
In order to evaluate the relationship between cardiac function of myocardial infarction (MI) and prognosis, systemic hemodynamics were studied in 89 patients with MI. The ergometer exercise was given to them at the time of 36 ±17 days after the onset of MI. Left ventricular ejection fraction (LVEF), blood pressure as well as heart rate were measured at rest and during 0.5 and 1.0 W/kg exercise loads in the supine position by radionuclear multigate method. The patients with MI were classified into the following 4 groups; group I (n=20): LVEF at rest >45%, &LVEF at 1.0 W/kg >30%; group II (n=14): 25 ±3%; group III (n=33): 15 ±3%; group IV (n=22): <15%, <30%. Three years survival rates were 100% in group I, 85% in group II, 70% in group III and 91% in group IV. There were no significant differences among the 4 groups. However, if significant cardiac complications after MI (cardiac death, severe heart failure and reinfection) were concerned, incidence rates of cardiac complications were 71% in group I, 74% in group II, 22% in group III and 43% in group IV. Therefore, group IV was found to have poorer prognosis than the other 3 groups.

In summary, the observation of LVEF at rest and during exercise is important to predict the prognosis of patients after MI.


In order to assess the severity of left ventricular function, 33 patients of effort angina pectoris were divided into non-collateral AP group, jeopardized collateral (JC) AP group, non-JC AP group, and variant AP group in which spasm was induced in the organic stenotic lesion. Stress radionuclide angiography at rest and exercise with serial three data acquisitions (2 min, 6 min, 10 min after exercise) was performed and rest-exercise-recovery (R-E-R) curve of LV ejection fraction (EF) was observed. Degree of decrease in LVEF at exercise was most prominent in variant AP, followed by JC AP group, non-JC AP group, and non-collateral AP group in this order. It correlated with ischemic grade on stress TI-201 myocardial emission CT. Rate of recovery of LV function did not always correlate with grade of (Rest-Ex) LVEF. Variant AP and non-collateral AP groups which are expected to have more rest coronary artery flow reserve, showed immediate recovery of LV function, but JC AP group which has little coronary flow reserve showed distinctly delayed recovery.