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EVALUATION OF THE MECHANISMS OF EXERCISE INDUCED ST ELEVATION IN OLD ANTERIOR MYOCARDIAL INFARCTION CARDIAC BLOOD POOL SCAN.

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To evaluate the mechanisms of Ex-induced ST elevation, We performed 201-TL SPECT and Radionuclide angiography in 22 patients with Old anterior myocardial infarction. Ex-induced ST elevation was observed in 15 patients, not in 7. Redistribution of 201-TL was found insignificantly between these two groups. In 7 out of 15 patients with ST elevation after ISDN, 8 after Nifedipine, 11 after Propranolol, Ex-induce ST elevation had improved.ISDN had decreased ESVI & EDVI and Propranolol had reduced significantly pressure rate products, but no significant changes had been found between before and after Nifedipine. These findings suggest that Ex-induced ST elevation could have changed with drugs and have a relation to the changes of left ventricular geometry, in addition to EX-induce ischemia.

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RADIONUCLIDE EVALUATION OF EXERCISE TOLERANCE SOON AFTER ACUTE MYOCARDIAL INFARCTION (AMI).

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The aim of this study is to clarify the relationship between the radionuclide (RI) studies in 38 patients (mean 54 years) with AMI and exercise test (EXT) soon after the onset. RI studies include 99m-Tc-radionuclide ventriculography for global and regional (MI site and non-MI site) ejection fraction (EF) and 201-Tl-imaging for TMPI performed 1 week after AMI. EXT using Naughton's protocol was done from 10 days to 4 weeks (mostly 2 weeks) after AMI. End point of EXT was heart rate (120/min), 5 METS, ST depression and elevation (≧2mm). G-EF was 43.4±12.3%, MI-EF 29.1±13.9%, non-MI-EF 62.4±17.0%, TMPI 32.2±6.1, peak heart rate (PHR) 112.5±14.6/min, DP 14.1±1.8 (X 10^3), EX-stage 3.9±1.3. TMPI correlated with not only GEF but also MI-EF (both $p<0.01$). G-EF and TMPI showed significant relationship with Naughton's stage (both $p<0.05$). As to the regional EF, although MI-EF did not correlate with EX parameters, non-MI-EF showed significant relationship with peak HR ($p<0.01$) and DP ($p<0.05$). Therefore we conclude that in AMI although left ventricular function depends on infarct size, Ex torelance soon after AMI was not ascribed to depressed left ventricular function of the MI site, but with the compensatory function of the non-MI-site.

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PREDISCHARGE LOW LEVEL EXERCISE RADIONUCLIDE VENTRICUROGRAPHY AFTER ACUTE MYOCARDIAL INFARCTION: VALUE AND LIMITATIONS.

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To assess the value of predischarge low level exercise radionuclide ventriculography (RVG), 25 patients were studied a mean of 15.7 days after acute myocardial infarction (AMI). RVG were used to measure left ventricular ejection fraction(LVEF), and regional wall motion(RWM) at rest and peak exercise. Twelve lead ECGs were analyzed for ST-segment changes. Exercise was performed safely and its peak workload was 68 watt and mean peak heart rate(HR) was 10 /min, in all 25 patients. Exercise were terminated due to leg fatigue in 13, target HR(120/m) in 9, and ST depression with chest pain in 2 patients. Abnormal ECG changes, abnormal exercise responce of LVEF(▲LVEF≦5%), and exercise induced RWM abnormalities were noted in 2 of 16 (13%) patients with single vessel CAD (SVD) and 5 of 9 (55%) patients with multivessel CAD (MVD), 2 of 16(13%) with SVD and 8 of 9 (89%) with MVD, 1 of 16 (6%) with SVD and 5 of 9 (55%) with MVD, respectively. Although there are limitation of low peak woakload level due to leg fatigue, predischarge exercise RVG was safe and quite useful for the evaluation of cardiac function and for the prediciton of multicessel CAD patients especially in comparison with ordinary stress electrocardiographic test.

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EXERCISE LEFT VENTRICULAR FUNCTION. THREE MONTHS AFTER ACUTE ANTERIOR VS. INFERIOR MYOCARDIAL INFARCTION.

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Left ventricular(LV) size and function were assessed in 27 patients 3 months following acute myocardial infarction(MI) by radionuclide ventriculography performed at rest(R) and during peak supine exercise(E). Patients were divided into 3 groups: 9 patients with anterior MI(ANT); 8 with inferior MI and moderate to severe right ventricular hypokinesis by scan(RV), and 10 with inferior MI but without RV abnormalities(INF). Maximal exercise loads were not significantly different among ANT, RV, and INF. Radionuclide volumes were derived using a geometric area/length analysis. Heart rate, systolic blood pressure, left ventricular end-diastolic volume, end systolic volume and ejection fraction are compared among the three groups. In conclusion, left ventricular function is more impaired 3 months after ANT MI than after RV or INF, whereas, there was no difference between RV and INF. The increase in EDV with exercise in INF, but not in RV, suggests that adequate righ ventricular contraction contributes to preload compensation of the left ventricle to exercise stress after INF MI.