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SEGMENTAL ANALYSIS OF STRESS ECT IMAGING: -QUALITATIVE AND QUANTITATIVE ANALYSIS-  
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The value of stress and redistribution thallium emission computed tomography (ECT) for detecting individual coronary artery involvement was analyzed in 58 cases who underwent coronary arteriography.

Perfusion defect was observed in 45 of the 48 cases with CAD (94%) and in 78 of the 95 diseased vessels (82%). Number of diseased vessels was accurately predicted in 78% of those with single vessel disease and in 69% of those with two-vessel disease, but only in 47% of those with three vessel disease. Quantitative assessment of thallium initial uptake and washout rate improved the sensitivity for detection of individual vessel involvement (95%) and accuracy for prediction of three vessel disease. The sensitivity for detection of individual vessel involvement was 85% for RCA, 90% for LAD and 63% for LCX. The specificity was also high (90% for RCA, 93% for LAD and 100% for LCX). Marked asynergy was seen only in 15% of the segments with transient defect but in 58% of those with persistent defect.

Thus, stress and redistribution thallium ECT is a sensitive and specific tool for predicting individual vessel involvement and regional myocardial viability.

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ASSESSMENT OF ISCHEMIA AND LEFT VENTRICULAR FUNCTION BY EXERCISE RADIONUCLIDE VENTRICULOGRAPHY AND STRESS  $^{201}\text{Tl}$ -MYOCARDIAL EMISSION COMPUTED TOMOGRAPHY. A.Uenami, T.Mizuno, K.Wakino, J.Ohno. Mimihara G. Hospital. Sakai.

We have developed "Cardio-respiratory monitoring system" which enables the "real time" monitoring of cardiac and pulmonary functions during the exercise radionuclide studies.

In order to assess ischemia, LV function and regional LV wall monitor, this system and  $^{201}\text{Tl}$ -Myocardial ECT were performed 20 patients who underwent selective coronary angiography.

We had been much interested experience in correspondent to ischemia and LV functional parameters (EF,CD,EDV,ESV,SV. etc) on exercise studies.

In conclusion, exercise radionuclide ventriculography and  $^{201}\text{Tl}$ -Myocardial ECT were clinically useful for the evaluation of LV functional reserve.

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SPATIAL PROGRESSION OF ANTERIOR INFARCT WITH INCREASING DURATION OF CORONARY OCCLUSION IN MAN: ASSESSMENT BY TL-201 EMISSION TOMOGRAPHY. S. Tamaki, T. Murakami, K. Kadota, H. Kambara, Y. Suzuki, R. Nohara, C. Kawai, N. Tamaki, K. Torizuka. Third Division, Department of Internal Medicine, and Department of Nuclear Medicine, Kyoto University.

The effects of the duration of coronary artery occlusion(CAO) on the size and spatial distribution of anterior infarcts were studied in 24 patients(pts) with first acute myocardial infarction(MI) due to proximal left anterior descending CAO who underwent intracoronary thrombolysis using urokinase. The pts were grouped by interval from onset of MI to recanalization; A:<4 hrs(n=9), B:4-10 hrs(n=9), C:>10 hrs(n=6). On a series of multiaxial thallium-201 tomograms obtained 4 weeks after MI, the size and distribution of perfusion defects(PD) were assessed by dividing the left ventricle into 9 antero-septal(AS), 14 anterior(AN), 5 posteroseptal(PS), 14 lateral(L) and 9 inferior(I) myocardial segments scored on a scale of 0-3(0: normal, 1:small PD, 2:moderate PD, 3:large PD) and summed to form a total defect score for each pt. The results(mean±SD) were:

	AS	AN	PS	L	I	Total	
A.	8±6	4±2	<1	0	0	12±7	p<.001
B.	22±3*	20±4°	6±2°	<1	0	48±7°	vs A:°
C.	24±2*	29±4°*13±2°*1±1	0	68±4°*			vs B:*

These results suggest a spatial progression of myocardial involvement from localized AS and/or AN to the surrounding myocardium with increasing duration of CAO in human anterior infarcts.

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STUDY ON THE SITE AND REGIONAL WALL MOTION IN MYOCARDIAL INFARCTION-COMPARISON BETWEEN TL-201 ECT AND TWO DIMENSIONAL ECHOCARDIOGRAM. M.Ohyanagi,A.Konishiike,Y.Todo,Y. Tsuda,R.Fujisue,M.Tanimoto,T.Yamamoto, Y.Kawai,T.Iwasaki and M.Fukuchi. 1st dep.of Medicine, and RI center, Hyogo College of Medicine, Nishinomiya.

The estimation of the site and the abnormality of the regional wall motion of myocardial infarction is important from the view of treatment as well as prognosis. One month after the onset of myocardial infarction, TL-201 emission computed tomogram(ECT), two dimensional echocardiogram(2DE), coronary angiogram(CAG) and left ventriculogram(LVG) were performed. The left ventricular short axis image by ECT was reconstructed at the level of mitral valve, the papillary muscle, the apex, and the average count of box ROI was calculated for each level and the percentage of the largest count in 24 sections was estimated as the ROI value. The ROI value were divided into those less than 40%(Akinesis), 40-70%(Reduced) and 70 or above(Normal). On the 2DE, the short axis view at each level were divided into 8 sections. The radial shortening rate for each section was calculated and those of 10% or less were estimated as Akinesis and from 10%-normal value-1SD as Hypokinesis. There were a good correlation between the ROI value of ECT and radial shortening rate of 2DE.