

Background: Two mechanisms have been proposed to explain the anterior ST segment depression during inferior infarction: The ST segment depression may be a reciprocal reflection of inferior (inferior – posterior or lateral) injury or the changes may be due to anterior ischemia in the area perfused by the left anterior descending coronary artery.

Methods: Forty patients with established diagnosis of inferior myocardial infarction were divided into two groups, 20 patients with reciprocal changes and 20 patients without reciprocal changes. All patients were investigated with serial ECG, cardiac biomarkers (CK&CKMB), echocardiography and coronary angiography as well as monitoring of clinical and hemodynamic course during their hospital admission.

Results: There were no significant differences in both groups as regards the major risk factors. Patients in group1 had significant higher levels of peak total CPK ( $2755.45 \pm 1015.73$  versus  $2108.35 \pm 1015.19$ , P-value 0.037) and CKMB ( $343.60 \pm 124.12$  versus  $257.25 \pm 113.46$ , P-value 0.05) than patients in group 2. Also EF% was lower in group1 than in group2 but with insignificant difference. In addition, complications were more frequent in group1 than in group 2 with P-value 0.01. Coronary angiography revealed that fourteen patients (70%) in group 1 had LAD lesion versus four patients (20%) in group 2 showing a significant difference in both groups with P-value 0.001. Also, there was a significant difference in both groups as regards the degree of LAD lesion with P-value 0.001, as ten patients out in group 1 (50%) had a significant LAD lesion (stenosis > 50%), In contrast, there were two patients with significant LAD lesion (stenosis >50%) in group 2. Comparing the degree of ST segment elevation and the degree of ST segment depression on admission in group1 revealed a significant correlation between the two variants( $r = 0.565$ , P- value 0.009).

Conclusion: Reciprocal ST segment depression during the acute phase of inferior myocardial infarction is a marker of high risk patients. It reflects more extensive and more severe myocardial necrosis and correlates with higher incidence of left anterior descending coronary artery disease, but we could not exclude the incidence of such changes as electrical phenomena.

Key words: Reciprocal ST segment depression- Inferior myocardial infarction.