

# A Study of response of specific therapy in patients with right ventricular infarction at tertiary health care centre

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## Abstract

**Background:** Right ventricular infarction as an extension of inferior left ventricular infarction is now recognized with increasing frequency. **Aims and Objectives:** To study response of specific therapy in patients with right ventricular infarction at tertiary health care centre. **Methodology:** This cross-sectional study was carried out at public charitable trust attached to medical college between January 1994 to December 1994 in the 55 patients of acute inferior wall myocardial infarction admitted to hospital. **Group A patients constitute-** Inferior wall infarction with right ventricular infarction. **Group B-** Inferior wall infarction alone. The statistical analysis was done by Chi-square test and Z-test (Standard error of difference between two proportions) by SPSS 18 version software. **Result:** In our study we have seen that the clinical course in Group A was significantly poor as compared to Group B as having more deaths and less uncomplicated patients ( $\chi^2 = 7.45, df=2, p<0.05$ ). The complications except Bundle Branch Block (Z=1.32,  $p>0.5$ ) were significantly higher in Group A as compared to Group B e.g. RVF (Z=4.56\*,  $p<0.05$ ), LVF (Z=6.73,  $p<0.05$ \*), Hypotension (Z=5.43\*,  $p<0.05$ ), A.V. Block (Z=4.52\*,  $p<0.05$ ), VPB (Ventricular Premature Beat) (Z= 8.23,  $p<0.05$ ), Ventricular Tachycardia (Z=6.72,  $p<0.05$ ), V. fibrillation (Z=5.34,  $p<0.05$ ), A.V. Dissociation (Z=7.56), Atrial arrhythmia (Z=4.52), Death (Z=9.1,  $p<0.05$ ). **Conclusion:** It can be concluded from our study that the two different types with specific treatment like Inferior wall infarction with right ventricular infarction and Inferior wall infarction alone in that Inferior wall infarction alone was having better prognosis. **Key Words:** Right ventricular infarction, RVF (right ventricular failure), LVF (left ventricular failure), Bundle Branch Block (BBB), VPB (Ventricular Premature Beat).

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## INTRODUCTION

Right ventricular infarction as an extension of inferior left ventricular infarction is now recognized with increasing frequency<sup>2-4</sup>. The clinical features of extensive right

ventricular infarction have been documented and the importance of recognizing other potentially confusing clinical situations has been emphasized<sup>1, 5,6</sup>. Since the initial description of the clinical picture of extensive right ventricular infarction, less severe and more subtle forms of right ventricular involvement in the setting of myocardial infarction have been identified<sup>3,4</sup>. Inferior wall myocardial infarction (MI) is generally regarded as being low risk, compared with anterior wall MI. However, right ventricular (RV) infarction, precordial ST-segment depression and complete atrioventricular (AV) block have also been identified as the three high-risk subsets in inferior wall MI<sup>7</sup>. Right ventricular (RV) infarction may occur alone or in association with left ventricular inferior wall infarction. The patients with inferior myocardial infarction (MI) who have right

ventricular myocardial involvement appear to have the worse prognosis than those who do not have RV involvement<sup>8,9</sup>. Postmortem studies revealed that almost 50% of the patients who suffer myocardial infarction of the inferior wall undergo extension of the ischemic process to the right ventricle<sup>10,11</sup>. An increase of sudden death in patients with residual RV dysfunction after inferior wall MI, attribution of presence of RV infarction to occurrence of ventricular fibrillation (VF) during temporary pacing, atrioventricular conduction block, mechanical complication like left ventricular (LV) failure and cardiogenic shock were reported in different studies<sup>12,13</sup>.

### MATERIAL AND METHODS

This cross-sectional study was carried out at public charitable trust attached to medical college between January 1994 to December 1994 in the 55 patients of acute inferior wall myocardial infarction admitted to hospital. The patients with history of Chest pain >24hrs., patients whose initial ECG's showed an anteroseptal or anterolateral wall MI, patients with chronic lung disease, cor pulmonale, patients with previous history of MI. All the necessary investigations were done, the diagnosis of acute inferior wall MI was made as typical history of chest pain, ST segment elevation in leads II, III and av F and by development of pathological q waves in above mentioned leads. Similar changes in lead V<sub>5</sub> and V<sub>6</sub> (Lateral extension) and lead V<sub>2</sub> diagnosis true posterior wall infarction. Tall R waves in V<sub>1</sub> and V<sub>2</sub> and increased serum enzymes (SGOT). The diagnosis of right ventricular infarction was made by the criteria of Croft *et al* ST segment elevation at 0.1 mv or more in one or more of the right precordial leads ( V<sub>3R</sub>, V<sub>4R</sub>,V<sub>5R</sub> and V<sub>6R</sub>) in those patients who satisfied the criteria for an inferior wall MI. Here the Group A patients constitute- Inferior wall infarction with right ventricular infarction. Group B- Inferior wall infarction alone. The clinical course was studied and compared during entire hospital stay. The statistical analysis was done by Chi -square test and Z-test ( Standard error of difference between two proportions ) by SPSS 18 version software.

### RESULT

**Table 1:** Distribution of the patients as per the clinical course

Course	Group A No. (%)	Group B No. (%)
Uncomplicated	3 (18.75)	19(55.82)
Complicated	12(75.0)	15(44.11)
Death	1(6.25)	0(0)

( $\chi^2=7.45,df=2,p<0.05$ )

The clinical course in Group A was significantly poor as compared to Group B as having more deaths and less uncomplicated patients ( $\chi^2=7.45,df=2,p<0.05$ )

**Table 2:** Distribution of the patients as per the complications

Complications	Group A No. (%) (n=16)	Group B No. (%) (n=34)	Z-test
RVF	7 (43.75)	0(0)	Z=4.56*, p<.05
LVF	3(16.75)	6(11.86)	Z=6.73* p<.05
Hypotension	9(56.25)	4(17.67)	Z=5.43* p<.05
A.V. Block	12(76.0)	15(44.11)	Z=4.52* p<.05
Bundle Branch B.	2(12.5)	4(11.86)	Z=1.32, p>0.05
VPB(Ventricular Premature Beat)	7(43.75)	4(11.86)	Z= 8.23*, p<.05
Ventricular Tachycardia	1(6.25)	0(0)	Z=6.72*, p<.05
V. fibrillation	2(13.25)	0(0)	Z=5.34*, p<.05
A.V. Dissociation	1(6.25)	0(0)	Z=7.56*, p<.05
Atrial arrhythmia	2(12.50)	0(0)	Z=4.52*, p<.05
Death	1(6.25)	0(0)	Z=9.1*, p<.05

The complications except Bundle Branch B. (Z=1.32,p>0.5) were significantly higher in Group A as compared to Group B e.g. RVF (Z=4.56\*, p<.05), LVF (Z=6.73, p<.05\*), Hypotension (Z=5.43\*, p<.05), A.V. Block (Z=4.52\*, p<.05), VPB(Ventricular Premature Beat) (Z= 8.23, p<.05), Ventricular Tachycardia (Z=6.72, p<.05), V. fibrillation (Z=5.34, p<.05), A.V. Dissociation (Z=7.56), Atrial arrhythmia (Z=4.52), Death (Z=9.1, p<.05)

### DISCUSSION

Since the initial description of the syndrome of predominant right ventricular failure in some patients with right ventricular infarction by Cohn *et al.*<sup>1</sup>, there has been an increased awareness of right ventricular involvement in acute inferior wall myocardial infarction. Right ventricular involvement in this setting is not uncommon. Early postmortem studies<sup>14,15,16</sup> revealed a low incidence of pathologically detectable right ventricular infarction in association with infarction of the left ventricle. In our study we have seen that The clinical course in Group A was significantly poor as compared to Group B as having more deaths and less uncomplicated patients ( $\chi^2=7.45,df=2,p<0.05$ ) The complications except Bundle Branch B. (Z=1.32,p>0.5) were significantly higher in Group A as compared to Group B e.g. RVF (Z=4.56\*, p<.05), LVF (Z=6.73, p<.05\*), Hypotension (Z=5.43\*, p<.05), A.V. Block (Z=4.52\*, p<.05), VPB(Ventricular Premature Beat) (Z= 8.23, p<.05), Ventricular Tachycardia (Z=6.72, p<.05), V. fibrillation (Z=5.34, p<.05), A.V. Dissociation (Z=7.56), Atrial arrhythmia (Z=4.52), Death (Z=9.1, p<.05).

## CONCLUSION

It can be concluded from our study that the two different type with specific treatment like Inferior wall infarction with right ventricular infarction and Inferior wall infarction alone in that Inferior wall infarction alone was having better prognosis.

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