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WASHOUT ANALYSIS OF Tl-201 MYOCARDIAL SPECT. PHANTOM STUDY AND STUDY IN PATIENTS WITH CORONARY ARTERIAL DISEASE. I.Okuzumi, A.Okabe, T.Ueno and K.Kato. The Cardiovascular Institute, Tokyo.

To evaluate the usefulness of washout analysis of Tl-201 myocardial SPECT, we performed phantom study and study in patients with coronary arterial disease (CAD). In phantom study it was possible to detect regional relative Tl-201 concentration at the site of the camera even with 180 degrees half scan. Of 7 normal subjects change of regional Tl-201 counts showed single exponential pattern as long as 4 hours, so we used  $k = \log(\text{initial counts/delayed counts})/t$  (t: time from initial scan to delayed scan) as the index of wo.

Diagnostic sensitivity of wo analysis was 65% and less than that of visual analysis (77%). Among the patients with CAD, k value of the group with regional coronary stenosis greater than 90% was smaller than that of the group with stenosis less than 90%, and this difference was statistically significant. We concluded that wo analysis is useful for the estimation of the severity of coronary arterial stenosis.

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EFFECT OF INTRACORONARY THROMBOLYSIS (ICT) ON MYOCARDIAL SALVAGE EVALUATED BY EXERCISE Tl-201 MYOCARDIAL SCAN. Y. Tokuyasu, K. Watanabe, H. Sakurada, N. Ejiri, K. Namba, K. Ieki, T. Motomiya and T. Kobayashi. Tokyo Metropolitan Hiroo General Hospital, Tokyo.

30 patients with acute myocardial infarction who received ICT were studied by exercise Tl-201 scan in the convalescent phase. Then the result was compared with residual stenosis (RS) revealed by another coronary arteriography (CAG) performed lately. 21 patients were successfully recanalized by ICT. Among them, 8 were with late RS < 75% (G1), and 13 with RS  $\geq$  75% (G2). Remaining 9 were not recanalized and late CAG revealed 100% or more than 75% RS (G3). Ex-Tl scan was performed by ergometry terminated with symptoms and/or ST depression  $\geq$  0.2 mV. Redistribution was estimated by percent redistribution (%RD) calculated from circumferential profile curves in the infarcted area and percent washout ratio (WR). G2%RD (13.7  $\pm$  9.3) was greater than G1 (3.8  $\pm$  3.8) ( $p < 0.02$ ) and G1 was greater than G3 (-1.9  $\pm$  3.2) ( $p < 0.01$ ). G2%WR (27.2  $\pm$  28.3) was smaller than G1 and G3. Above result indicated that redistribution was greatest in cases with larger salvaged myocardial mass with significant residual coronary stenosis and smallest in non-recanalized cases with poor myocardial salvage. Cases with presumably best myocardial salvage (G1) showed intermediate redistribution. Redistribution seems to have a limitation to evaluate the myocardial salvage by ICT.

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UTILITY OF Tl-201 STRESS MYOCARDIAL SCINTIGRAPHY FOR EVALUATION OF ISCHEMIA IN PRE AND POST PTCA (PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY). T. Uehara, T. Nishimura, K. Hayashida, M. Takamiya, T. Sumiyoshi, M. Saito, K. Haze and K. Hiramori. National Cardiovascular Center, Osaka.

Tl-201 stress myocardial scintigraphy was performed in pre and post PTCA for the evaluation of pre-PTCA ischemia and post-PTCA improvement and follow-up study in 41 cases.

The result is as follows: (1) The pre-PTCA ischemia could not be detected in all 3 cases of 75% coronary stenosis, but it could be detected in all cases of more than 90% coronary stenosis except for some cases of insufficient exercise and multiple vessel disease. (2) In cases of myocardial infarction, post-PTCA myocardial perfusion improvement is observed, if the "filling in" is observed in infarction area. (3) In double vessel disease, pre-PTCA ischemia is improved in post-PTCA examination, but another part of ischemia may be revealed in some cases. (4) In 2 cases of 4 restenosis cases, quantitative post-PTCA ischemia is observed in early stage.

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EVALUATION OF POSTINTERVENTIONAL CHANGE OF REGIONAL MYOCARDIAL BLOOD FLOW BY Tl-201 UPTAKE CHANGE. S. Wakasugi, Y. Hasegawa, S. Nakano, T. Kobayashi and Y. Fudemoto. The Center for Adult Diseases, Osaka.

To determine if Tl-201 uptake change can be used as an index of postinterventional change of regional myocardial blood flow, preintervention and postintervention stress Tl-201 myocardial imagings were performed in 21 patients (pts) who underwent percutaneous transluminal coronary angioplasty (PTCA group), 9 pts with intravenous administration of nicorandil (nicorandil group) and 16 pts with oral administration of  $\beta$ -blocker ( $\beta$ -blocker group). In PTCA group and nicorandil group, post-interventional Tl-201 uptake significantly increased in ischemic myocardial segments compared to preintervention. In contrast, Tl-201 uptake in normal myocardial segments did not change significantly. In  $\beta$ -blocker group, rate-pressure product showing myocardial  $O_2$  consumption and Tl-201 uptake in normal segments significantly decreased compared to preintervention. On the other hand, there was no significant reduction of Tl-201 uptake in ischemic segments. These results suggest that Tl-201 uptake change can be used as a valuable index of postinterventional change of regional myocardial blood flow.