THE INFLUENCE OF LEFT VENTRICULAR DIASTOLIC FUNCTION ON RIGHT VENTRICULAR FUNCTION IN THE PATIENTS WITH MILD LEFT VENTRICULAR DYSSYNCHRONISM


To assess the influence of left ventricular diastolic function on right ventricular function in the patient with mild left ventricular dysfunction, we performed Tc-99m first-pass angiography with multiray camera and 17-gated equilibrium sestamibi image against 13 patients with angina pectoris, 30 patients with prior myocardial infarction, 2 patients with hypertrophic cardiomyopathy and 2 patients with dilated cardiomyopathy. The subjects were divided into four groups, group 1 (LVEF<45%, RVEF<40%); 7 cases, group 2 (LVEF<45%, RVEF<40%); 4 cases, group 3 (LVEF<45%, RVEF<40%); 3 cases, group 4 (LVEF<45%, RVEF>40%); 4 cases, respectively. There were significant differences in PEP, TPEP, PFR, LVEDVI between group 1 and 3, and significant positive correlations were among TPEP, PFR, RVEDVI between group 1 and 2 while there were no differences in the left ventricular systolic phase indexes between them. These data mean that reduced left ventricular diastolic function makes the left ventricle enlarge and give the influence on right ventricular function.

REGIONAL EJECTION FRACTION IN THE PATIENTS WITH MYOCARDIAL INFARCTION — COMPARISON BETWEEN INFARCTED AREA AND NON-INFARCTED AREA —


We studied 71 patients with prior myocardial infarction to assess cardiac function by RI angiography, using a multiray camera (Baird Atomic System 77). The infarcted area (I) and non-infarcted area (N) were determined by regional ejection fraction (REF) image and left ventricular end-diastolic and end-systolic perimeter image. I-REF and N-REF were calculated by averaging the REF of each crystal at I and N. Group A consisted of 16 patients whose end-diastolic volume (EDV) was below 100 ml. Group B consisted of 34 patients whose EDV was between 100 and 140 ml. Group C consisted of 25 patients whose EDV was over 140 ml. In comparing patients with anterior myocardial infarction in Group A and B, no significant differences were found in global ejection fraction and N-REF. However, N-REF between Group B and C, and I-REF among Group A, B and C, did show significant difference. The value of N-REF is relatively restrained more than C. Moreover, as EDV increases, I-REF begins decreasing. This tendency was more apparent in patients with anterior myocardial infarction than those with posterior myocardial infarction. We thus concluded that cardiac function with myocardial infarction could be assessed more accurately by measuring I and N-REF.

EVALUATION OF LV FUNCTION AND MYOCARDIAL ISCHEMIA IN THE PRESENCE OR ABSENCE OF ANGINA PECTORIS DURING EXERCISE BY FIRST PASS RADIONUCLIDE ANGIOCARDIOGRAPHY

T. Yoshino, T. Oda, T. Kobayashi, Y. Fudemoto and K. Sakaguchi. The Center for Adult Diseases, Osaka and Osaka Prefectual Habikono Hospital, Osaka.

In order to evaluate left ventricular function and myocardial ischemia in the presence or absence of angina pectoris, we assessed the response of LVEF, LV volumes and SP/ESV (systolic pressure end-systolic volume) during exercise using RI angiography. The study group consisted of 10 patients with angina pectoris (AP) (G-A), 13 patients with myocardial infarction (MI) (G-M) and 6 normal subjects (G-N). G-M was divided into 2 groups, 7 with AP (G-M1) and 6 without AP (G-M2). All patients had AP with or without MI had more than 75% coronary artery stenosis. G-N showed increase in LVEF and SP/ESV, decrease in EDV and ESV. G-A and G-M1, however, showed decrease in LVEF and SP/ESV, and increase in EDV and ESV. In G-M2, SP/ESV increased but LVEF, EDV and ESV remained unchanged. Furthermore, 23 patients with AP with or without MI were divided into 2 groups. Group 1 included 10 patients who had AP during exercise and group 2 included 13 patients who had not. Group 1 showed significant decrease in LVEF and SP/ESV. However, LVEF and SP/ESV in group 2 remained unchanged.

THE EFFECT OF AORTO-CORONARY BYPASS GRAFTING ON THE WALL MOTION OF THE MYOCARDIAL INFARCTED REGION — USING THE FIRST PASS RI ANGIOGRAPHY DURING EXERCISE —


With the first pass RI angiography, the effect of aorto-coronary bypass grafting on the wall motion was studied in 5 patients with the history of anterior myocardial infarction. They underwent aorto-coronary bypass grafting to LAD (M-group). Another group of 5 patients without significant coronary artery lesions served as a control (C-group). Using the Computerized Multicrystal Gamma Camera (System 77), first pass RI Imaging was performed in the 30° RAO projection at rest and during exercise at ergometer exercise in supine position. In the M-group, preoperatively there was no significant change between global LVEF at rest and during exercise and between regional EF at rest and during exercise. However, postoperatively there was significant increase in global LVEF (p<0.05) and regional EF of infarcted segment 1, 2, 3 were increased compared with preoperative ones. In the M-group, postoperatively global LVEF and regional EF of the segment 1, 2, 3, 4 during exercise were significantly lower than those of C-group. But postoperatively there was no significant change between them during exercise.