Thus this method is useful to evaluate non-invasively and quantitatively coronary hemodynamics in various loading.

EVALUATION OF BI-VENTRICULAR HYPERTROPHY (BHV) AND RIGHT VENTRICULAR HYPERTROPHY (RVH) BY THERMOLUMINESCENT DOPPLER DETECTOR IMAGING COMPAERED WITH VECTORYCARDIOGRAFY (VCG).

TL201 myocardial scintigraphy and vectorcardiography (VCG) were performed simultaneously in 27 patients with bi-ventricular hypertrophy (BHV) and right ventricular hypertrophy (RVH).

TL201 uptake in myocardial tissue is mainly depend on blood flow to the tissue and so, we measured RV/LV uptake ratio and RVBU/LVDD ratio in LAO view of TL201 myocardial imaging. According to the classification of Chou’s, we modified six patterns of horizontal plane in VCG, and compared with the each six pattern and the average of RV/LV, RVBU/LVDD ratio. TL201 myocardial imaging was similar tendency to the assessment of the six patterns in VCG.

Therefore, the assessment of the quantitatively and qualitatively analysis of RVH and BHV which were suggested volume overload or pressure overload, were observed in this comparative studies.

We concluded that our new method of right ventricular scintigraphy and VCG is useful to evaluate RVH and BHV in patients.

DIAGNOSIS OF PULMONARY COMPLICATIONS IN PATIENTS WITH TRANSPOSITION OF GREAT ARTERIES (TGA) AFTER MUSTARD’S OPERATION BY TL201 MYOCARDIAL IMAGING.

TL201 myocardial images were reviewed in 10 patients (pts) with TGA after Mustard’s operation. The visualization of the right ventricle corrected as systemic ventricle was strong in all pts, but that of left ventricle corrected as pulmonary ventricle was weak in most pts (7/10). In 2 pts with pulmonary hypertensive PH and pt with pulmonary stenosis (PS) with increased LV pressure, however, LV was strongly visualized similar to RV. To compare the TL201 uptake in LV and RV walls quantitatively, we determined the ratio of radioactivities in LV and RV walls in LAO image after the processing of interpolative background subtraction.

Results: In 7 pts with weak visualization of LV, the RV/LV ratio was higher (3.13 ± 0.40) than in 3 pts with strong visualization of LV (0.93 ± 0.08). This ratio also correlated well with that of RV and LV pressure (RVP/LVP) (r = 0.94, p < 0.01). Thus, the relative increase of TL201 uptake in LV wall in pts with TGA after Mustard’s operation suggests the possibility of predicting the presence of PH and PS complicating this disorder.

Based on conventional myocardial scintigrams, 24 patients of hypertrophic cardiomyopathy were classified into four types. Patients of type I (n=6) had homogeneously thickened left ventricular wall with visualized sinus portion on the scintigram, which were corresponded with oval or spindle shape of left ventricular cavity on contrast ventriculogram. Patients of type II (n=6) had extremely hypertrophic myocardium so that their ventricular lumen could not be detected. Most of them had kidney or banana shape and hour-glass shape of left ventriculogram. It was certified that mean LV mass of type I was significantly lower than that of type II (p<0.01).

Asymmetric septal hypertrophy and apical hypertrophy confirmed by echocardiography was also shown in patients of type III (n=4) and type IV (n=2), respectively. Patients of all types had subnormal levels of 1/3 mean filling rate (mFR) derived from LV volume curve of cardiac blood pool scan (type I:1.50, type II:1.18, type III:1.17, type IV:1.20/sec). We recognized that 1/3 mFR was the important diastolic index in diagnosis of hypertrophic cardiomyopathy.