



A STUDY ON CLINICAL PROFILE AND COMPLICATIONS ASSOCIATED WITH ACUTE INFERIOR WALL MYOCARDIAL INFARCTION IN A TERTIARY CARE CENTRE

Dr. Anbarasu*

Prof And Head Of Department Of General Medicine At Menakshi Medical College And Hospital , Research Institute. *Corresponding Author

Dr. Sidharthan

MBBS, postgraduate in general medicine at meenakshi medical college and hospital research institute.

Dr. Ramya

Senior resident at dhanalakshmi srinivasa medical college and hospital, research institute.

ABSTRACT

In this prospective study, the clinical profile of 50 cases of Acute Inferior Wall Myocardial Infarction with Right Ventricular Infarction was analyzed for its symptomatology, clinical features, complications and outcome.

KEYWORDS :

INTRODUCTION

Coronary heart disease is the leading cause of morbidity and mortality throughout the world. Inferior wall myocardial infarction occurs due to occlusion of the dominant right coronary artery which covers the medial part of the inferior wall including the inferior septum (lead 11, lead111 and AVF)less commonly, the culprit vessel is a dominant left circumflex artery The LCX territory covers the lateral part of the inferior wall and the left posterior basal area ,(lead1 AVL and V5 and V6).

Inferior wall infarction has got some special features like association with right VentricularMyocardial infarction and Brady-arrhythmias especially sinus bradycardia and second degree AV block.

The early recognition of RVI is important, because the time of onset of it haemodynamic consequence is unpredictable and these may be prevented by theadministration of intravenous fluid load.

AIM OF THE STUDY

To study the clinical profile of 50 serial cases of Acute Inferior WallMyocardial Infarction with Right Ventricular Infarction and toanalyse the age and sex distribution,symptomatology, clinicalfeatures, complications and outcome in patients admitted from May 2012 to Feb 2014 at Meenakshi Medical College Hospital & Research Institute.

MATERIALS AND METHODS

50 consecutive patients admitted to the ICCU, IMCU with a diagnosis of acute inferior wall infarction were included in the study.

All patients included in the study were subjected to ECG examination of V3R and V4R in addition to the conventional 12 leads. In addition, all patients were subjected to ECG examination of extended leads V7 to V9. Rhythm strips were taken in patients with arrhythmias. ECGs were examined at the time of admission, second day and on the day of discharge.

Inclusion Criteria

1Age: 20-80 years and above 2Sex: both gender 3ECG evidence of an acute inferior myocardial infarction i.e, ST elevation > 1 mm in limb leads II, III and aVF or evidence of a right ventricular infarction i.e, the ST segment depression is less than 50% of the ST segment elevation in lead aVF. Slope elevation of the ST segment relatively increased amplitude of T wave in lead V4R.

Exclusion Criteria

Patients who presented after 24 hrs of onset of chest pain were excluded, as the ST changes in right ventricular infarction may be transient. Patients with history of chronic lung disease, previous MI, rheumatic heart disease, pericardial disease or LBBB were excluded because diagnosis of right ventricular infarction is not possible in these cases when ECG is used as the criteria.

RESULTS

AGE

Cases were divided into groups of 10 years difference for age and sex incidencePeak incidence was found in 2 groups, one group with mean age is 62 years and another with mean age 54 years The lowest age was 27 years who was a male. The patient with highest age was a male of 86 years. 39 patients were male and 11 patients were female (TABLE -1 and CHART-1)

AGE DISTRIBUTION OF PATIENTS

Table - 1 Age Disturbution

AGE DISTRIBUTION		SEX		Total
		Female	Male	
TOTAL	20-29	0	1	1
	30-39	0	4	4
	40-49	1	9	10
	50-59	3	9	12
	60-69	4	11	15
	> =70	3	5	8
	Count	11	39	50
% within SEX		100.0%	100.0%	100.0%

Table-3 Presenting Symptoms

Symptoms	No.of patients	percentage%
Chestpain	49	98.0
Radiation	29	58.0
Sweating	42	84.0
Palpitations	7	14.0
Breathlessness	3	6.0
Total	50	100.0
Vomiting	24	48.0
Syncope	6	12.0

Table -3 Showing Symptoms Presented During An Attack Of MI

Chest pain - 49 patients had complaints of retrosternal chestpain .The one patient who did not present with chestpain had dyspnoea as presenting complaint. Some patients had

associated vomitings seen in 24 patients (48%) and syncope was seen in 6 (12%) patients.

RADIATION OF CHEST PAIN

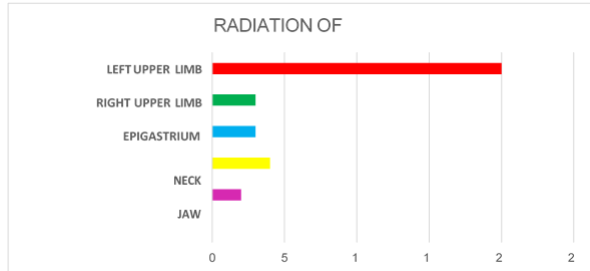


Chart 4

CHART -4 Showing the radiation of angina .Radiation was noticed in 29 patients (58%). Radiation to left upper limb was seen in 20 patients (40%), 3 patients (6%) had radiation to epigastrium, another 3 patients (6%) had radiation to right upper limb. Other sites of radiation were neck – 4%, Jaw – 2%.

Risk Factors

Multiple risk factors are implicated, ranging from cigarette smoking(54%), alcoholism(30%), hypertension(18%), diabetes mellitus(22%),dyslipidemia(10%) and obesity(12%) to various psychosocial stresses.

Table-5 Risk Factors

Risk Factors	Frequency	Percent
DM	11	22.0
HT	9	18.0
CAD	14	28.0
Dyslipidemia	5	10.0
Obesity	6	12.0
Smoking	27	54.0
Alcoholism	15	30.0
TOTAL	50	100

Table-6 ECG Findings

ECG Group		Frequency	Percent
Valid	IWMI	24	48.0
	IWMI+PWMI	6	12.0
	IWMI+RVMI	16	32.0
	IWMI+RVMI+PWMI	4	8.0
	Total	50	100.0

TABLE 6 showing the no of patients had IWMI with or without associated PWMI and RVMI and combination of all the 3.Out of 50 patients 24(48%) patients had isolated IWMI with no findings ofPWMI, RVMI.6(12%) are associated with posterior wall MI. 16(32%) are associated with right ventricle MI.4(8%) are associated with inferior ,right ventricle, posterior wall MI.final inference is most of inferior wall MI is associated with right ventricle MI with $p < 0.005$ which is significant.

Table-7 Complication Developed During Follow Up

COMPLICATIONS	NO.OF PATIENTS	PERCENTAGE
ATRIAL FIBRILLATION	2	4%
FIRST DEGREE HEART BLOCK	3	6%
SECOND DEGREE HEART BLOCK-MOBITZ TYPE 1	4	8%
SECOND DEGREE HEART	3	6%

Table 9 Coronary Angiography Reports

VALID		Frequency	Percent	Valid Percent	Cumulative Percent
	TVD	1	2.0	2.0	2.0
	CAD-DVD, TIGHT, RCA&LCX LESION	2	4.0	4.0	6.0
	CAD-SVD, TIGHT MID RCA, LESION	1	2.0	2.0	8.0
	DVD-DIFFUSELY, DISEASED RCA	1	2.0	2.0	10.0

BLOCK-MOBITZ TYPE 2		
COMPLETE HEART BLOCK	9	18%
RBBB	1	2%
LAHB	1	2%
MORTALITY	2	4%
TOTAL	50	100%

CHART -7 Showing complications developed during follow-up First degree AV block was observed in 3 patients (6%). Second degree –mobitz type I was seen in 4 patients(8%). Second degree – Mobitz type II was seen in 3 patients (6%). Complete heart block was noted in 9 patients (18%).

Transient complete RBBB was noted in one case which progressed to complete heart block. Left anterior hemi block was present in 1 case (2%). Most of the arrhythmias were transient, requiring no specific treatment. 2 patients who had right ventricular myocardial infarction, hypotension and complete heart block, expired during hospital stay. Atrial fibrillation was present in 2 patients (4%) and in both patients it had developed within first 24 hours. Papillary muscle dysfunction and mitral regurgitation was noted in 2 patients (4%). 2 patients are expired due to CHB.

TABLE -8 ECG Report Versus Complications

		ECG GROUP			
		IWMI (24pts)	IWMI+PWMI (6 pts)	IWMI+RVMI (16pts)	IWMI+RVMI+PWMI (4 pts)
ARRHYTHMIA	No Arrhythmia	83.3%	66.7%	18.8%	0.0%
	AF	8.3%	0.0%	0.0%	0.0%
	CHB	0.0%	0.0%	50.0%	25.0%
	First degree AVB	0.0%	0.0%	12.5%	25.0%
	LAHB	0.0%	16.7%	0.0%	0.0%
	RBBB	4.2%	0.0%	0.0%	0.0%
	second degree AVB Type 1	0.0%	16.7%	12.5%	25.0%
	second degree AVB Type 2	4.2%	0.0%	6.3%	25.0%
	Total	24	6	16	4
		100.0%	100.0%	100.0%	100.0%

In our study, out of total 50 patients, 21(42%) patients had complications, which are common when IWMI with associated RVMI, out of 9 patients of CHB , 8 patients had CHB with associated IWMI and RVMI , Even with isolated IWMI had complications of 1 patients with IWMI, RVMI, PWMI had all type of AV block complications

ECG REPORT VERSUS COMPLICATIONS (ASSOCIATION ESTABLISHED). CHI SQUARE=47.608, df=21, $p < 0.001$ HENCE, SIGNIFICANT.THAT IS EACH ECG RESULT TYPE IS LINKED TO DIFFERENT COMPLICATIONS.(TABLE 8)

DVD-TIGHT OM AND RCA LESION	1	2.0	2.0	12.0
DVD-TIGHT RCA &LCX, LESIONS	1	2.0	2.0	14.0
DVD-TIGHT RCA AND LCX, LESIONS	2	4.0	4.0	18.0
DVD-TIGHT RCA AND OM, LESIONS	1	2.0	2.0	20.0
DVD-TIGHT RCA LESION& minimal LCX LESION	1	2.0	2.0	22.0
DVD-TIGHT RCA&LCX LESIONS	4	8.0	8.0	30.0
DVD-TIGHT RCA&MINIMAL LCX	1	2.0	2.0	32.0
DVD-TIGHT RCA&OM LESIONS	2	4.0	4.0	36.0
LUMINAL IRREGULARITIES IN LCX	1	2.0	2.0	38.0
MINIMAL RCA AND LCX DISEASE	1	2.0	2.0	40.0
MINIMAL RCA DISEASE	1	2.0	2.0	42.0
RECANALISED RCA	4	8.0	8.0	50.0
RECANALISED RCA	2	4.0	4.0	54.0
SVD-DIFFUSELY DISEASED RCA	1	2.0	2.0	56.0
SVD-MILD PROXIMAL RCA LESION	1	2.0	2.0	58.0
SVD-MILD RCA LESION	1	2.0	2.0	60.0
SVD-OCCLUDED RCA	1	2.0	2.0	62.0
SVD-PROXIMAL RCA 40% LESION	2	4.0	4.0	66.0
SVD-RECANALISED RCA	2	4.0	4.0	70.0
SVD-TIGHT RCA LESION	2	4.0	4.0	74.0
SVD-TIGHT DISTAL RCA LESION	1	2.0	2.0	76.0
SVD-TIGHT MID RCA LESION	2	4.0	4.0	80.0
SVD-TIGHT PROX RCA LESION	1	2.0	2.0	82.0
SVD-TIGHT PROXIMAL LAD LESION	1	2.0	2.0	84.0
SVD-TIGHT PROXIMAL RCA LESION	1	2.0	2.0	86.0
SVD-TIGHT RCA LESION	1	2.0	2.0	88.0
TIGHT RCA AND LCX LESIONS	1	2.0	2.0	90.0
TVD	5	10.0	10.0	100.0
Total	50	100.0	100.0	

MOSTLY COMMONLY INVOLVED ARTERY IS RIGHT CORONARY ARTERY-PROXIMAL

PART. 28 patients had Single vessel disease.

In all our cases RCA was involved either proximally or distally. Some cases are associated with DVD16 (32%) patients and TVD 6 (12%) patients. Mortality occurred in our cases are DVD and TVD

A case with IWMI and RVMI had DVD and other case with IWMI+RVMI+PWMI had TVD with severe LV dysfunction had expired

CONCLUSION

- 1.The incidence of Acute Inferior Wall Myocardial Infarction is much higher in males than in females, the difference being less as age advances.
- 2.In both male and female there is a distinct increase in the incidence after age of 60years in this study.
- 3.Typical retrosternal chest pain lasting for more than 30 minutes associated with sweating was seen in almost all patients.
4. Smoking was the most prevalent risk factor (54%).
5. The onset of symptoms in majority of the patients (60%) was between 6 am – 12 noon.
6. The incidence of Right ventricular infarction in this study was 32%of total inferior wall MI.
7. Syncope or presyncope was a prominent symptom in patients with right ventricular infarction.
8. Triad of raised JVP due to Right sided failure, Hypotension and clear lung fields were seen in 15 patients (30%) due to right ventricular infarct in inferior wall MI.
9. All cases of inferior wall infarction should have right-sided leads during ECG examination and this should be done as early as possible because ECG findings are transient lasting not more than 18 hours
10. If diagnosis of RVMI is correctly made and treated early, the prognosis is usually good.
11. Incidence of true posterior wall myocardial infarction in

this study was 12%

12. Mortality is higher in patients with right ventricular infarction when compared with those without this complication.

13. 4 patients had IWMI+ True PWMI +RVMI and 2 patients had IWMI +RVMI .These 6 patients together on coronary angiogram were found to have TVD

14. Double vessel disease was present in 34%(17 patients)of which 6 patients had combination of IWMI+ TruePWMI which forms 12% of total 50 patients IWMI

15.Shock 14 (28%) and conduction disturbances 13(26%) are more common when IWMI associated RVMI.