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EVALUATION OF NONTRANSMURAL MYOCARDIAL INFARCTION BY STRESS THALLIUM SCAN. T. Shimonagata, T. Nishimura, T. Uehara, K. Hayashida, S. Hamada, K. Kihara, M. Saito and T. Sumiyoshi. National Cardiovascular Center, Suita, Osaka.

Stress thallium scan was performed in 21 nontransmural myocardial infarction (NTMI) and 63 transmural myocardial infarction (TMI) with LAD single vessel disease. NTMI was compared with TMI by visual and quantitative evaluation of myocardial ischemia. Stress scintigrams of both groups were divided into three groups; Group 1: no redistribution (NTMI 43%, TMI 32%), Group 2: incomplete redistribution (NTMI 27%, TMI 32%), Group 3: complete redistribution (NTMI 27%, TMI 13%). % uptake of infarcted myocardium in initial and delayed images were (90.4%, 88.8%), (79.7%, 88.9%), (72.7%, 95.6%) for each three group of NTMI and (62.20%, 63.17%), (58.16%, 73.15%), (59.8%, 82.8%) for those of TMI respectively. Incidence of angiographic asynergy and LVEF(%) were (44%, 62.5%), (40%, 60.7%), (80%, 61.5%) for each three group of NTMI and (94%, 46.12%), (89%, 55.11%), (86%, 52.6%) for those of TMI, respectively. These results demonstrated that NTMI had low incidence of perfusion defect and high incidence of complete redistribution in infarcted myocardium than TMI.

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THE INVESTIGATION OF UPTAKE RATIO ON EXERCISE STRESS TL-201 SCINTIGRAPHY IN ISCHEMIC HEART DISEASES. T. Saito, S. Suzuki, K. Owada, H. Takeda, K. Yamamoto, I. Konno, S. Yanagisawa, A. Fujino, Z. Yamada, E. Katono, M. Komatsu, K. Ono, T. Uchida and S. Kariyone. First Department of Internal Medicine, Fukushima Medical College.

For quantitative analysis in ischemic heart diseases, index of exercise stress Tl-201 scintigram was measured in 6 normal cases (Normal area) and 11 patients with angina pectoris (Ischemic area). Uptake Ratio (UR), namely radioactivity in anteroseptal region, inferior region and posterolateral region against to total injected radioactivity were used as indices. Myocardial images were obtained in LAO view at 5 minutes and 120 minutes after injection. In ischemic area, UR were lower than those of Normal area, but the difference of UR between Ischemic area and Normal area at 120 minutes was smaller than that at 5 minutes. UR in ischemic area had a good correlation ( $r=0.52$ ) with Washout Rate, that was a previous index for quantitative analysis. It is concluded that UR was useful index to evaluate spatial and temporal uptake and washout of Tl-201 on regional myocardium.

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USEFULNESS OF QUANTITATIVE TL-201 EXERCISE ECT IN HCM. K. SAKATA, T. KURATA, H. HAYASHI, A. KOBAYASHI, N. YAMAZAKI. 3rd Dep. of Internal medicine of Hamamatsu University, Hamamatsu.

We quantified TL-201 exercise ECT in HCM to find the relation between the severity of ventricular arrhythmia (V.A) and the findings of TL-201 ECT and to assess the impaired myocardial perfusion. 20 patients (pts) with HCM were exercised to a symptomatic end point using a bicycle ergometer. The images were obtained immediately and 4 hours after exercise. Quantitative analysis was performed on 4 sections in each image, representing the apical, mid and basal regions of the short axis cuts and the apical regions of the long axis cuts. We made the initial profile curve and washout rate curve which were compared to the previously established normal limit (mean-2SD) curves respectively below which we scored all area falling. All pts also underwent Holter ECG. 7 pts with Lown 3<sub>≤</sub> had significantly higher initial profile score than 13 pts with Lown 2<sub>≥</sub>, indicating that pts with severely impaired initial perfusion were prone to have severe V.A. The septum had the smallest initial profile score. The lateral wall in which reverse redistribution (R.R) was frequently found had the smallest washout rate score. These findings imply that R.R is due to abnormal redistribution of non-R.R regions. It is useful to quantify TL-201 Exercise ECT in HCM, since we can know the regions of impaired myocardial perfusion and the severity of the disease.

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COMPARISON OF MYOCARDIAL METABOLISM AND SCINTIGRAM BEFORE AND DURING EXERCISE IN PATIENTS WITH VARIOUS HEART DISEASE MAINLY COMPOSED ISCHEMIC HEART DISEASE. H. Akamatsu I. Adachi, K. Sueyoshi, T. Kawai, H. Akagi, J. Takada, M. Kigima, I. Seki, J. Kusukawa. Osaka Medical College, Department of Radiology and School of Medicine.

Thirty patients with various heart disease mainly composed of ischemic heart disease were studied by coronary sinus catheterization and measurements of coronary circulation and myocardial metabolism (coronary blood flow, lactate and potassium) before and during bicycle ergometry (50 Watt, 50 rpm, 15 minutes). Identical patients were taken pictures of Tl-201 myocardial scintigram using planner and SPECT directly after and three hours after the same exercise. As the result of comparison of both, it is considered that abnormality of Tl-201 myocardial uptake has relations with decrease of coronary blood flow.