199

A CLINICAL APPRAISAL OF Tl-201 MYOCARDIAL PERFUSION SCINTIGRAM IN CHRONIC PULMONARY DISEASE - ESPECIALLY CORRELATION WITH CRITERIA OF ECG DIAGNOSIS OF RIGHT VENTRICULAR HYPERTROPHY.

S Kawai, N Tanaka, M Sawada, H Oku, N Sakai, K Fujita, T Kitano, Y Fukunaga, A Ichinosawa, C Tanaka, K Shiota. Osaka Prefectural Habikino Hospital and First Depertment of Internal Medicine, Osaka City University Medical School. Osaka.

Tl-201 myocardial perfusion scintigraphy was performed in 56 patients with chronic pulmonary disease for detection of right ventricular hypertrophy. Thallium activity ratio(TAR) was computed with Tl-201 myocardial perfusion scintigram using microcomputer. The results were summarized as follows. 1) The correlation between TAR and left to right ventricular mass ratio using Fulton's method was evaluated in 11 autopsied patients. TAR closely correlated with left to right ventricular mass ratio($r=0.90$, $p<0.001$). 2) The reproducibility of TAR were evaluated in 20 patients. Inter- and intraobserver variation for TAR were small ($r=0.979$ and $r=0.924$, $p<0.001$). 3) ECG tracing were interpreted with the criteria of ECG diagnosis of right ventricular hypertrophy using WHO, Sasamoto, Roman and Milnor. Right ventricular hypertrophy was considered to be presented when TAR was always less than 2. The correlation between ECG criterias and TAR criteria were evaluated in 34 patients. WHO criteria was better than the others. Form the results obtained, it is concluded that TAR reflects anatomical right ventricular hypertrophy.

200

THALLIUM-201 MYOCARDIAL UPTAKE IN EXPERIMENTAL RIGHT VENTRICULAR HYPERTROPHY.

R.Arai H.Sawa,H.Nakajima,Y.Masuda,T.Fukuda,A.Yamashita,H.Ikeda,M.Ohmura,H.Ochi,Y.Onoyama,T. Mitsuhashi,M.Shimazaki. Departments of Radiology and Pathology, Osaka City University School of Medicine, Osaka.

In right ventricular hypertrophy following chronic pulmonary embolism induced by repeated administration of sephadex G 100 particles, the relation between Tl-201 myocardial uptake and distribution of Sr-85 labelled microspheres in the myocardium was studied, and RV pressure was also estimated. 23 rabbits were used for this study. 14 rabbits were injected approximately 20μCi of Tl-201 intravenously and 0.3μCi of Sr-85 was administered into LV. Animals were sacrificed 15 minutes after Tl-201 injection, and the removed hearts were separated into right and left ventricles following to Fulton's method.

In the Tl-201 myocardial uptake, the mean activity ratio of RV/LV was 7.0%±0.7 in control animals and 9.9%±1.3 in the embolic. In the distribution of Sr-85, the mean activity ratio was 16.5%±1.3 in control and 28.4%±4.3 in the embolic. There was close correlation between the activity ratio of Tl-201 and Sr-85 in the experimental hearts. The systemic pressure of RV in embolic animals (35±2.0 mmHg) was significantly higher than in control (24±2.0 mmHg). These results suggest that in experimentally induced RV hypertrophy the Tl-201 myocardial uptake had good relation to coronary blood flow.