

116

QUANTITATIVE AND QUALITATIVE ANALYSIS OF Tl-201 MYOCARDIAL PERFUSION IMAGES IN 300 CASES OF VARIOUS CARDIAC DISEASES. S. Yamamoto, N. Kawai, H. Miyakoda, K. Shiki, M. Tsuzuki, H. Inagaki and I. Sotobata. 1st Dept. of Internal Med. Nagoya Univ. School of Med. Nagoya. Y. Obata, T. Abe, M. Nishino, Y. Kameyama and E. Noguchi. Dept. of Radiol. Nagoya Univ. School of Med.

Tl-201 myocardial perfusion images were analysed quantitatively and qualitatively in about 300 cases of old myocardial infarction (small infarction; S-MI and large infarction; L-MI), angina pectoris (AP), dilated cardiomyopathy (DCM), hypertrophic cardiomyopathy (HCM), Dystrophia Musculorum Progressiva (DMP), congenital heart disease (CHD) and valvular heart disease (VHD) and normal control (N). Myocardial uptake index (MUI; Tl count ratio of myocardium to background), %Tl defect and right ventricular or lung uptake of Tl-201 were evaluated. MUIs were significantly smaller in both L-MI and DCM and significantly larger in both HCM and VHD than in N. The %Tl defect was significantly larger in S-MI, L-MI, DMP and DCM than in the other groups. Tl uptake of right ventricle increased in VHD or CHD with right ventricular overload, and in some patients with DCM and L-MI. Clockwise rotation of interventricular septum was noted in VHD or CHD with right ventricular volume overload.

In conclusion, Tl-201 myocardial perfusion image could be useful, to some extent, in diagnosing not only coronary artery disease but also various other cardiac diseases.

118

EVALUATION OF MYOCARDIAL SCINTIGRAPHY (Tc-PYP & TlCl) PERFORMED IN PATIENTS WITH AMI. S. TAKAMI, M. YAMAMOTO, T. HAYASE, K. ONO, S. GOTO, S. KAWASHIMA, Chigasaki municipal Hpl, Kanagawa. K. KASHIWADA, St Marianna Univ., Kanagawa. Y. SASAKI, Toho Univ., School of Med. Tokyo.

Although usefulness of the myocardial scintigraphy in patients with AMI have been reported. It is not always easy to perform the examination in the acute phase in Japan. We undertook myocardial scintigram using PYP & TlCl in the earliest possible in patients who complained chest pain and were suspected of having AMI.

Of the 44 cases with AMI, 81.8% & 85.2% were positive for PYP & TlCl respectively. Among 6 non-AMI cases, one revealed positive

PYP and negative TlCl studies. The other 5 cases were negative in both scintigrams. PYP images were repeated in 13 cases with AMI. Six of them showed persistently positive images after 14-110 days. Three cases that showed donuts pattern in PYP-scan were complicated with CHF and 2 died suddenly at 7th & 105th day after onset of AMI.

Diabetes and Hypertension were the complications frequently associated with AMI cases with high grade accumulation of PYP images.

Myocardial scintigraphy, when performed in early stage of chest pain syndromes, showed provide useful information on the diagnosis, treatment and prognosis of AMI.

*PYP: Tc-99m Pyrophosphate,
TlCl: Tl-201 Chloride,

117

CLINICAL USEFULNESS AND LIMITATION OF Tc-99m PYP MYOCARDIAL SCINTIGRAM IN THE DIAGNOSIS OF ACUTE MYOCARDIAL INFARCTION. M. Kawataki, M. Saito, T. Sumiyoshi, K. Fukami, K. Haze, K. Hiramori, T. Uehara, T. Nishimura, K. Hayashida, T. Kozuka. National Cardiovascular Center, Osaka.

This study was aimed to clarify the clinical usefulness of Tc-99m PYP myocardial scintigram (Tc-MS) for the diagnosis of acute myocardial infarction (AMI). Forty-eight patient with AMI (transmural: 21, nontransmural: 27) had Tc-MS 4 to 5 days after the onset. The images were interpreted +2 or more of Parkey's class as positive. The overall sensitivity of Tc-MS for the detection of AMI was 68%. There was a tendency that sensitivities were increased with the size of MI estimated from peak CPK value, however among 15 patients with peak CPK value of more than 2000 IU/L, 5 cases showed negative Tc-MS. There were no statistical differences between these scintigram-negative and positive patients regarding to their ages, transmurality of MI, time from onset to peak CPK value, incidence of angina pectoris and old MI, and the extent of LV asynergy, suggesting no pathophysiological differences between these two groups. Comparison were also made on the sensitivities of Tc-MS and ECG for the diagnosis of the site of MI which was, in general, difficult to be diagnosed by ECG. Tc-MS was more sensitive than ECG in BBB and posterior MI.

Therefore, clinical usefulness of Tc-MS was thought to be limited to the difficult cases to be diagnosed by ECG.

119

EVALUATION OF Tc-99m PYP MYOCARDIAL SCINTIGRAPHY IN ESTIMATION OF MYOCARDIAL INFARCT SIZE. Y. Kawamura, T. Kakizaki, N. Shimodaira, Y. Matsueda and T. Masuoka. Nihon Kohkan Hospital. Kawasaki.

We evaluated the clinical usefulness of Tc-99m PYP myocardial scintigraphy in estimating infarct size of acute myocardial infarction. Tc-99m PYP scintigraphy was performed within six days after onset of acute MI. The maximal projected area of abnormal PYP uptake in four views was used as an index of scintigraphic infarct size.

Tc-99m PYP scintigraphic infarct size was larger in patients with congestive heart failure than in patients without heart failure.

Tc-99m PYP infarct size was significantly correlated with the maximal CPK.

We studied the regional wall motion abnormality and wall thickness by real-time two-dimensional echocardiography. There was a good correlation between the Tc-99m PYP scintigraphic infarct area and the echocardiographic infarct size.

Tc-99m PYP myocardial scintigraphy was clinically useful to estimate the extent of myocardial involvement in patients with acute MI.