CLINICAL SIGNIFICANCE OF TECHNETIUM-99m PYROPHOSPHATE MYOCARDIAL SCINTIGRAMS IN PATIENTS WITH OLD MYOCARDIAL INFARCTION.

To assess the clinical significance of Tc-99m pyrophosphate (PYP) myocardial scintigrams in patients with old myocardial infarction (OMI), Tc-99m PYP myocardial scintigrams were obtained in 33 patients with OMI. Tc-99m PYP scintigrams were graded on a scale from grade 0 to IV according to Parkey’s classification. Each scintigram was also classified as focal or diffuse Tc-99m PYP uptake.

Thirteen of 33 patients (39.4%) had a grade II positive scintigram and 9 (27.3%) had a grade III strong positive scintigram. Patients with grade II focal and grade III positive scintigrams were demonstrated to have lower left ventricular ejection fraction than those with grade 0, I, and II diffuse (38 ± 2.7% vs 51 ± 2.9%, p < 0.01). Majority of patients with grade II and III had a multivessel disorder in coronary arteriograms. On the other hand, patients with grade 0 and I were demonstrated to have normal coronary or one vessel disease except one.

Thus, patients with positive Tc-99m PYP scintigrams in old myocardial infarction have greater impairment of left ventricular function compared with those without positive scintigrams and have a multivessel disease in coronary arteriograms.

VALUE OF TC-99M-PYP MYOCARDIAL SCINTIGRAPHY IN THE DIAGNOSIS OF CARDIAC AMYLOIDOSIS.
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Tc-99m-PYP scintigraphy was performed in 4 patients with primary amyloidosis and 6 with familial amyloid polynuropathy (FAP), and its clinical significance and value in the diagnosis of cardiac amyloidosis were evaluated. Diffusely positive myocardial uptake of Tc-99m-PYP was observed in all of systemic amyloidosis (marked 2, moderate 6, mild 2), of whom 2 had also hepatic uptake and another one had both hepatic and thyroid uptake. FAP had slightly less intensity than primary amyloidosis. On the other hand, 7 of 31 patients with other cardiac diseases had also diffusely positive myocardial scans of mild or moderate degree. But, none of them had marked myocardial uptake, nor hepatic and thyroid uptake.

In conclusion, Tc-99m-PYP scintigraphy is a useful non-invasive procedure in the diagnosis of cardiac amyloidosis in not only primary amyloidosis but also FAP. However, we should pay attention to the hepatic and thyroid uptake besides positive myocardial scans when cardiac amyloidosis is diagnosed by Tc-99m-PYP scintigraphy alone because diffusely positive myocardial uptake of Tc-99m-PYP is usually seen in other cardiac diseases.