
Radioangiography (RCG) was recorded 4262 cases from July '76 to March '84. We studied about 40 cases of ischemic disease and 28 cases of hypertension who had sequentially more than four times of RCG.

Cardiac index was significantly decreased in IHD and still more decreased in digitalized IHD. Cardiac index and total vascular resistance were correlated to the group of NYHA-functional classification. In the follow-up study for 3.7 years (mean), classification of cardiac function was divided four groups (improved 6 cases, worsened 14, stable 11, unstable 9).

RCG was beneficial to assess the therapeutic responses in short term follow-up (mean 3 months). Finally, we studied about the correlation between cardiac output, stroke volume and left ventricular ejection fraction by means of gamma-camera-computer analysis (HARP).


With the purpose to evaluate the clinical usefulness of the OMNISCOPE, RI-angiography was performed on 54 patients with ischemic heart disease (IHD). Eighty patients without heart disease were used as controls.

Method: Left ventricular function at rest and during hand-grip exercise test was assessed. Left ventricular function was include ejection fraction (EF), ejection rate (ER), relative cardiac output (RCO), peak ejection rate (PER) and peak filling rate (PF). Results: The HRs, SBPs, DBPs and Double products (DP) were all significantly increased during exercise both in control group and in IHD group (p<0.01). In control group, the EFs, ERs, RCOs and PERs were increased during exercise significantly (p<0.01). But in IHD group, the EFs, ERs and PERs were decreased significantly during exercise (p<0.01) without changes in the RCOs and PFs. In low EF group (EF≤50% in IHD group), the ERs, RCOs, PERs and PFs were significantly smaller than those of control group and high EF group (EF>50% in IHD group) (p<0.01).

Conclusion: OMNISCOPE is very useful for evaluating the left ventricular function both at rest and during exercise.


We assessed the left ventricular ejection fraction (EF) of old myocardial infarction (OMI) patients during multistage exercise test.

Fourteen of 39 OMI patients showed no ST changes during exercise (group A), and in remaining 25 patients, the ischemic ST depression occurred (group B). EF during exercise was measured by Nuclear Stethoscope (BIOS) using Tc-99m labelled red blood cell in equilibrium state.

In normal healthy group, EF increased as exercise load increased and reached plateau. While, in group A, though a little increase of EF was found out in early stage of exercise, soon it decreased lower than before. And in group B, EF decrease was seen in early stage of exercise. It was suggested that continuous monitoring of EF during exercise stress test will be useful method for evaluating cardiac reserve of OMI patients.


Extra anatomical bypass (EAB) is one of surgical method for repairing aortic anerysmia. EAB was applied for thoracic aortic anerysmia (7 cases) and dissecting aortic anerysmia (4 cases). (Mean age 61±8 yrs.)

Postoperative assessment was done by CT, DSA and RNA. Diagnostic accuracy of these three methods was as follows: 100%, 100% and 100% on bypass patency; 82%, 100% and 100% on clamp leakage; 10%, 10% and 82% on thrombus formation; 84%, 84% and 82% on retrograde blood from bypass graft.

EAB was significantly smaller than control group and high EF during exercise (p<0.01). But in IHD group, the EFs, ERs and PERs were decreased significantly during exercise (p<0.01) without changes in the RCOs and PFs. In low EF group (EF≤50% in IHD group), the ERs, RCOs, PERs and PFs were significantly smaller than those of control group and high EF group (EF>50% in IHD group) (p<0.01).

Conclusion: OMNISCOPE is very useful for evaluating the left ventricular function both at rest and during exercise.