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THE CLINICAL USEFULNESS OF Tc-99m PYP MYOCARDIAL ECT IN DIAGNOSING SITE AND SIZE OF ACUTE MYOCARDIAL INFARCTION. H.Matsushima, S.Yamamoto, N.Kawai, A.Suzuki, M.Okada, H.Hayashi, I.Sotobata, S.Miwata*, K.Mochizuki*, H.Kida*, K.Okamura*, F.Kasahara* and A.Takeuchi**. Nagoya Medical University School of Medicine, Nagoya.
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The purpose of the present study was to evaluate the clinical usefulness of Tc-99m PYP myocardial ECT (PYP-ECT) in diagnosing the site and size of acute myocardial infarction (AMI). PYP-planar and ECT images were obtained on 35 patients suspected of AMI in the acute stage, and Tl-201 myocardial ECT (Tl-ECT) and Tc-99m gated blood-pool imaging were performed in the chronic stage. Diagnostic sensitivity for detection of the infarct site determined with Tl-ECT was better in ECT than in planar PYP images (83~87% vs 77~83%). PYP-infarct size significantly correlated with Tl-infarct size and LVEF ($r=0.79$ and -0.67 , respectively) and also with peak enzyme levels (CPK, LDH and α -HBD) ($r=0.75$, 0.72 and 0.66 , respectively). It was concluded that PYP-ECT imaging was useful for diagnosing the site and size of AMI.

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EVALUATION OF 631 CASES OF Tl-201 MYOCARDIAL IMAGING BY i.v. DIPYRIDAMOLE.

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Tl-201 myocardial scintigrams were carried out from May '78 to December '84 in 1777 cases. Under i.v. dipyridamole (Dp) Tl-myocardial imagings were collected in 631 cases. Typical angina attack appeared in 5.5% and shock were 5 cases. By rapid drip infusion 3 cases were immediately recovered but two cases had prolonged shock and noradrenalin was necessary in recovering. In comparison of Tl-imagings (Dp) and coronary angiography 137 cases-411 vessels, diagnostic sensitivity, specificity and accuracy of proximal coronary artery stenoses (50% over) were evaluated. ($p < 0.05$)

	Sensitivity(%)			Specificity(%)		
	rest	ex. Dp.	Dp.	rest	ex. Dp.	Dp.
anterior	63	69	86	57	45	74
lateral	26	43	38	97	100	97
inferior	44	50	60	79	80	87
total	47	57	66*	82	77	87

About diagnostic value of 50% stenoses in angina pectoris, ($p < 0.05$)

	Sensitivity(%)			Specificity(%)		
	rest	ex. Dp.	Dp.	rest	ex. Dp.	Dp.
total	29	50	69*	74	76	81

Global sensitivities were lower in planar images, but the sensitivity was improved by dipyridamole procedure, significantly. In old ages with angina pectoris, Dp-Tl myocardial imagings were useful and safety.

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EVALUATION OF DIFFUSE CARDIAC UPTAKE IN THE PLANAR IMAGING BY Tc-99m PYROPHOSPHATE MYOCARDIAL ECT IMAGING

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To assess the diffuse cardiac uptake of Tc-99m PYP with conventional planar imaging, we performed emission computed tomography (ECT) in 38 cases with acute myocardial infarction (AMI) and 27 cases without AMI (DCM, Old MI, Angina pectoris, Valvular disease, Amyloidosis). The intensity of the Tc-99m PYP uptake was graded from +4 according to the method of Parkey et al. In 39 cases who showed +1 or +2 activity, 32 cases (82%) showed residual blood-pool activity on ECT imaging. In 26 cases who showed +3 or +4 activity, 25 cases (96%) showed focal pattern of myocardial uptake on ECT imaging. In 27 cases of without AMI, 26 cases (96%) had +1 or +2 activity and 1 case had +3 activity on planar imaging. All cases without AMI revealed cardiac blood-pool activity without significant myocardial uptake on ECT imaging. Thus, the ECT imaging indicated that +1 or +2 cardiac uptake seen in the planar imaging was mainly residual blood-pool activity, especially in cases who had no evidence of AMI. Furthermore, ECT imaging is useful for differentiation of myocardial uptake from residual blood-pool activity.

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COMPARISON BETWEEN Tl201 MYOCARDIAL SCINTIGRAMS AND RADIONUCLIDE VENTRICULOGRAMS AFTER DIPYRIDAMOLE INFUSION.

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To investigate relationship between transient defect (TD) on Tl myocardial scintigram (TMS) and wall motion abnormality on radionuclide ventriculogram (RVN), we performed dipyridamole (DP)-infusion stress test on 6 pts without and 22 pts with coronary artery disease (CAD). Serial tomographic TMS was obtained initially and 3hrs after iv-DP, using a rotating bilateral collimator. First-pass RVN was performed to estimate global ejection fraction (GEF) and regional EF (REF) at rest and after iv-DP. DP was infused at .15mg/kg/min for 4 minutes. Tracers were infused 6 minutes after iv-DP, excepting when angina or ischemic ST depression occurred. All of the pts without CAD showed 5% or more increase in GEF compared to rest, and no TD on TMS. Fourteen pts with CAD, though, had angina and/or ST depression, and showed significant decrease in GEF after iv-DP. The site where REF showed decrease after DP was in accord with the site of TD on TMS. But, in the remained 8 pts, TD were detected on TMS in spite of no evidence of wall motion abnormality. Our results suggest that imbalance of myocardial perfusion induced by iv-DP does not always produce regional wall motion abnormality.