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ASSESSMENT OF REGIONAL WALL MOTION ABNORMALITIES IN MYOCARDIAL INFARCTION BY Tc-99m BLOOD POOL IMAGING. K. Tazawa, M. Yamada, N. Ohgitani, K. Ohnishi, Y. Kobayashi and A. Katayama* Cardiovascular Dept. and Radioisotope Center[‡] Osaka Prefectural Hospital. Osaka

This study was aimed to assess left ventricular function in cases of myocardial infarction an average of 3 months after a acute event using Tc-99m blood pool imaging. In assessment of left ventricular function, left ventricular global ejection fraction (G-EF) and regional ejection fraction (R-EF), calculated as time activity curve for end-diastolic and end-systolic regions of interest using Ohio-Nuclear VIP-450 system, were examined. Tl-201 perfusion imaging was also examined. Anteroseptal MI (15 cases): G-EF was reduced more than that of control (normal and valvular disease) (Anteroseptal MI: 0.45 ± 0.17 ; control: 0.64 ± 0.13). In cases without Tl-201 perfusion defect, septal and apical R-EF were reduced, while in cases with Tl-201 perfusion defect, lateral R-EF was also reduced. Inferior MI (11 cases): G-EF was reduced (0.45 ± 0.14). In cases without Tl-201 perfusion defect, R-EF was not reduced, while in cases with Tl-201 perfusion defect, apical and lateral R-EF were reduced. These results suggest that Tc-99m blood pool imaging could be available for assessment of left ventricular function and regional wall motion abnormalities.

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EVALUATION OF Tc-99m PYP MYOCARDIAL SCINTIGRAPHY FOR DIAGNOSIS OF MYOCARDIAL INFARCTION. E. Yasuda, H. Yosida, H. Itikawa, I. Kanamori, S. Nakano, T. Sibata, M. Sikanoo, T. Fukaya and H. Sassa Department of Radiology and Department of Internal Medicine, Ogaki Municipal Hospital. Ogaki

The usefulness of Tc-99m PYP myocardial scintigraphy was investigated in respect to local wall motion abnormality on respective 26 and 4 patients with old myocardial infarction and angina pectoris.

Results obtained are as the following.
(1) In patients with the disorder of left ventricular wall motion, hot lesion in the scintigram was observed in (100%) 12 of 12 patients with dyskinesia, (88%) 7 of 8 patients with akinesia and (33%) 2 of 6 patients with hypokinesia. (2) In patients of scintigraphically positive, Ejection Fraction was significantly lower than in patients of scintigraphically negative, Thallium score and elevation of ST segment in ECG were significantly higher than those of it ($P < 0.05$). (3) Though the localization of lesion detected by both the scintigraphy and left ventricular cineangiography coincided in case of discrete type, the diffused hot lesion around the position of wall motion abnormality were detected in cases of massive and diffuse type. (4) Tc-99m PYP myocardial scintigraphy is also proved to be a useful tool for the rough estimation of wall motion abnormality in old myocardial infarction.

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LONG-AXIAL IMAGES OF MYOCARDIUM OBSERVED FROM MULTI-PROJECTIONS USING SLANT-HOLE COLLIMATOR-IMPROVEMENT OF ACCURACY IN DIAGNOSIS OF LOCATION AND EXTENSION OF MYOCARDIAL INFARCTION. T. Uehara, T. Nishimura, K. Hayashida, H. Ohmine, H. Naitoh, T. Kozuka, M. Hayashi, M. Kagawa, Y. Yamada, S. Itoh, E. Boku*, H. Sakakibara* Department of Radiology, Cardiology, National Cardiovascular Center, Osaka

Conventional RAO images of myocardium by Tl-201 myocardial scintigraphy are unclear because of inevitable distance between the heart and the collimator, and the postero-septal and antero-lateral walls can't be observed clearly. Conventional LAO images have much foreshortening, and the basal area of the antero-septal and postero-lateral walls can't be observed. In contrast, the RAO images of myocardium using slant-hole collimator are clearer than the conventional RAO images because of setting the collimator closer to the heart, so the postero-septal and antero-lateral walls of myocardium can be observed clearly. The MLAO images of myocardium using the slant-hole collimator are more longaxial images compared with the conventional LAO images, and the basal and apical area of the antero-septal and postero-lateral walls of myocardium can be differentiated. As the result, the myocardial scintigraphy should be observed longaxially with the collimator close contact with the heart using the slant-hole collimator from multi-projections continuously around the heart.

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THE VALUE OF 99m-Tc PYP SCAN IN MYOCARDIAL INFARCTION. S. Masumi, Y. Koga Div. of Circulation, Dept. of Internal Medicine, Dept. of Radiology, Showa Univ. Fujigaoka Hosp. Yokohama

We evaluated scintigraphic techniques in estimating its predictive value - severity and prognosis of myocardial infarction. In 43 cases with acute MI, 99m-Tc-PYP (Tc-PYP) infarct scintigraphy was performed within two weeks after onset of AMI. Gated blood pool scintigraphy and 201-Thallium (201-Tl) perfusion scintigraphy were performed at old stage of MI and serial venous blood specimens were taken for measurement of maximum creatine phosphokinase at acute stage. The severity and prognosis value were studied from the abnormal Tc-PYP uptake, 201-Tl uptake defect, the ejection fraction of gated blood pool study and maximum CPK. **Result:** 1) The positivity rate of Tc-PYP within two weeks after onset of AMI was 74.4% - within 3 days was 93.7%. 2) "Doughnut" pattern of Tc-PYP was correlated well with the cases of extensive Tl defect, lower Max. CPK and relative lower R.I., E.F.. "doughnut" pattern may be a marker of extensive myocardial necrosis and poor prognosis. 3) Many cases of Tc-PYP follow-up study had negative study within one month. Two cases of persistent positive Tc-PYP study had cardiac aneurysms.