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CLINICAL USEFULNESS OF LIGHT EXERCISE Tl-201 SPECT IN EFFORT ANGINA PECTORIS. K.Suda, M.Ohnishi, T.Mori, H.Shiotani, Y.Kanoh, K.Fujitani, K.Maeda and H.Fukuzaki. Kobe University School of Medicine, Hyogo.

To evaluate clinical usefulness of light exercise Tl-201 SPECT, we performed both maximal and light exercise Tl-201 SPECT in 17 patients with effort angina pectoris. Light exercise test (L-Ex) was performed at the workload of 80% of peak heart rate at the maximal exercise test (Max-Ex). The workload was 47 ± 19 w at Max-Ex and 23 ± 9 w at L-Ex. Heart rate during exercise reached to 103.7 ± 18.9 bpm at Max-Ex and 89.0 ± 15.8 bpm at L-Ex. Rate pressure product also reached to $169 \pm 38 \times 10^2$ at Max-Ex and $136 \pm 26 \times 10^2$ at L-Ex which amounted to 80% of the former. Incidence of clinical ischemic sign (chest pain and/or ischemic ST depression) at Max-Ex (17/17 cases) was higher than at L-Ex (10/17 cases). But redistribution phenomenon (RD) on Tl image was observed in all 17 patients at both exercise tests. RD was observed in 37 segments at Max-Ex and in 27 of these 37 segments at L-Ex. In these 27 segments with RD at both exercise tests, mean initial relative activity was $59.5 \pm 10.3\%$ at Max-Ex and $60.9 \pm 11.8\%$ at L-Ex. Therefore coronary blood flow disparity indicated by Tl-201 was shown at L-Ex as well as at Max-Ex in these 27 segments. In conclusion, RD on Tl image is more sensitive indicator of coronary artery disease than chest pain or ST depression.

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PREDICTION OF RESTENOSIS OF PTCA BY EXERCISE Tl-201 MYOCARDIAL SCINTIGRAPHY. T.Uehara, T.Nishimura, K.Hayashida, T.Shimonagata, M.Takamiya, T.Sumiyoshi, M.Saito, K.Haze and K.Hiramori. National Cardiovascular Center, Suita, Osaka.

Tl-201 exercise myocardial scintigraphy was performed before and after PTCA (within 1 month, 3 month, 6 month, 1 year later), and an occurrence time of a re-stenosis and the possible prediction of the re-stenosis were investigated. The washout rate, % washout rate and % Tl uptake of every part of myocardium were obtained from the quantitative analysis of myocardial imagings using ROI method, and an ischemic score was calculated. The results are as follows:

1. Ischemic score could stand for the degree of ischemia precisely and it was very useful to estimate the pre-PTCA ischemia and post-PTCA re-ischemia (re-stenosis).
2. Most of the post-PTCA re-stenosis occurred within 3 month and the examination of post-PTCA (within 1 month, 3 month later) was very useful to detect re-stenosis.
3. Ischemic score showed the increase tendency except for two cases which showed the decrease of ischemic score just after PTCA.
4. The future possibility of re-stenosis could be predicted according to the increase tendency of the ischemic score, when the ischemic score showed a boundary value.

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ASSESSMENT OF THE HEART DILATATION BY ^{201}Tl SPECT IMAGING M.ITOH, T.TANAKA, T.OHTAKE, J.NISHIKAWA, M.IIO. TOKYO METROPOLITAN TOSHIMA HOSPITAL, UNIV.OF TOKYO HOSPITAL, TOKYO

When we diagnose the heart disease from the myocardial ECT images, it is sometimes insufficient to evaluate only by the decrease of uptake or defects in myocardium. We introduced the degree of the heart dilatation and the wall thickness by coronal images of the left ventricle at rest, and assessed the usefulness to evaluate together.

The subjects were as followings, DCM 12 cases, myocardial infarction 25 cases, angina pectoris 15 cases, and normal control 18 cases. The left ventricle dilated with the wall thinning of the left ventricle.

In the group of which the (relative) wall thickness is less than 0.76, LVEF revealed less than 50% at 86%. In the group of which the degree of the (relative) dilatation is more than 0.74, LVEF revealed less than 50% at 83% including 6 cases on DCM with the slight decrease of uptake in LVM.

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EVALUATION OF PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY BY EXERCISE Tl-201 SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY USING DOUBLE DOSE METHOD. Y.Kubota, H.Adachi, H.Sugihara, H.Nakagawa, I.Inagaki, T.Nakagawa, H.Katsume, K.Okamoto, D.Miyazaki and H.Ijichi. Kyoto Prefectural University of Medicine, 2nd Department of Internal Medicine, RI, Kyoto.

Effect of percutaneous transluminal coronary angioplasty (PTCA) was evaluated by exercise (Ex) Tl-201 (Tl) single photon emission computed tomography (SPECT) using double dose method in 8 normal subjects (N) and 8 patients with angina pectoris (AP). The first dose of Tl was injected during peak Ex and the second was injected at rest. Net resting data was obtained in subtracting the first from the second data. The changes of myocardial blood flow (d-Fract) were calculated from Tl uptake in peak Ex and at rest. Before PTCA, d-Fract was smaller, globally in AP than in N, and regionally in ischemic than non-ischemic region. The d-Fract was increased after PTCA with the increase in pressure rate product. Thus, double dose method applied in exercise SPECT is feasible for evaluating the therapeutic effect of PTCA from the relationship between myocardial oxygen demand and myocardial blood flow.