COMPARATIVE EFFECTS OF PTCA AND CABG ON INFARCTED MYOCARDIUM

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Increased myocardial perfusion by PTCA and CABG on infarcted site was evaluated by exercise Tl-201 myocardial imaging (TI-IM) and left ventriculography (LVG). Twenty patients with single vessel disease were classified 4 groups. Twelve patients underwent PTCA (Group I) consisted of 8 patients with regional hypoperfusion and redistribution (Ia), and 4 patients with redistribution (Ib). Eleven patients underwent CABG (Group II) consisted of 7 patients with redistribution (IIa) and 4 patients with redistribution (IIb). By Tl-IMA, regional uptake ratio (RUR) was measured as the indicator of regional myocardial perfusion. And regional fractional shortening (RFS) was also measured by LVG. The results were compared before and after recanalization. RUR increased significantly in Group Ia (60±16% vs 71±16%, p<0.01) and Group IIa (56±11% vs 78±6.7%, p<0.01). RFS increased significantly in Group Ia (16.4±8.37, p<0.01) and Group IIa (17.4±5.2% vs 22.3±7.4%, p<0.05). There were no significant changes in Group Ib and Group IIb in RUR and RFS. It is concluded that in the PTCA group (Ia) as well as CABG group (IIa) the improvement of myocardial perfusion is pararell to that of wall motion abnormality.

INDICATION OF PERCUETANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY (PTCA) FOR OLD MYOCARDIAL INFARCTION

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We assessed the viability of old myocardial infarction (MI) before PTCA and examined the grade of viability before and after PTCA. Twenty three patients with old MI had successful PTCA were studied. PTCA were done after 51 to 850 days of acute MI. The viability before PTCA was assessed by the presence of angina pectoris, stress TI-201 scintigraphy, treadmill stress test and left ventriculography.

In 20 of the 23 patients the viability was confirmed by the chest pain or the change of ST segment during PTCA. In 20 patients who had the viability, we could assess the viability in 70% by stress TI-201 scintigraphy, in 55% by treadmill stress test, in 75% by left ventriculography and in 100% by any of these three examinations before PTCA. All in 12 patients who had angina pectoris before PTCA have had no angina pectoris after PTCA. The improvement of the grade of the ischemia were observed in 78% of the patients who had the viability assessed by stress TI-201 scintigraphy or treadmill stress test before PTCA.

Conclusion: PTCA is useful for OMI when the viability is assessed before PTCA. The viability should be assessed by the combination of several diagnostic methods.


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Twenty patients with single vessel disease of AMI underwent TI-201 exercise myocardial imaging in chronic phase. Five patients were treated by IVCR, 15 minutes intravenous infusion of 1,920,000IU of UK, within 6 hours after the onset. Eight patients were treated by PTCR. Recanalization was angiographically recognized in these patients both in acute and chronic phases. In seven patients who were not treated by UK, recanalization was recognized in chronic phase. The washout rate of the center of diseased area was obtained. The development rate on defect scores was calculated from circumferential profile curves at 10 minutes and 3 hours after exercise. It was possible to distinguish the patterns of redistribution by the combination of washout rate and development rate. In IVCR-treated group, partial redistribution (PR) and incomplete redistribution (IR) were observed in each in one patient. In PTCR-treated group, IR was observed in three patients. In non-UK group, PR and IR were observed in each in one patient. The redistribution in IVCR and PTCR-treated groups were larger than that in non-UK group, although not significant statistically.

INFLUENCE OF EARLY CORONARY RECANALIZATION ON QUANTITATIVE ENZYMATIC AND TI-201 SCINTIGRAPHIC ESTIMATION OF INFARCT SIZE: COMPARISON WITH LEFT VENTRICULAR FUNCTION. M. Tsuda, H. Hirayama, A. Andoh, H. Agetsuma and N. Sotobata. Hamamatsu Medical Center, Hamamatsu and Nagoya University School of Medicine, Nagoya.

The purpose of the present study was to investigate the influence of early coronary recanalization on clinical quantitative recanalization of old myocardial infarct size. We studied the relationship among the enzymatic infarct size (ZCK), TI-201 scintigraphic infarct size (TI-IS), and left ventricular ejection fraction (LVEF) in 59 patients with acute myocardial infarction. The subjects were divided into the two groups; 34 who had early coronary recanalization by intra-coronary thrombolysis (group I) and 25 on conventional therapy (group II). ZCK was calculated by serial measurement of serum creatine phosphokinase activities, and TI-IS by circumferential profile analysis of TI-201 myocardial imaging. LVEF closely correlated with both ZCK (r=-0.76) and TI-IS (r=-0.83) in group I, and showed a closer correlation with TI-IS (r=-0.87) than with ZCK (r=-0.58) in group II. Although ZCK significantly correlated with TI-IS in both groups, it tended to be smaller in group II than in group I for approximately equivalent TI-IS. In conclusion, it was possible to suggest that TI-IS was more useful to estimate infarct size than ZCK because the latter was strongly influenced by recanalization itself.