IN YOUNG ADULTS

\*<sup>1</sup>Dr.S.Arun, <sup>2</sup>Dr.N.Chidambaram, <sup>3</sup>Dr.S.Periyasamy and <sup>4</sup>Dr.T.Prabhu

\*<sup>1</sup>Postgraduate, Department of Medicine, Rajah Muthiah Medical College, Chidambaram

<sup>2</sup>Professor, Department of Medicine, Rajah Muthiah Medical College, Chidambaram

<sup>3</sup>Assistant Professor, Department of Medicine, Rajah Muthiah Medical College, Chidambaram

<sup>4</sup>Senior Resident, Department of Medicine, Rajah Muthiah Medical College, Chidambaram

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### ABSTRACT

**Background:** Cardiovascular diseases are one of the most important causes of morbidity and mortality in the world today. Along with classical risk factors like dyslipidemia, hypertension, Diabetes mellitus and familial history of Coronary Artery Disease modifiable risk factors like smoking and alcohol are significantly contributing to the statistics in young adults with acute myocardial infarction. **Objective:** To study the clinical profile and assess the modifiable and non modifiable risk factors of AMI in young adults. **Methods:** All patients aged  $\geq 18$  yrs and  $\leq 40$  yrs hospitalized with acute myocardial infarction during the period of 2013-2015 are evaluated for clinical profile, risk factors & outcome. **Results:** Of the 50 patients mean age was 37.44 yrs ( $\pm 3.69$ ), males were more than the females with a ratio of 21:4. All patients presented with chief complaints of chest pain and most patients had a combination of risk factors like dyslipidemia, hypertension, diabetes mellitus. Smoking is found to be the most important independent risk factors in young males (93%). Anterior wall AMI was the predominant diagnosis, complications were very less with mortality of only 3%. The LVEF was very good on 2D-Echocardiography (76%  $\geq 40$ ). **Conclusion:** Younger patients have an excellent long term and short term prognosis because of their better base line characteristics, thus requiring a different line of management with respect to older age group. Therefore it is important to highlight the modifiable and non modifiable risk factors in young adults so as to have a better prognosis and higher life expectancy..

**Keywords:** Acute myocardial Infarction, Young Adults

## 1. INTRODUCTION

Cardiovascular diseases are the most important causes of morbidity and mortality in the world today, most importantly adding to statistics are coronary artery diseases. Though AMI is not uncommon in young adults especially below the age 40 yrs in developing countries like India, but the incidence is fast raising<sup>1</sup>. Many of the patients may not have classical risk factors for ischemic heart disease excluding smoking and a large portion of them have normal coronary arteries<sup>3</sup>. Young patients with AMI have a stronger family history of cardiovascular diseases and high prevalence of smoking<sup>4</sup>. Therefore this study aims at identifying the important risk factors and clinical presentation of AMI in young adults, so as to highlight the importance of modifiable and non-modifiable risk factors and change of life styles, as to have a better prognosis and

higher life expectancy<sup>6</sup>. Therefore this study aims at identifying the important risk factors and clinical presentation of AMI in young adults, so as to highlight the importance of modifiable and non-modifiable risk factors and change of life styles, as to have a better prognosis and higher life expectancy.<sup>6</sup>

## 2. MATERIALS AND METHODS

Young adults of AMI admitted in Cardiac Care Unit of RMMCH, ANNAMALAI UNIVERSITY. During the period of 2013 to 2015 and proved by cardiac enzymes and ECG findings. The patient is followed up to the hospital stay.

### Inclusion criteria:

1. Age  $> 18$  yrs and  $< 40$  yrs of either sex. 2. AMI proved by clinical features, cardiac enzymes and ECG. **Exclusion criteria:** 1. Age  $< 18$  yrs and  $> 40$  yrs of either sex. 2. Patients with unstable/stable angina. 3. Patients with

\*Corresponding author: **Dr.S.Arun**, Postgraduate, Department of Medicine, Rajah Muthiah Medical College, Chidambaram

previous H/O of IHD. A detailed history was taken in all the patients and a thorough physical examination was done as per the proforma.

### 3.RESULTS

**Table-1: showing age & sex wise distribution**

AGE	MALES	FEMALES	TOTAL
18-23	0	0	0
23-28	0	1	1
28-33	7	1	8
33-40	33	8	41
<b>TOTAL</b>	<b>40</b>	<b>10</b>	<b>50</b>

In the present study, it is observed that the age ranged from 18yrs to 40yrs, most number of patients were in the age group 33-40yrs constituting 41 patients(82%). It was also observed that males were more than females 41:9(84%:16).

**Table-2: Showing one risk factors**

One risk factor	No: of
Family H/O of IHD	5
Diabetes mellitus	4
Hypertension	1
Dyslipidemia	8
<b>Total</b>	<b>18</b>

In the present study there are 18 cases with one risk factor out of them 8(44%) are dyslipidemia, there are 5(28%) cases with Family H/O of IHD, and Hypertension alone 1(6%).

**Table-3: showing substance abuse**

SUBSTANCE ABUSE	MALE	FEMALE
SMOKER	30	00
ALCOHOL	00	00
BOTH(SM/AL)	09	00
<b>TOTAL</b>	<b>39</b>	<b>00</b>

In this study out of 42 males 39(93%) were substances abusers like smoking and alcohol. Among these abusers smokers were 30(77%) and both smokers and alcoholics were 9(23%).Female patients were neither smokers nor alcoholics

**Table-4: Showing clinical features**

CLINICAL FEATURE	MALE	FEMALE	TOTAL
ONLY CP	10	05	15
ASS SYMP	32	03	35
<b>TOTAL</b>	<b>42</b>	<b>8</b>	<b>50</b>

In this study there were 15(30%) cases who presented with chief complaints of chest pain(CP) without any associated symptoms(ASS SYMP),and 35(70%) patients

presented with chest pain and associated symptoms like nausea, vomiting and sweating.

**Table-5: thrombolysis status**

STATUS	MALE	FEMALE	TOTAL
THROMBOLYSIS	30(71%)	4(50%)	34
NO THROMBOLYSIS	12(29%)	4(50%)	16
<b>TOTAL</b>	<b>42</b>	<b>08</b>	<b>50</b>

In this study it was observed that out of the 50cases of AMI 34(68%) patients were thombolysed and 16(32%) patients were not thombolysed. therefore the males were more likely to thombolysed compared to the females.

### DIAGNOSIS:

**Table-6: showing the diagnosis**

DIAGNOSIS	MALE	FEMALE	TOTAL
AWMI	33(79%)	07(87%)	40(80%)
IWMI	09(21%)	01(18%)	10(20%)
<b>TOTAL</b>	<b>42(100%)</b>	<b>08(100%)</b>	<b>50(100%)</b>

In this study it is observed that out of 50 patient,40(80%) patient suffered from Anterior Wall AMI(AWMI) and 10(20%) patients were diagnosed to have Inferior wall AMI(IWMI).out of the 40 AWMI 33(79%) were males and of the total 10 IWMI 9(21%) were males.

**Table-7: Showing EF**

EF	NO. OF CASES	%
40 OR MORE	38	76
30-39	7	14
<30	5	10
<b>Total</b>	<b>50</b>	<b>100</b>

In this study it is observed that young patients with AMI had good EF-78% >40, 14% between 30-39, 10% <30.

### 4.DISCUSSION

This prospective study is conducted on 50 young adults of Acute Myocardial Infarction (AMI) admitted in RMMCH, Chidambaram.

#### AGE & SEX

In this study the age of the patients ranged from 27yrs to 40yrs, though the study selected was between 18yrs to 40yrs, no patients were below 27yrs. Most patients were between 35-40yrs of age in both the sexes (mean age-37.44(±3.69)). It was found that males were more than the females. Out of the 50 patients 42(84%) were males and 8(16%) were females. These observations were in consistent with the study conducted by, J Ismail et

al<sup>4</sup>(2004), concluded that females were 17% in their younger group compared to older group(51.5%),

### Risk factors

In this study it was observed that majority of the patients had one or combination of classical risk factors like Hypertention(HTN), Dyslipidemia(DYS), Diabetes Mellitus(DM) & Family history of Coronary Artery Diseases. There were 36% with one only risk factor, 30% with two independent risk factors 4% with three risk factors. All these observations were in consistent with the studies in the past namely CHAN M. Y. et al<sup>6</sup>(2006), Maqbool H Jaffery et al<sup>6</sup>(2007).

### Substance abuse

In this study out of the 42 male patients, 39(93%) were smokers and out of this 9(21%) patients were also alcohol abusers. no female patients were either smokers or alcoholics. Smoking in this study is found to the most important and significant independent risk factor among young individual AMI. These observations are correlated with a number of studies previously, like; Dai J.,Gao R.,Chen J.,Yao K. et al<sup>2</sup>(1999).

### Complications

In the current study it was observed that only 9(18%) patients out of 50 had complications during their hospital stay. Left ventricular failure accounted for 5(55.5%),cardiogenic shock and AV-block had 2(22.22%) each, therefore suggesting that long and short term prognosis in young patients with AMI was excellent. These findings were in consistent with other studies done previously. Israel Gotsman et al<sup>7</sup>(2003).

## 6.CONCLUSION

This study concluded that younger patients had typical anginal chest pain as their chief medical symptom, which may be associated with nausea, vomiting and sweating. Lifestyle habits like smoking were the single most

important modifiable risk factor in young adults. There was a combination of classical risk factors ( dyslipidemia, hypertension, DM and family history ) in many of the patients. Anterior Wall MI was the most common diagnosis young adults in either sex. The In-Hospital Mortality and complications were very less in young adults <40yrs with AMI, therefore the long term and short term prognosis was excellent in young adults. Younger patients have an excellent long term and short term prognosis because of their better baseline characteristics thus requiring a different line of management with respect to older age group. Therefore it is important to highlight the modifiable and non-modifiable risk factors in young adults so as to have a better prognosis and higher life expectancy.

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