

## 149

Effects of sublingual isosorbide dinitrate on Tl-201 myocardial uptake ratio and images — Evaluation by SPECT —  
Y. Futagami, K. Makino, M. Yamamuro, T. Ichikawa, T. Konishi, M. Hamada, T. Nakano, H. Takezawa, T. Ito, H. Maeda and T. Nakagawa. Mie University School of Medicine, Tsu.

Tl-201 myocardial single photon emission computed tomography (SPECT) was performed in 10 patients with myocardial infarction for evaluation of the effects of sublingual isosorbide dinitrate (ISDN) on Tl-201 myocardial uptake ratio and images. After intravenous administration of 2.5 mCi of Tl-201, resting SPECT data were collected as control and after sublingual 5 mg ISDN in one week interval. Transaxial, sagittal and coronal tomographic images were visually estimated and quantitative analysis for myocardial uptake ratio and left ventricular volume was based on phantom study. The results were as follows.

- 1) On myocardial images, perfusion defect did not show significant improvement after sublingual ISDN except one case.
- 2) Tl-201 myocardial uptake ratio increased significantly after ISDN compared with that of control without significant change of left ventricular volume ( $2.8 \pm 0.4\%$  vs  $3.4 \pm 0.4\%$ ,  $p = 0.001$ ).
- 3) The effects on myocardial perfusion of ISDN seemed to be the increase of total left ventricular perfusion, but not to be the increase of blood flow in completely necrotic area.

## 151

EVALUATION OF Tl-201 MYOCARDIAL SPECT IN CASES WITH DUCHENNE TYPE PROGRESSIVE MUSCULAR DYSTROPHY. S. Jinnouchi, J. Asai, K. Inoue, Department of Radiology and Internal Medicine, Miyazaki Higashi Byoin National Sanatorium, Miyazaki, H. Hoshi, K. Watanabe, T. Imamura, Department of Radiology, and First Internal Medicine, Miyazaki Medical College, Miyazaki.

Clinical evaluation of Tl-201 myocardial SPECT in cases with cardiomyopathy in Duchenne type progressive muscular dystrophy (DMP) was reported. Cases subjected to study were 14 cases with DMP and 8 normal cases. Using a rotating gamma camera system (ZLC 7500 and scintipac 70A), SPECT data were collected for 16 minutes (32 Angles  $\times$  30 sec/Angle,  $180^\circ$ ). To evaluate myocardial change, Tl-201 myocardial uptake ratio (MUR) and left ventricular muscle volume (LVMV) were calculated using results obtained by phantom studies. MUR and LVMV were higher in DMP than in normal cases ( $3.6 \pm 1.0\%$ :  $2.7 \pm 0.3\%$ ,  $190.2 \pm 67.5$  ml:  $157.8 \pm 21.5$  ml, respectively). Hypoperfusion area of left ventricle were observed in 10 cases (71%) and frequently observed in posterior wall (71%), inferior wall (57%), lateral wall (43%). The hypoperfusion area become wider with age and stage. It was suggested that myocardial degeneration in DMP started in posterior wall and then spreaded in other areas, on the other hand remained left ventricular muscle was compensately hypertrophied.

## 150

DIAGNOSTIC RELIABILITY OF EXERCISE STRESS SPECT IN PATIENTS WITH KAWASAKI DISEASE ASSOCIATED WITH CORONARY ARTERY LESIONS.  
M. Miyagawa, T. Mochizuki, K. Yoshida, M. Watanabe, M. Niino, M. Miyazaki, H. Matsuda, K. Murase, H. Ito, A. Iio and K. Hamamoto. \* Ehime Kenritsu Imabari Hospital, \*\* Ehime University School of Medicine, Ehime.

Exercise Stress Single Photon Emission Computed Tomography (SPECT) for Tl-201 myocardial imaging was performed in 28 patients with Kawasaki disease associated with coronary artery lesions. Every ischemic lesion detected by SPECT was compared with the findings of CAG and planar images. Submaximal exercise stress was given to each patient by running or administration of Diprydamole. Then 2.0 mCi of Tl-201 was intravenously injected and exercise was continued for another one or two minutes. Using a single head gamma camera system, planar images were obtained and thereafter SPECT data were collected from 32 directions, 20 seconds per every directions for rotating  $180^\circ$ . After 2~3 hours, redistribution image data were collected. SPECT was more sensitive than the planar method for detecting the lesion. Ischemic lesions were detected by SPECT in 5 cases and all of them were well coincident with CAG findings. There were 2 cases of false negative, that is positive stenosis by CAG and negative ischemia by SPECT. However their stenoses were not so severe that the blood supply for the myocardium was thought to be not insufficient. Exercise Stress SPECT was considered to be very reliable for detecting stenotic lesions of coronary arteries in Kawasaki disease.

## 152

RELATIONSHIP BETWEEN HYPERTROPHIC CARDIAC MUSCLE ESTIMATED BY Tl-201 MYOCARDIAL SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY AND ITS INVERTED T WAVE IN ECG.  
M. Sawai, T. Tanno, Y. Sekiai, A. Mikuniya, K. Onodera, N. Nishizawa\* and T. Miyakawa\* (2nd Dept of Int Med and Dept of Radiol, Hirosaki Univ School of Med) K. Okamoto and H. Kamata (Dept of Int Med and Dept of Radiol, Hirosaki Municipal Hosp) A. Momose (Dept of Int Med, Saku Municipal Asama General Hosp)

To define clearly the relation of the shape of hypertrophic cardiac muscle detected by Tl-201 myocardial Single Photon Emission Computed Tomography (SPECT) to the appearance of inverted T wave change in ECG, we estimated in 7 patients with inverted T waves more than 10 mm in amplitude and in 6 patients less than 10 mm. Myocardial Single Photon Emission Computed Tomograms were gained by reconstruction of images, collected rotating gamma camera from RAO  $30^\circ$  to LPO  $60^\circ$  by 6 degrees, taken for 20 seconds in each image. In all 7 patients with inverted T waves more than 10 mm in amplitude, significant hypertrophic changes of cardiac muscle were recognized by SPECT. But, in 6 patients with inverted T wave less than 10 mm, we could not notice hypertrophic changes or could notice quite a little changes in them.

These data disclose that myocardial SPECT, a noninvasive method, is specially useful for long term estimation of the shape of cardiomyopathy as well as for evaluation of the existence or the extent of hypertrophic cardiac muscle.