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CORRELATION OF RECIPROCAL CHANGES IN ST SEGMENT ELEVATION MYOCARDIAL INFARCTION WITH LEFT VENTRICULAR DYSFUNCTION

Cardiology

Neema ML* Senior Resident, Department of Medicine; AJIMS and RC *Corresponding Author

Sayyid M Khilar Associate professor ,Department of Medicine; Father Muller Medical College, Mangaluru, S India - 575004.

ABSTRACT

Introduction: Identifying the reciprocal changes would be of significance in predicting the extent of the disease. Thereby high risk and poor outcome among these patients can be predicted. This study is based on the hypothesis that reciprocal ST segment changes have concomitant multivessel stenosis and LV dysfunction.

Objectives: To assess left ventricular dysfunction in patient with andwithout reciprocal ST Segment changes.

Methods and materials: Patients who are admitted in Father Muller Medical College Hospital with the diagnosis of ST segment elevation acute myocardial infarction.Study population was divided into 2 groups ,Group A: Anterior STEMI and Group B: Inferior STEMI.Each group subdivided into two subgroups according to presence of reciprocal ST segment depression (RSTD): A1 and B1, Absence of RSTD: A2 and B2.

Results: Among the cases,42.5% with reciprocal changes had severe LV dysfunction, which was statistically significant (p value= 0.03).

KEYWORDS

Reciprocal Changes, LV Dysfunction, Multi Vessel Disease

INTRODUCTION:

Identifying the reciprocal changes would be of significance in predicting the extent of the disease. Thereby high risk and poor outcome among these patients can be predicted. This study is based on the hypothesis that reciprocal ST segment changes have concomitant multivessel stenosis and LV dysfunction.

OBJECTIVES:

To assess left ventricular dysfunction in patient with and without reciprocal ST Segment changes.

METHODS AND MATERIALS:

Source of data: Patients who are admitted in Father Muller Medical College Hospital with the diagnosis of ST segment elevation acute myocardial infarction.

METHOD OF COLLECTION OF DATA: Study population was divided into 2 groups ,Group A: Anterior STEMI and Group B: Inferior STEMI.Each group subdivided into two subgroups according to presence of reciprocal ST segment depression (RSTD): A1 and B1, Absence of RSTD: A2 and B2.

Study design: Cross sectional Study
Study period :1 year

INCLUSION CRITERIA

1. Patients above 18 years
2. Patients with the diagnosis of STEMI

EXCLUSION CRITERIA

1. Patients with old myocardial infarction
2. Patients whose ECG shows ventricular paced beats
3. Patients with arrthymias

Statistical analysis: All statistical data was analyzed using Statistical Package for Social Sciences, Version 20 (SPSS 20) First descriptive statistics were computed with frequency and percentages calculation for categorical variables. Then inferential statistics were computed using Chi-square test.

RESULTS:

In cases of anterior wall STEMI with reciprocal changes, 30% had (6/20) had severe LV dysfunction. In cases of inferior wall STEMI with reciprocal changes, severe LV dysfunction was seen in 55% (11/20). Severe LV dysfunction was found in inferior wall MI with/without reciprocal changes with no significant difference between them. Among the cases,42.5% with reciprocal changes had severe LV dysfunction, which was statistically significant (p value= 0.03)

			Group				Total
			Anterior Wall Without St Depression	Anterior Wall With St Depression	Inferior Wall Without St Depression	Inferior Wall With St Depression	
Lvef	Mild	Count	5	8	1	5	19
		% Within Group	25%	40%	5%	25%	23.8%
	Moderate	Count	13	6	8	4	31
		% Within Group	65%	30%	40%	20%	38.8%
	Severe	Count	2	6	11	11	30
		% Within Group	10%	30%	55%	55%	37.5%
Total		Count	20	20	20	20	80
		% Within Group	100.0%	100.0%	100.0%	100.0%	100.0 %

Chi-Square Tests		
	Value	P Value (Significant If <0.05)
Fisher's Exact Test	19.092	.003

LV dysfunction and STEMI in anterior and inferior wall with/without reciprocal changes

in inferior wall MI with/without reciprocal changes with no significant difference between them.

TABLE NO. 11: Table depiciting the severity of LV dysfunction and STEMI with/without reciprocal changes

			LVEF			Total
			>50%	36-50%	</=35%	
ST DEP	no	Count	6	21	13	40
		% within ST DEP	15.0%	52.5%	32.5%	100.0%
	yes	Count	13	10	17	40
		% within ST DEP	32.5%	25.0%	42.5%	100.0%
Total		Count	19	31	30	80
		% within ST DEP	23.8%	38.8%	37.5%	100.0%

Among the cases,42.5% with reciprocal changes had severe LV dysfunction, which was statistically significant (p value= 0.03).

DISCUSSION:

In this study, 42.5% with reciprocal changes had severe LV dysfunction LVEF<30% (p value 0.03).

A study published by JAPI in 2014 showed higher incidence of LV dysfunction i.e.

LVEF < 40% in patients with reciprocal changes (72.5%) compared to patients without such changes (27.94%).1 This was contradicting to the study done in 2003, which showed no significant difference between patients with reciprocal ST depression with severity of left ventricular dysfunction.2Another showed that ejection fraction was lower in group with reciprocal changes than in group without reciprocal but was not statistical significant difference noted.(*P*-value 0.257) 3. A study done comparing between the anterior and inferior wall MI ,The left ventricular ejection fraction was found to be lower in patients with a reciprocal ST segment depression as compared to those without (anterior MI 29%, inferior MI 45%)4which was contradicting to the present study.In this study, 30% (6/20) of anterior wall STEMI with reciprocal changes and 55% (11/20) of inferior wall STEMI with reciprocal changes had severe LV dysfunction

CONCLUSION: This study shows a statistical significant positive correlation between reciprocal ST segment changes and severity of left ventricular dysfunction.

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