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To Study the Echocardiographic and Heamodynamic Parameters of Right Heart in Patients with Acute Inferior Wall Myocardial Infarction and Its Angiographic Correlation

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Key Words:

Right Ventricle, Echocardiography, Doppler Echo,Angiography.

Introduction

The right ventricle, a physically and functionally complex chamber, is responsible for pushing venous blood out of the right atrium and back into the lungs via the pulmonary artery. A number of clinical disorders, including inferior wall myocardial infarction, are related to right ventricular function. Most patients with inferior wall myocardial infarction, at least one-third of them, have right ventricular dysfunction. When right ventricular dysfunction coexists with inferior wall myocardial infarction (IWMI), the mortality rate is much higher1. When there is a relative contraindication for thrombolysis [2], evaluation of right ventricular function is also clinically significant. In the absence of right ventricular involvement, thrombolysis provided little benefit for individuals with inferior wall myocardial infarction, according to a research by Zehender et al. As a result, the diagnosis and evaluation of RV function are crucial in IWMI. Right ventricular myocardial infarction (RVMI) complicates inferior wall myocardial infarction in as many as 50% of patients. The location of the myocardial infarction (MI), which occurs more frequently in the inferior wall and accounts for 24% to 50% of cases, is the main factor determining the likelihood of right ventricular (RV) dysfunction[3] . Even though right ventricular infarction is clinically visible in a significant percentage of instances, the incidence is significantly lower than that discovered at autopsy [4]. The challenge in diagnosing right ventricular myocardial infarction in patients who are still alive is one of the main causes of the difference. It is especially harder to estimate the true incidence of right ventricular dysfunction and stunning since they typically have a transitory nature. There are criteria for diagnosing RVMI, however even when strictly followed, they underestimate the true prevalence of right ventricular infarction. In contrast to other clinical factors that were known at the time of admission, RVMI is linked to a “relative risk of in-hospital mortality of 7.7 (95% CI)” and “a risk of significant in-hospital complications of 4.7 (95% CI)” [5]. The affected patient is exceptionally vulnerable to decreased preload and loss of atrioventricular synchronisation

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due to the probable hemodynamic disturbances associated with right ventricular infarction. These two conditions may cause a significant reduction in right and, secondly, left ventricular output [6]. In individuals with right ventricular dilatation, "cardiogenic shock" and the need for "transvenous cardiac pacing" are more frequent. Furthermore, regardless of where the infarct occurs, the presence of "right ventricular dysfunction" carries a poor prognosis since it suggests "multivessel coronary artery disease". "Right ventricular dysfunction" must be demonstrated since it frequently coexists with a discrete clinical condition that necessitates particular treatment. The "therapeutic implications of separating individuals" with "right ventricular dysfunction" from those without right ventricular dysfunction have increased interest in identifying right ventricular involvement non-invasively. It is difficult to assess the right ventricle's size and function because of its more complex architecture and mechanics. Anterior, inferior, and lateral (free) walls make up the RV's triangular hollow. Its three anatomy sections are "the inflow, apex, and outflow tract (RVOT). The parasternal short axis (PSAX) of the RV, which envelops the Left Ventricle (LV)", is shaped like a crescent. The RV endocardium is harder to define because to its thinner walls than the LV and its conspicuous trabeculations. And occasionally, the retrosternal position reduces the resolution of ultrasound waves.

1. Aim

To evaluate whether acute inferior wall myocardial infarction affects right heart

hemodynamics and function

2. Objectives

• Primary objective:

1. To evaluate the clinical and Echocardiographic parameters in patients with acute

Inferior Wall Myocardial Infarction at a tertiary care centre in Delhi.

2. To evaluate the angiographic details in patients with acute Inferior Wall Myocardial Infarction.

• Secondary objectives:

To correlate Echocardiographic parameters of the above mentioned patients with their angiographic findings.

3. Material And Methods

i) **Study area**

The study was conducted in "the Department of Cardiology, Max Super Specialty

Hospital, Saket, New Delhi, India".

ii) **Study Population**

All indoor patients in Max Super-Specialty Hospital, Saket, New Delhi with a diagnosis of acute Inferior wall myocardial infarction were enrolled in the study.

Inclusion Criteria

"1. Patients with inferior wall myocardial infarction, defined as ischemic cardiac pain lasting for more than 30 minutes presenting within 24 hours.

2. Characteristics ST segment elevation >0.1mv in two or more inferior leads (II,III,AvF).

3. Cardiac enzymes CK MB and troponin I elevations more than twice the upper

reference limit.

4. ECG evidence of RV infarction defined as ST segment elevation of >0.1 mv in V4R.

5. Stenosis was defined on coronary angiogram as occlusion of >70 %"

Exclusion criteria

"1. Pre-existing Abnormal ventricular function2. Left bundle branch

3. Atrial fibrillation

4. Paced rhythm

5. Valvular heart disease

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6. Pulmonary hypertension with Right ventricular (RV) systolic pressure of >40 mmHg

7. Pulmonary embolism

8. Poor Echo window"

iii**) Study Duration**

The study was carried out for 1 year from June 2018 till May 2019.

iv) **Sample Size**

The total sample size of 100 was taken.

v**) Study Design**

"The present study is a prospective, observational study. All patients with acute Inferior Wall Myocardial Infarction were evaluated with clinical, laboratory and echocardiographic and angiographic parameters as defined below".

vi) **Data Collections Methods**

Data was collected in a pre-designed and pre-tested proforma by interviewing patients after obtaining informed consent in the language they understand. Performa consisted of sociodemographic profile, history of present illness, past history, personal history, family history, general and systemic examination, laboratory and echocardiographic and angiographic findings.

a) **Clinical Characteristics**

The baseline characteristics of all patients including age, sex, clinical symptoms, risk factors, comorbidities, clinical findings and the presence of other diseases were recorded carefully.

b) **Biochemical Markers**

Biochemical blood routine tests were done in all patients.

c) **Electrocardiography (ECG) and echocardiography (Echo**) were obtained for the entire study population on admission.

d) **Echocardiographic Assessment**:

d) **Angiographic findings:**

Coronary angiography was performed by interventional cardiologist and coronary

anatomy of the heart was assessed. Angiography was done with proper informed consent. All the patients were given loading doses of asprin and statins. Focus was on rightcoronary artery (RCA) and left circumflex artery (LCX). The right coronary artery was assessed and divided into proximal, mid and distal RCA and LCX was assessed and divided in to proximal and distal segments. Stenosis above >70% was considered significant.

vii**) Data collection Forms**

All the data pertaining to the research was entered in a performa.

Viii) Statistical Analysis

Statistical tests were applied as follows1. Quantitative variables were compared using Mann-Whitney Test (as the data sets were

4. Results And Observations

A total of 100 patients with acute inferior wall myocardial infarction were studied and the conducted study had the following observations and results.

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Table 1 showing age wise distribution of patients.

Age Group	Number of Patients (Percentage)
31-50	24 (24%)
51 - 70	66 (66%)
>70	10 (10%)

Table 2 showing risk factors

Risk factors	Number of patients (percentage)
Hypertension	80 (80%)
Type 2 Diabetes	70 (70%)
Smoking	43(43%)

Figure 1 Time of Presentation

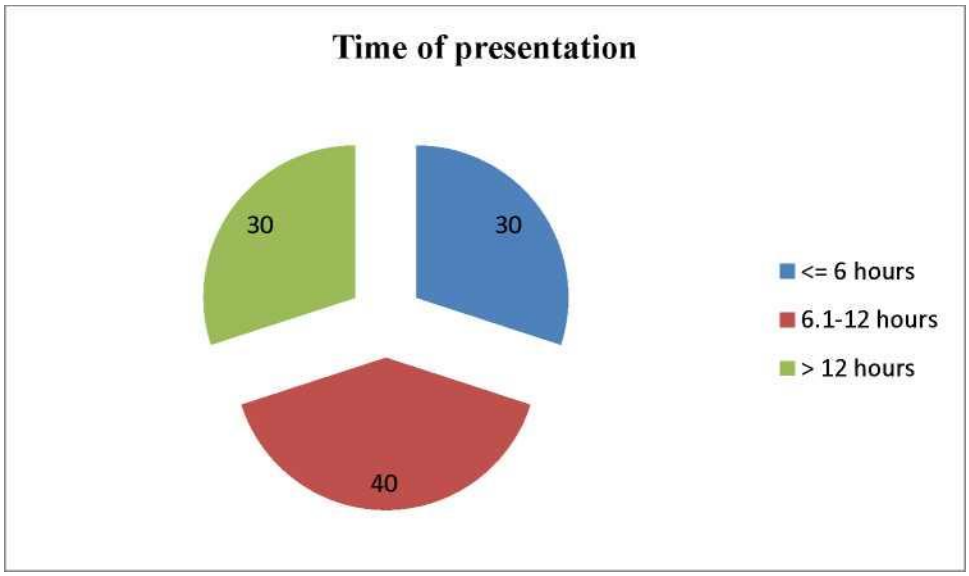

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Table 3 showing patients thrombolysed

Thrombolysis	Number of patients
NO	97 (97 %)
YES	3 (3 %)

Table 4 showing presentation of cardiogenic shock

Shock	Number of patients
NO	94 (94 %)
	6 (6 %)

Table 5 signs and symptoms of heart failure heart failure

Heart Failure	Number of patients
NO	81 (81 %)
YES	19 (19%)

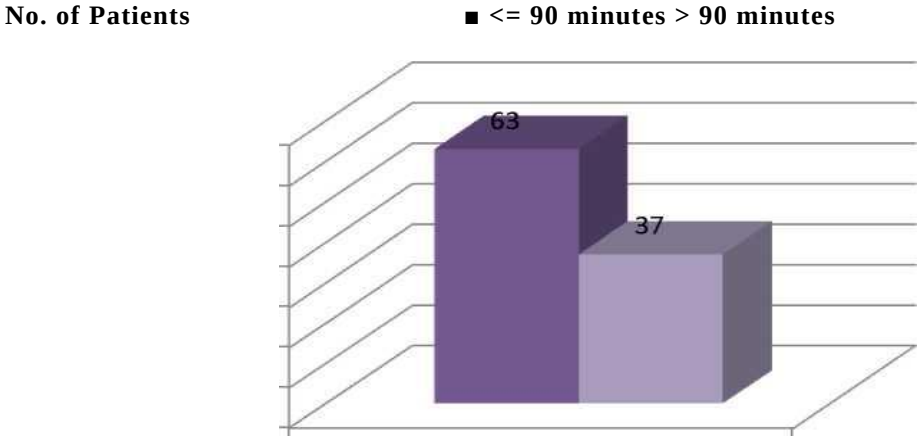

Figure 2: Door to Balloon time

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Table 6: ECG changes in inferior leads

ST CHANGES IN INFERIOR LEADS	Frequency	Percentage
YES	100	100.00%
Total	100	100.00%

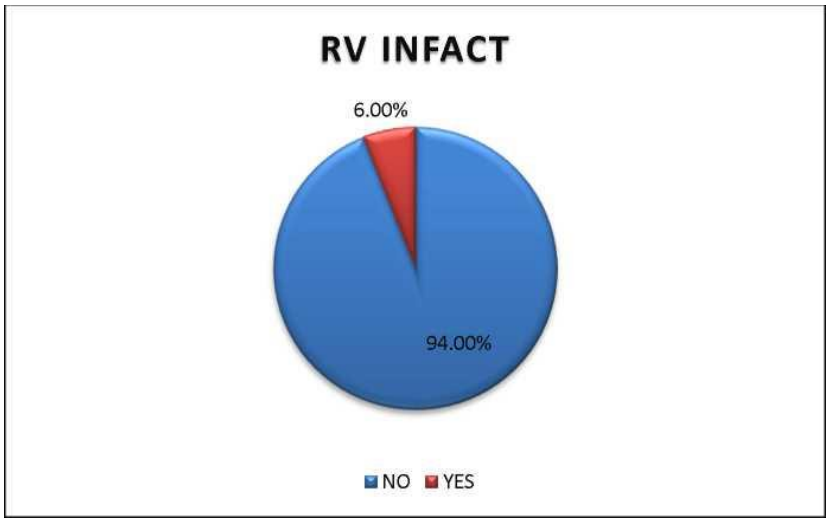

Figure 3 RV INFARCT

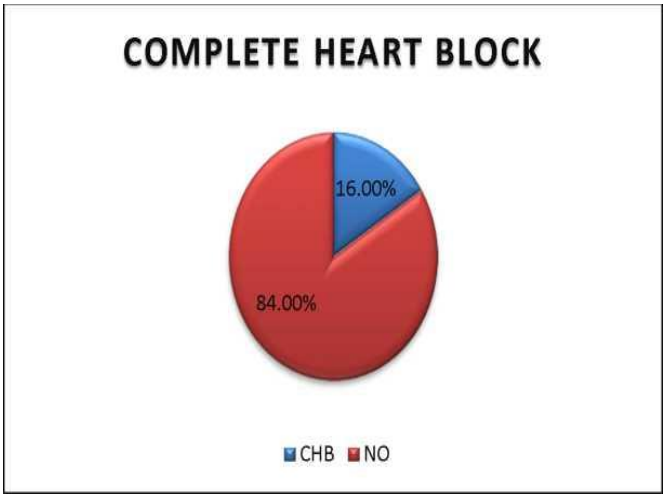

Figure 4. COMPLETE HEART BLOCK

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Table 7: Showing Cardiac Biomarkers

CARDIAC MARKER	Sample size	Mean±Stdev	Median	Min-Max	Inter Quartile range
TROPONIN	100	10.33 ± 16.52	3.06	0.08-82	1.440 - 10.155
CK-MB	100	105.36 ± 79.15	99.25	2.45 332	44.600 - 137.100
NTPROBNP	100	2395.58 ± 3408.71	1217	122 14400	705 - 2165

Table 8: Showing Right Area

RA AREACM^2

2	Frequency	Percentage
1) <=18	86	86.00%
2) >18	14	14.00%
Total	100	100.00%

Table 9: Showing Right Ventricle dimensions

RV DIMENSIONS	Sample size	Mean ± Stdev	Median	Min-Max	Inter quartile Range
BASAL	100	3.24 ± 0.27	3.2	2.8-3.9	3 - 3.400
MID	100	3.12 ± 3.13	2.8	2-34	2.600 - 3
LONG	100	5.14 ± 0.58	5.1	4.1-6.7	4.750 - 5.600

Table 10: Showing RMPI by Pulse Doppler method

RMPI-PULSE DOPPLER	Frequency	Percentage
Abnormal >0.44	42	42.00%

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Normal	58	58.00%
Total	100	100.00%

Table 11: Shows RMPI by Tissue Doppler

RMPI-TISSUE DOPPLER	Frequency	Percentage
Abnormal	28	28.00%
Normal	72	72.00%
Total	100	100.00%

Table 12: Showing TV-TDI

TVTDI		
TV-TDI	Frequency	Percentage
1) <=10	83	83.00%
2) >10	17	17.00%
Total	100	100.00%

Table 13: Showing mean value of RV free wall Strain

RV FREE WALL STRAIN	Sample size	Mean ± Stdev	Median	Min-Max	Inter quartile Range
RV STRAIN in %	100	-19 ± 0.021	-19	-24—15	-20 - -17

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Table 14: showing Right ventricular diastolic Dysfunction

DIASTOLIC DYSFUNCTION	Frequency	Percentage
1) <=.8	75	75.00%
2).9-2.1	25	25.00%
Total	100	100.00%

Table 15 : Showing Right ventricular systolic pressure

RIGHT VENTRICULAR SYSTOLIC PRESSURE	Frequency	Percentage
Abnormal >35 MMHG	23	23.00%
Normal <35 MMHG	77	77.00%
Total	100	100.00%

Table 16: Showing mean value of TR Vmax, IVC size, and RA pressure.

TRVMAX,IVC SIZE AND RA PRESSURE	Sample size	Mean ± Stdev	Median	Min-Max	Inter quartile Range
TR Vmax	100	2.8 ± 0.15	2.8	2.6-3.1	2.700 - 2.900
IVC SIZE	100	1.8 ± 0.14	1.8	1.5-2.2	1.700 - 1.800
RA PRESSURE	100	5.11 ± 4.15	3	3-15	3-3

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Table 17: Showing mean value of LVEF

LEFT VENTRICULAE EJECTION FRACTION	Sample size	Mean ± Stdev	Median	Min-Max	Inter quartile Range
LVEF	100	47.65 ± 4.9	50	30-55	45 - 50

Table 18 : showing distribution of RCA and LCX

	Frequency	Percentage
LCX	13	13.00%
RCA	87	87.00%
Total	100	100.00%

Table 19 : Assoication of RA area with RCA segments

2 RA area cm	RCA DISTAL RCA	MID RCA	PROXIMAL RCA	Total	P value
RA AREA 1) <=18	9 (90.00%)	33 (80.49%)	34 (94.44%)	76 (87.36%)	
2) >18	1 (10.00%)	8 (19.51%)	2 (5.56%)	11 (12.64%)	0.178
Total	10 (100.00%)	41 (100.00%)	36 (100.00%)	87 (100.00%)	

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Table 20: Associations of RMPI by pulse Doppler with RCA segments

PULSE DOPPLER		RCA DISTAL RCA	RCA MID RCA	RCA PROXIMAL RCA	Total	P value
Pulse Doppler	Abnormal	3(30.00%)	11(26.83%)	23 (63.89%)	37(42.53%)	0.003
	Normal	7(70.00%)	30(73.17%)	13 (36.11%)	50(57.47%)	
Total		10(100.00%)	41(100.00%)	36(100.00%)	87(100.00%)	

Table 21: Correlation of RMPI by tissue Doppler with RCA segments

Tissue Doppler		RCA DISTAL RCA	RCA MID RCA	RCA PROXIMAL RCA	Total	P value
Tisue Doppler	Abnormal	0 (0.00%)	3 (7.32%)	19 (52.78%)	22 (25.29%)	<.0001
	Normal	10(100.00%)	38 (92.68%)	17 (47.22%)	65(74.71%)	
Total		10(100.00%)	41(100.00%)	36(100.00%)	87(100.00%)	

Table 22: Correlation of TAPSE with RCA

TAPSE		RCA DISTAL RCA	RCA MID RCA	RCA PROXIMAL RCA	Total	P value
TAPSE	Abnormal	3(30.0%)	8(19.5%)	25(69.44%)	36(41.38%)	<.0001
	Normal	7(70.00%)	33(80.49%)	11(30.56%)	51(58.62%)	
Total		10(100.00%)	41(100.00%)	36(100.00%)	87(100.00%)	

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Table 23: Correlation of TV-TDI (S') with RCA

TV-TDI (S')	RCA			Total	P valve
	DISTAL RCA	MID RCA	PROXIMAL RCA		
TV-TDI 1) <=10	8 (80.00%)	38(92.68%)	26(72.22%)	72(82.76%)	
2) >10	2 (20.00%)	3 (7.32%)	10 (27.78%)	15 (17.24%)	0.058
Total	10 (100.00%)	41 (100.00%)	36 (100.00%)	87 (100.00%)	

Table 24: Correlation of RV free wall strain with RCA

RV FREE WALL STRAIN	RCA			Total	P value
	DISTAL RCA	MID RCA	PROXIMAL RCA		
RV 1) <=-20	5 (50.00%)	19 (46.34%)	8 (22.22%)	32 (36.78%)	
2) >-20	5 (50.00%)	22 (53.66%)	28 (77.78%)	55 (63.22%)	0.059
Total	10 (100.00%)	41 (100.00%)	36 (100.00%)	87 (100.00%)	

Table 25: Correlation of FAC with RCA

FRACTIONAL AREA CHANGE	RCA			Total	P value
	DISTAL RCA	MID RCA	PROXIMAL RCA		
FAC 1) <35	3(30.00%)	28(68.29%)	26 (72.22%)	57(65.52%)	
2)>=35	7(70.00%)	13(31.71%)	10 (27.78%)	30(34.48%)	0.040
Total	10(100.00%)	41(100.00%)	36(100.00%)	87(100.00%)	

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Table 26: Correlation of RV diastolic Dysfunction with RCA

DIASTOLC DYSFUNCTION		RCA			Total	P value
		DISTAL RCA	MID RCA	PROXIMAL RCA		
RV DIASTOLIC DYSFUNCTION	1) <=.8	8 (80.00%)	30(73.17%)	25(69.44%)	63 (72.41%)	0.795
	2).9-2.1	2 (20.00%)	11 (26.83%)	11 (30.56%)	24 (27.59%)	
Total		10(100.00%	41(100.00%)	36(100.00%)	87(100.00%)	

5. Discussion

We conducted a study of 100 patients; where we analysed echocardiographic parameters of right heart in patients with acute inferior wall myocardial infarction and was correlated angiographically.

It is well known fact that right ventricle has more complex geometry than the left ventricle, and the presence of trabeculations makes the assessment more difficult. It is important to diagnose RV infarction in the setting of acute inferior MI due to hemodynamic compromise and poor prognosis.

The mean age group in our study was 58.07 ± 10 years with a range of 35-88 years, with maximum number of patients falling in age group of 51-70 years of age. A recent study Abtahi et al[6] studying the right ventricular involvement had a mean age of 60 ± 10.2 years in patients with inferior wall myocardial infarction . We studied the risk factors like hypertension, smoking and diabetes for IWMI and found that hypertension is the most common risk factor followed by diabetes and smoking. A study by Sebaie et al[7] conducted in 2015 found smoking as the most common risk factor for myocardial infarction .

23 out of 100 patients had a heart rate of less than 60 beats per minute (bradycardia). A study by Serrano et al[8] found that sinus bradycardia is a predictor of inferior wall myocardial infarction moreso in patients with RCA occlusion. Our study had mean systolic and diastolic blood pressures of 120.49 ± 14.62 mm Hg and 79.8 ± 9.98mm Hg respectively which was comaparable to a study by Abtahi et al[6] wherein the mean systolic and diastolic blood pressures in IWMI patients were 118±7mm Hg and 74±6mm Hg respectively.

A study conducted by Bari MA et al in 2015[9] showed that cardiogenic shock as a rare entity in acute inferior wall myocardial infarction, but it get complicated when associated with right ventricular infarction, they demonstrated patients who had inferior wall myocardial infarction along right ventricular infarction had 18% occurrence of cardiogenic shock, our study showed that patient 6% of patients presented with cardiogenic shock.

Many patients develop signs and symptoms of heart failure in an episode of acute inferior myocardial infarction, our study showed 19% of patients had developed features of heart failure , the observation was in concordance with a study conducted by Altun A et al[10].

For the purpose of risk assessment and treatment strategy optimization for patients with acute IWMI, identifying the offending artery is crucial. In comparison to isolated inferior MIs, IWMI with RVI has a higher mortality rate of 16% due to proximal RCA lesions (11). The emergency treatment courses are guided by the ECG, which also aids in identifying the responsible artery. However, inferior STEMI has a limited sensitivity for identifying the culprit artery using traditional ECG criteria (12) The diagnosis of RV infarction by ECG is likewise less

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accurate. A post-mortem study revealed RVMI with a sensitivity of 83% and a ST segment elevation of 0.1 mV in lead V4R. (13). Erhardt LR, Wahlberg I, and Sjogren When diagnosing right ventricular involvement in an inferior myocardial infarction, one right-sided precordial lead should be used. In another investigation, the lead V4R had an 83% sensitivity and a 77% specificity for RVMI diagnosis. For right ventricular infarction, ST segment elevation in lead III is 97% sensitive but only 70% specific ([14]).

We observed that all our patients had inferior wall myocardial infarction and was diagnosed on ECG criteria.

One of the most important and commonly encountered complications of acute inferior wall myocardial infarction is rhythm abnormalities like bradycardia or complete heart block. our study showed around 16% patient had complete heart block when compared to study a conducted by Stock RJ et al[15] which showed 13% patients had complete heart block.

In routine clinical practise, echocardiography has taken the lead in evaluating the RV. The assessment of RV function, however, is significantly hampered by the complicated RV shape. Only a few studies have been done to validate the effectiveness of different RV function parameters measured by echocardiography in patients with inferior wall myocardial infarction [16].

Further we analysed structural abnormalities in patients with acute IWMI. In some patients RA area was enlarged and RV dimensions were not much affected. When correlated with angiographically, it was found to have the patients who had proximal RCA involvement that RA area change but that could be observer variability. But it failed to demonstrate statically significance, in the past not much studies have been conducted or not much of literature is available. We also demonstrated the right ventricle diameters at different levels where mean values of basal mid and longitudinal were 3.24 ± 0.27, 3.12 ±3.13, 5.14 ±0.58 respectively, which were similar to as study conducted by Iiker gul, Mustafa et al[17]Moreover none of the studies demonstrated any structural abnormality in acute event of inferior wall myocardial infarction.

Various studies evaluating TAPSE in IWMI have been conducted in the recent times. These studies show that TAPSE is one of the most important and independent predictors of RV dysfunction. As per ASE guidelines TAPSE <1.6 cm is considered abnormal. TAPSE was affected in 41% of the patients with IWMI in our study, this is similar to a study by Sumbul Javed et al[18] where in 42.5% of patients of IWMI had abnormal TAPSE. Our study showed, the mean value of TAPSE was 1.65 ± 0.34 cm. a similar study showed a mean TAPSE of 1.74 ± 0.2cm in patients with IWMI42. We correlated TAPSE angiographically to RCA and it was significantly affected in patients with proximal RCA lesion. This finding was in accordance with the study conducted by Gopalan Nair[19] where TAPSE was affected in proximal RCA lesion.

The mean FAC in our study was 33.24 ± 3.28% which was comparable to the mean FAC in a study conducted by Ashmawy et al (2016) wherein the mean FAC was 31±7.14%. In our study It was observed that FAC was significantly affected when correlated with the angiographic findings, more association was seen with proximal RCA lesion. This was in accordance with a study evaluating echocardiography assessment of right in IWMI and its angiographic correlation showing a significant abnormality in FAC in patients with proximal RCA lesion .

MPI was studied by 2 methods- Tissue Doppler and pulse Doppler. When measured by pulse Doppler it was found that MPI was significantly affected in patients with IWMI. Abnormal MPI was found to coexist with presence of IWMI in a study conducted by Chockalingam et al[11], however they did not do any angiographic correlation. In our study, MPI (pulse Doppler) had a significant association with RCA lesion, more so with the proximal RCA lesion, this finding was in accordance with a study conducted to evaluate

the association of proximal RCA lesion with MPI ([19]). In the present study, a cut of MPI>=0.55 (Tissue Doppler) was taken to predict RV systolic

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dysfunction as per ASE guidelines. With the above measures, Tissue Doppler was found to have a positive correlation in predicting RCA lesion, whereas in the above mentioned study [19], these cut off values failed to predict RCA lesion with good specificity and sensitivity, more studies are required to validate this finding.

Strain is defined as the percentage change in the myocardial deformity while its derivative strain rate represents the rate of deformation of myocardium over time. Estimation of RV free wall strain in acute myocardial infarction especially in cases of inferior wall infarction is gaining importance in the recent times and also helps in risk stratification of right ventricular function and also helps in the predication of which segment of RCA involvement. In our study we predicted the cut off RV FWS of -20 % helps in predication of right ventricular involvement, this was in accordance to study conducted by Roshdy HS et al[20] which showed RV average RVFS at a cut off value of - 19.7% can predict proximal RCA as culprit lesion. In a study by Badano et al[21] the normal reference limit for speckle tracking strain of RV free wall was -23%. To identify the signs of RV infarction in patients presenting with acute myocardial infarction, RV free wall strain was superior to conventional echocardiographic parameters60.

Mukhaini et al[22] published a study concluding that right ventricular diastolic parameters are abnormal in patients with RVMI and can be used to assess right ventricular diastolic function in such patients. In our study, 75% of the patients had grade 1 diastolic dysfunction and 25% had grade 2. When correlated with angiographic findings, it was observed that it fails to predict RCA lesion which was in contrast to the findings of

Gopalan et al[19] who found a significantly higher RV diastolic dysfunction in patients with proximal RCA lesion.

Several studies in the past have evaluated the role of TV-TDI in assessment of RV function. Oguzhan et al[23] found that TV-TDI provides a rapid and noninvasive tool for assessing RV function in patients with RV infarction. Similarly Mezulin et al63 found that systolic annular velocity by tissue Doppler predicts right ventricular dysfunction. The findings in our study are concordant with these earlier studies showing an abnormal TDI in 83% of the patients with IWMI. However the angiographic correlation was not significant. In the present study, a cut of a tissue Doppler systolic velocity <=10cm/sec was taken as per ASE guidelines. In contrast to 0ur study, in Gopalan study , these cut off values failed to predict RCA lesion with good specificity and sensitivity, thus a cut off value of 12.3cm/sec was used which a strong correlation with proximal RCA lesion, more studies are required to validate this finding.

In the present study, we also tried to analyse RVSP, TR severity and IVC size in patients with inferior wall myocardial infarction, there is paucity of literature assessing these parameters in IWMI. When correlated with angiographic findings, these parameters did not have a statically significant correlation.

6. Conclusion

From this study we concluded that right ventricle plays an important role in cases of inferior wall myocardial infarction. Although the right ventricle functions gets abnormal when associated with right ventricle infarction. It was also observed that right ventricle is complex and difficult structure to assess as compared to left ventricle. Earlier days right ventricle assessment was not given much importance, but with development and new generations and new technology to come right ventricle assessment is gaining importance in all fields related to cardiology. The blood supply of right ventricle is mainly right coronary artery and is dominant in many almost 50% of population. Inferior wall myocardial infarction mainly occurs in patients in which there is acute occlusion of right coronary artery.

Since the era of echocardiography has developed, the assessment of right ventricle and left ventricle has become easy and handful. The right ventricle and left ventricle have different parameters for assessment. The ecocardiographic assessment of left ventricle is much easier with definitive cut off and parameters as compared to right ventricle.

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We assessed various parameters of right heart in cases of inferior wall myocardial infarction.

Structural, systolic (TAPSE, FAC, MPI, TV TDI) diastolic abnormalities (E/A ratio) and Right ventricle free wall strain were performed which help in risk stratification and useful in predicting if right ventricle gets affected and helps in predication of which segment of right coronary artery segments causes abnormal parameters

From the study it was easy to conclude the parameters like TAPSE, FAC, MPI and TV- TDI are easy to perform in an acute setting. It was also seen that TAPSE alone is enough to predict right ventricular dysfunction. On correlation of with angiographic findings we concluded that patients who had proximal RCA involvement they had more of abnormal right heart parameters as compared to mid and distal. Therefore more the proximal occlusion more the right myocardium is likely to get affected.

7. Recommendations Of Study

1 All patients of Inferior wall myocardial infarction should under go ecocardiographic assessment within first 24 hours of event.

2'Detailed Right ventricle assessment is required for structural, functional, systolic and diastolic function.

3. Commonly used RV function assessment parameters like TAPSE, MPI, S', RV FAC show correlation and can be used as individual parameters.

3. TAPSE is alone is enough to predict right ventricular dysfunction

4. RV free wall strain should be considered in patients with IWMI and RVMI and needs more validation

5. TAPSE, FAC, S', MPI shows strong correlation in predicting the RCA lesion.

6. Out of RMPI- Tissue Doppler was more sensitive marker as compared to Pulse Doppler

7. Most commonly found RCA lesion is proximal lesion.

S8.More the lesion proximal more RV myocardium is likely to get affected

8. Limitations Of The Study

Since there is a chance that RV function will improve, an echocardiographic assessment should ideally be carried out before implementing any reperfusion strategies. Delaying reperfusion for echocardiographic evaluation, however, was viewed as unethical. Many times, before any anomaly is found, the RV myocardium may have recovered. Although the presence of a proximal RCA lesion does not always indicate RV myocardial involvement, research has demonstrated that it is a reliable indicator of prognosis in IWMI.

Conflict of interest None

Ethical Clearance Taken

Affliation Santosh Deemed to be University GZB.

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