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## THE INFLUENCE OF LEFT VENTRICULAR DIASTOLIC FUNCTION ON RIGHT VENTRICULAR FUNCTION IN THE PATIENTS WITH MILD LEFT VENTRICULAR DYSFUNCTION.

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To assess the influence of left ventricular diastolic function on right ventricular function in the patients with mild left ventricular dysfunction, we performed Tc-99m first-pass angiocardiography with multicrystal gamma camera and S2-gated equilibrium scintigraphy 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 $\geq$ 45%, RVEF $\geq$ 40% ; 17 cases), group 2 (LVEF $\geq$ 45%, RVEF $<$ 40% ; 15 cases), group 3 (LVEF $<$ 45%, RVEF $\geq$ 40% ; 11 cases), group 4 (LVEF $<$ 45%, RVEF $<$ 40% ; 4 cases), respectively. There were significant differences in PER, TPER, PFR, TPF and LVEDVI between group 1,2 and group 3,4. And significant differences were seen in TPF and LVEDVI between group 1 and group 2 while there were no differences in the left ventricular systolic phase indexes between them. These data show that reduced left ventricular diastolic function makes the left ventricle enlarge and give the influence on right ventricular function.

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

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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 angiocardiography. 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 who 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 who had not. Group 1 showed significant decrease in LVEF and SP/ESV. However, LVEF and SP/ESV in group 2 remained unchanged.

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## REGIONAL EJECTION FRACTION IN THE PATIENTS WITH MYOCARDIAL INFARCTION.

## — COMPARISON BETWEEN INFARCTED AREA AND NON-INFARCTED AREA —

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We studied 71 patients with prior myocardial infarction to assess cardiac function by RI angiocardiography, using a multicrystal gamma 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 crystals at I and N. Group A consisted of 16 patients whose end diastolic volume (EDV) was below 100ml. Group B consisted of 34 patients whose EDV was between 100 and 140ml. Group C consisted of 25 patients whose EDV was over 140ml.

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 retained more than that of I-REF. Moreover, as EDV increases, I-REF begins decreasing. This tendency was more apparent in patients with anterior myocardial infarction than those with inferior myocardial infarction.

We thus concluded that cardiac function with myocardial infarction could be assessed more accurately by measuring I and N-REF.

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

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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 aort-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<sup>®</sup>), first pass RI imaging was performed in the 30° RAO projection at rest and during 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 ex. 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, preoperatively global LVEF and regional EF of the segment 1,2,3,4 during ex. were significantly lower than those of C-group. But postoperatively there was no significant change between them during ex.