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EVALUATION FOR RESTENOSIS AFTER PTCA (PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY) USING EXERCISE TL-201 MYOCARDIAL IMAGINGS (TL-IM), N. Hasegawa, H. Kubo, K. Yano, T. Takagi, T. Degawa, M. Sakai, H. Hirai, K. Ishida, S. Yabuki and K. Machii. 3rd Department of Internal Medicine, Toho University, Tokyo.

The time of restenosis after PTCA was investigated in 26 patients with ischemic heart disease using exercise Tl-201 myocardial imagings (Tl-IM). The patients were divided into two groups. Group I are 8 patients with restenosis and Group II are 18 patients without restenosis in coronary arteriography in three months after PTCA. Tl-IM was performed before PTCA, and coronary arteriography were performed before and in three months after PTCA in 26 patients. The regional perfusion of ischemic region were studied quantitatively by ROI method and represented as %Tl-201 activity after exercise. The results in the initial images were compared before with a week and three months after PTCA. The %Tl-201 activity were  $50 \pm 15\%$  before,  $73 \pm 14\%$  ( $p < 0.01$ ) in a week and  $60 \pm 18\%$  ( $p < 0.05$ ) in three months after PTCA in Group I,  $59 \pm 16\%$  before,  $77 \pm 11\%$  ( $p < 0.01$ ) in a week and  $79 \pm 9\%$  ( $p < 0.01$ ) in three months after PTCA in Group II. The improvements of coronary perfusion were recognized in 7 of 8 patients in Group I in a week after PTCA by %Tl-201 activity, but only in a patient in three months after PTCA. These results suggest that restenosis after PTCA does not occur in the early stage, but progress gradually during about three months.

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EVALUATION OF 24HOURS DELAYED IMAGE OF STRESS THALLIUM -201 MYOCARDIAL SCINTIGRAPHY K.Nakada, E.Tsukamoto, K.Kawamura, K.Fujimori, K.Itoh, M.Furudate, T.Gotoh, T.Iida, K.Fujita and K.Nasuhara. Hokkaido University School of Medicine, Sapporo. and Sunagawa City Hospital, Sunagawa.

During the period of Jan.1985-Oct. 1986, 152 patients were studied with stress Tl-201 myocardial scintigraphy. In all cases, delayed images in 24 hours after stress were performed added to conventional delayed image in 3 to 4 hours with rotating gamma camera. in 50 out of 56 patients who were performed coronary angiography(CAG), data collection in 24 hours were successful and SPECT image were obtained. By use of short axial slices including ventricular cavity, circumferential profile curve and wash out ratio were obtained. Late redistribution were found in lesions related to more than 75% stenosis of coronary artery, and more normalized washout ratio were observed in 24 hours, but lesions of fresh myocardial infarction showed poor wash out ratio still in 24 hours after stress. One case with coronary stenosis showed remarkable late redistribution and good wash out ratio although little redistribution and wash out ratio less than lower limits in 3hour. His ischemic lesions were recovered after coronary bypass operation.

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SIGNIFICANCE OF REDISTRIBUTION IN TL-201 STRESS SCINTIGRAPHY IN PATIENTS WITH AND WITHOUT PRIOR MYOCARDIAL INFARCTION. H.Itagane, M.Saito, N.Omura, A.Koizumi, K.Kimura, K.Fukami, T.Sumiyoshi, K.Haze, K.Hiramori, T.Uehara, K.Hayashida and T.Nishimura. National Cardiovascular Center Osaka.

To determine the role of Tl-201 redistribution (RD) in patients with and without myocardial infarction (MI), Tl-201 stress scintigraphy (S-SG) was performed in 130 patients who were demonstrated to have a single vessel disease in left anterior descending artery. Fifty-four patients had no angina pectoris after MI (MI group), 39 had angina pectoris after MI (MIAP group) and 37 had angina pectoris without prior MI (AP group). S-SG was analyzed quantitatively and the extent of Tl uptake in a delayed image (%DI) and redistribution (%RD) was calculated using a RDI method.

Although 59 out of 76 patients in MIAP and AP groups had significant RD (%RD  $\geq 10\%$ ) and %DI in these groups were higher than that of MI group, 20 patients of MI group had significant RD.

These results suggest two possibilities; the role of RD is different in patients with and without prior MI or patients with prior MI may have a higher threshold for chest pain during exercise.

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A NUCLEOMEDICAL STUDY ON MYOCARDIAL VIABILITY. T.Watanabe, N.Ikebe, Y.Kobayashi, M.Aoki, H.Nakajima, A.Yoshizaki, T.Asahara, N.Kondo, H.Inuzuka, M.Abe, H.Tanaka, K.Kimura, S.Kiyomi, Y.Nagai, I.Yamasawa, C.Ibukiyama, H.Murayama\*. 2nd Int.Med.and Radiol.\* Tokyo Medical College.

The myocardial viability of infarcted area was evaluated by exercise Tl-201 myocardial scintigraphy(Ex-Tl) and Tc-99m blood pool scintigraphy(BP). Eighteen patients with antero-septal infarction, consisting of 10 cases of group A showing redistribution in the septum by Ex-Tl, and 8 cases of group B not showing redistribution was studied. Ex-Tl was conducted in an ordinary 180° SPECT method. In BP the septal portion was further divided into basal, middle and apical regions from the mLAO image at rest, and the regional EF(REF) and peak ejection rate (PER) were determined in each region. As a result, the global EF and PER did not disclose any significant difference between the two groups, but in the basal region the REF and PER were significantly higher in group A ( $31.9 \pm 7.5\%$  and  $173.2 \pm 63.6$  in group A,  $20.8 \pm 4.8\%$  and  $87.0 \pm 28.2$  in group B respectively,  $p < 0.04$  each). In the middle region the values tend to be higher in group A but there was no significant difference ( $35.5 \pm 12.9\%$  and  $191.4 \pm 88.9$  in group A,  $22.9 \pm 6.7\%$  and  $107.0 \pm 40.4$  in group B respectively.). In the apical region, there were not significantly different between the two groups. Conclusion, in the cases with redistribution recognized by Ex-Tl in the infarcted area, as compared with the cases without redistribution, viable myocardium are remaining, and present a favorable effect on the regional cardiac functions.