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ELECTROCARDIOGRAPHIC EVALUATION OF LEFT VENTRICULAR FUNCTION IN ACUTE MYOCARDIAL INFARCTION. E.Kinoshita, R.Tagawa, M.Ide, T.Tanabe, N.Kanemoto, Y.Goto and Y.Suzuki. Tokai University, Isehara.

Left ventricular function were evaluated noninvasively by 12 leads electrocardiography (ECG) and radionuclide ventriculography (RNVG) from 7 to 21 days after the initial attack in 83 patients (pts) with acute myocardial infarction (AMI). The subjects were divided into 2 groups: anterior (group I) and inferior (group II) and further with and without heart failure. Left ventricular ejection fraction (LVEF) was calculated by ECG gated RNVG at left anterior oblique projection in supine position at rest. ECG score was obtained by ECG scoring system proposed by Palmeri et al (SCEF, New Eng J Med 1982). Significant negative relationship was noted between LVEF and ECG score ($r = -0.73$, $p < 0.001$). Significant correlation was noted between LVEF and ECG score in group I: ($r = -0.61$) and in group II ($r = -0.71$, each $p < 0.001$). But in heart failure group, no relationship was noted compared with and without heart failure. LVEF in group I without heart failure decreased significantly compared with group II ($p < 0.001$). However, there was no statistical difference between group I and II with heart failure.

In conclusion, ECG score obtained from 12 leads ECG in acute myocardial infarction was fairly accurate clue for the evaluation of left ventricular function and prognosis detection.

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FUNCTIONAL RECOVERY OF LVEF AND RVEF FOLLOWING STREPTOKINASE REPERFUSION; RELATION TO THE TIMING AND IMPACTS OF LAD/RCA REOPENING. T. NISHIMURA and H.W.STRAUSS* National Cardiovascular Center, Suita and Massachusetts General Hospital, U.S.A.*

To evaluate functional recovery of RVEF and LVEF after streptokinase reperfusion (Rp) 23 patients with anterior and inferior myocardial infarction (AMI, IMI) were investigated by gated blood pool scan at a mean time of 4.9 hrs after Rp and 10 days later. There were 18 patients with successful Rp and 5 patients with no Rp. Successful Rp cases were divided into two groups; Rp in less than 4 hrs (4 AMI, 5 IMI) and in more than 4 hrs (4 AMI, 5 IMI) from the onset of chest pain. Eighteen AMI and 24 IMI were served as control. As results, 1) Rp < 4 hrs demonstrated significant in LVEF. 2) RVEF in AMI remained within normal range and did not show any changes. In IMI groups, whether reperfused or not, RVEF showed significant improvement. 3) In successful Rp, extensive collateral showed improvement of LVEF. 4) No Rp group showed severe depressed function.

In conclusion, these studies demonstrated important factor influencing functional recovery after streptokinase Rp; the time of Rp, location of MI and extensive collaterals may play a role after Rp.

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PROGNOSIS OF ABNORMAL CONTRACTING SEGMENT AFTER ACUTE MYOCARDIAL INFARCTION. T. NISHIMURA and H.W. STRAUSS* National Cardiovascular Center, Suita and Massachusetts General Hospital, U.S.A.*

To determine the outcome of abnormal segments, we investigated 18 anterior and 24 inferior myocardial infarction (AMI, IMI) by gated blood pool scan at admission (AD) and 10 days (D10). Regional wall motion was computed in 6 zones as the average fractional changes of 6 radii/zones from end-diastole to end-systole. An abnormal segment was defined as <30% of chord shortening. Segment was defined as improved or deteriorated if chord shortening increased or decreased by more than 10% at D10. Normalization was considered if abnormal segment returned to normal (>30%). As results, 25% of AMI and 40% of IMI segments improved and 29% of abnormal segments in IMI normalized, in contrast 11% of AMI segment did so. More than 50% segments remained as unchanged and 10% showed deterioration. In conclusion, these changes in wall motion following acute MI should be considered in the evaluation of interventional trials.

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EVALUATION OF ACUTE EFFECTS OF Ca²⁺-ANTAGONIST BY MULTIGATED BLOOD POOL SCAN USING PHASE ANALYSIS. A.Kawamura, K.Nakai, K.Matsushita, M.Kato, T.Takahashi*, S.Katsuragawa*, T. Yanagisawa*. The 2nd Dept. of Int. Med. and Radiology*, Iwate Medical University, Morioka

The effect of Ca²⁺-antagonists, as Nifedipine (N) & Diltiazem (D), were evaluated in 20 patients with myocardial infarction. The stress data were acquired at 30 minutes after chewable administration of 10 mg on N (n=10) and intravenous injection of 10 mg of D (n=10), followed by the control study, as was obtained by conventional equilibrium method of multigated blood pool scan (MPPS) using phase analysis. The left ventricular ejection fraction (LVEF) and the fluctuation of phase (SD), as indicates cardiac performance, were compared.

Result; 1) The systolic blood pressure (BP) decreased significantly in the N group ($P > 0.01$), but the heart rate in the both group did not change significantly. After administration of Ca²⁺-antagonists, the value of LVEF & SD in patients with lower value of SD (21°) did not significantly changed. 2) Three of 4 cases with the value of SD over 21°, which was defines as a massive myocardial infarction, indicated downward shift of LVEF & SD. 3) This 3 cases includes 1 suspected RV infarction and 2 extended myocardial infarction with LV aneurysmal formation. We concluded that a caution should be pointed out on administration of Ca²⁺-antagonists in such patients.