

Inferior Wall ST Segment Depression as an Early Sign of Acute Anterior Wall Myocardial Infarction

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BACKGROUND: Reciprocal changes are considered changes that accompany ST segment elevation in the ischemic territory during AMI. We examined the hypothesis that isolated inferior horizontal ST segment depression on admission is an early sign of anterior wall infarction.

METHODS: 49 ACS patients admitted to the CCU between 1/96-6/08 whose presenting ECG showed inferior ST segment depression (45%) or inferior and V5 & V6 ST segment depression (55%), without any ST segment elevations were included. Admission and follow up ECGs were reviewed and ST segment deflections recorded. The culprit artery was determined based on angiographic and echocardiographic data. Patient characteristics and pertinent medical information were recorded. Comparison of admission and follow-up ECG was performed using the paired t-test. Correlations were performed by the Chi-square test or Spearman's correlation test, as appropriate.

RESULTS: The LAD or one of its branches was the culprit in 60% of patients. The right coronary artery and the left circumflex were the culprit in 10% of patients each, 4% had a left main lesion. In 12% of patients the culprit artery could not be determined with certainty and 4% had normal coronaries. Sum of ST segment depression in inferior leads, V5-V6 involvement and presence of "hyperacute" T waves in the anterior leads did not predict LAD involvement as the culprit artery. Echocardiography was performed in 48 patients within 1.09 ± 0.93 days of admission. 21 had a normal echo study, 16 of the remaining 27 (59%) had wall motion abnormality in the LAD territory.

CONCLUSION: ST segment depression in the inferior wall leads during ACS is usually an early sign of anterior wall MI, in which the LAD or one of its branches is the culprit artery. The value of urgent reperfusion in these patients deserves further evaluation.