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## EVALUATION OF DILATED CARDIOMYOPATHY BY Tl-201 MYOCARDIAL SPECT.

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Tl-201 myocardial SPECT was performed in 41 dilated cardiomyopathy (DCM) and 23 ischemic heart disease (IHD; EDV  $\geq$  200 ml by LVG) for the purpose of non-invasive diagnosis of DCM. We assessed the perfusion abnormality of 5 segments of SPECT images in 4 grades as follows; 0: normal, 1: mild low uptake, 2: severe low uptake, 3: complete defect. Thus, we defined the abnormal perfusion score (APS) as the summation of the grades in 5 segments.

1) Perfusion abnormality was found 80% in DCM and 100% in IHD.

2) We could distinguish DCM from IHD with APS under 7 and rare complete defect in DCM (34/41: 83%).

3) The perfusion abnormality had a good relation with wall motion abnormality in IHD, but not in DCM.

4) In spite of exercise induced severe symptoms and arrhythmia in some DCM cases, stress SPECT was efficient especially to rule out IHD.

Thus, we conclude that Tl-201 SPECT in DCM is useful method for the non-invasive diagnosis, but wall motion abnormality has no relation with perfusion abnormality, which imply the etiology of DCM as not only coronary microcirculation abnormality.

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INVESTIGATION OF  $^{67}\text{Ga}$  MYOCARDIAL SPECT IMAGE IN PATIENTS WITH DILATED

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We studied  $^{67}\text{Ga}$  myocardial planar and SPECT image in 20 cases with dilated cardiomyopathy (DCM) and their clinical features.

1) In planar image, accumulation of  $^{67}\text{Ga}$  myocardium was not found.

2) In SPECT image, positive accumulation was found in one case and equivocal accumulations were found in two cases, but it was a low incidence 15% (3/20).

3) Cardiac functions in patients with positive and equivocal accumulation of  $^{67}\text{Ga}$  was better than that in patients with negative accumulation.

The result of this study suggests that the  $^{67}\text{Ga}$  myocardial SPECT image may be a clue to elucidate the etiology of DCM and may be a useful tool to subdivide heterogeneous DCM.

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CLINICAL EVALUATION OF THALLIUM-201 MYOCARDIAL SCINTIGRAM IN MYOCARDITIS. T. Shimonagata, T. Nishimura, K. Hayashida, T. Uehara, M. Takamiya. National Cardiovascular Center, Suita.

In fourteen cases of prior Myocarditis, Thallium-201 myocardial scintigraphy was performed and myocardial perfusion was compared with left ventricular function assessed by gated blood pool scan and echocardiography.

Ten cases (Group I) demonstrated poor thallium uptake in left ventricular myocardium or thallium perfusion defects. On the other hand, four cases (Group II) showed normal perfusion. In five cases of Group I, left ventricular enlargement was prominent mimicking "Dilated cardiomyopathy" and left ventricular ejection fraction ( $M \pm SD$ ) was  $32 \pm 6\%$ . In two cases of Group I, poor thallium uptake in left ventricular myocardium and a focal thallium perfusion defect demonstrated in acute phase were resumed in chronic phase in accordance with the improvement of clinical manifestation and biochemical examination. Thallium myocardial scintigraphy was useful in Myocarditis not only to evaluate the extent of myocardial damage in acute phase but also to follow up in chronic phase.

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## A STUDY OF SECONDARY CARDIOMYOPATHY USING Tl-201 MYOCARDIAL SCINTIGRAPHY.

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To evaluate cardiac involvement of collagen disease (10 patients with SLE, one with polymyositis and one with periarteritis nodosa; PN) and sarcoidosis, a Tl-201 scintigraphy was performed. A cardiac catheterization and a right ventricular endomyocardial biopsy (RV biopsy) were undertaken in some patients. The Tl-201 images showed fixed perfusion defects in 8 of 10 patients with SLE and one with polymyositis. A patient with PN had a transient perfusion defect in the exercise Tl-201 imaging. Histological findings on the RV specimen showed fibrosis of interstitial in the SLE, myocytolysis in the polymyositis and perivascularitis in the PN.

On the other hand, four of 5 patients with cardiac sarcoidosis showed the perfusion defects on the Tl-201 images. Two of 3 patients with the segmental defect had abnormal motion on the LVG in the same site as the defect. Myocardial sarcoid granuloma was confirmed by the RV biopsy in one of them and by necropsy in another. The former showed disappearance of the Tl-201 defect during steroid therapy.

It is suggested that Tl-201 imaging provides a useful method in diagnosing cardiac involvement of collagen disease and sarcoidosis.