(50±18% $p<0.02$) or in CX group(54±12% $p<0.02$). There was no difference in infarct size and LVEF between RCA and CX groups. These data show that infarct size and LV function after MI is dependent upon the amount of myocardial mass supplied by an infarct-related vessel, which is of great importance in selecting optimal management and also in estimating prognosis for acute MI patients.

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CLINICAL SIGNIFICANCE OF INTRACORONARY THROMBOLYSIS IN THE TREATMENT OF REINFARCTION

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In order to evaluate the significance of percutaneous transluminal coronary recanalization (PTCR) as one of treatments of reinfarction(re-MI), clinical findings, main cause of death and short-term prognosis of re-MI patients undergone PTCR have been compared with those of medically treated patients.

Twenty-eight of 42 patients with re-MI were treated with PTCR within 4.5±3 hrs. after the onset. PTCR was successful in 20 of 28(71%) patients and unsuccessful in the remaining 8(29%) patients. During the acute period, Forrester's subset of homodynamics was IV in 11 of 28(39%) patients with PTCR and 8 of 14(57%) medically treated patients and 15 patients of them were treated with IABP. Of patients with PTCR, 12 had 2-vessel involvement and the rest 3-vessel involvement. After PTCR, percutaneous transluminal coronary angioplasty (PTCA) was performed in 8 patients, and coronary artery bypass graft operation(CABG) was performed in 8 patients.

During stay in hospital, cardiac death occurred in 15% of successful PTCR group(3 of 20), 63% of unsuccessful PTCR group(5 of 8), and 36% of medically treated group(5 of 14). All of the 13 patients died of pump failure, excluding one patient with myocardial rupture.

In conclusion, these studies suggest that early reperfusion by PTCR can minimize severe pump failure which frequently occurs in cases of re-MI and alternate the patients' short-term prognosis. However, most of re-MI patients had a high-grade multivessel involvement and additional revascularization procedures such as PTCA and/or CABG were needed for reducing the risk of recurrent ischemia, reocclusion and reinfarction after successful PTCR and improving the long-term prognosis.

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PRINCIPLES AND PRACTICE OF MYOCARDIAL SALVAGE AFTER ACUTE CORONARY OCCLUSION

-SUPERIORITY OF SURGICAL REPERFUSION AND LIMITED VALUE OF PTCR-

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This study tests the hypothesis that a) fate of ischemic myocardium is determined not only by its duration, but the management of reperfusion, b) immediate contractile recovery is possible by careful control of reperfusion in the surgical

setting after 6 hours of coronary occlusion, thereby resulting in enhanced myocardial salvage, c) failure of controlling reperfusion with PTCR limits the clinical usefulness despite successful early coronary recanalization, d) such control can be accomplished by percutaneous peripheral cannulation technique. Of 43 dogs undergoing 2-6 hours of LAD occlusion, 7 were subjected to ultrastructure and mitochondrial analyses following 6 hours of ischemia without reperfusion. 16 others received normal blood in beating working state following 2-4 hours of ischemia (PTCR), and 20 undergoing 2-6 hours of LAD occlusion were given 37°C blood cardioplegic reperfusion on total vented bypass, simulating CABG. Mitochondrial function and ultrastructure remained well-preserved after 6 hours of ischemia before reperfusion. Although contractile recovery failed to occur with PTCR achieved after 2 hours of ischemia, controlled reperfusion in CABG produced significant restoration of segmental function after 2, 4 and even 6 hours of ischemia (52, 41, 21%, respectively). With regard to postischemic myocardial blood flow, area of non-staining (TTC) vs area at risk and ultrastructure, superiority of surgical reperfusion in CABG was strongly implied over medical reperfusion, ie PTCR, despite added prolongation of ischemic jeopardy. In addition, the potential applicability of controlled reperfusion in the medical setting using PTCR and percutaneously-ensured extracorporeal circulation was indicated.

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RIGHT VENTRICULAR INFARCTION IN THE PATIENTS WITH ACUTE INFERIOR INFARCTION

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Hemodynamic indices were evaluated in 18 patients with acute inferior infarction. Responsible right coronary artery (RCA) disease was found and intracoronary thrombolytic therapy was done in all of these patients. Right ventricular infarction(RVI) was approved by myocardial scintigraphy using 99m-Tc pyrophosphate performed between 3 and 5 days after the onset of the disease.

RESULTS : All of the patients with responsible distal RCA disease had normal hemodynamic values and almost no RVI. All of 13 patients with responsible proximal RCA disease had RVI. In these proximal RCA disease patients, successful recanalization was obtained in all of 7 patients who had PTCR within 7 hours after the onset of the disease (Group I) and in 2 out of 6 patients who had PTCR after 7 hours (Group II). Initially measured central venous pressure was significantly lower in Group I than in Group II (8.7±3.8 vs. 13.9±3.9 mmHg, $p<0.05$). There was no significant differences between Groups in both initially measured cardiac index and pulmonary capillary wedge pressure. There was no marked left ventricular failure in all of 18 patients both before and soon after PTCR.

SUMMARY : Early success of PTCR may salvage right ventricular function in acute inferior infarction even in the presence of right ventricular infarction. Early success of PTCR may also decrease the risk and gravity of other complications such as low output syndrome, rhythm disorders and VT.

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THE EFFECTS OF INTRAVENOUS CORONARY THROMBOLYTIC THERAPY IN ACUTE MYOCARDIAL INFARCTION

-THE EVALUATION BY CAG IN ACUTE STAGE AND LVG IN CHRONIC STAGE-

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The effects of high dose intravenous (i.v.) infusion of Urokinase (UK) on AMI were assessed in 29 pts by CAG in acute stage and LVG in chronic stage. As soon as pts were diagnosed for AMI, 1.5 million units of UK was infused intravenously. Following this, CAG was performed. If infarct-related vessel was totally or subtotally occluded, additional intracoronary (i.c.) UK infusion was done. Four weeks later, LVG was obtained from 22 pts. In 15 of 29 pts, infarct-related vessel was reopened by i.v. UK dose. In 8 of 14 pts who did not respond to i.v. UK therapy, occluded vessel was reopened by additional i.c. UK dose. Of 22 pts who underwent LVG in chronic stage, 10 had viable myocardium at infarct-related area. In 7 of these 10 pts, occluded vessel was reopened by i.v. UK dose, in 2 pts by combined i.v. and i.c. UK dose in acute stage. Only one patient did not respond to both therapy. Among the 19 pts whose occluded vessels were reopened in acute stage, successful rate of salvaging the infarct-related myocardium was higher in pts with i.v. therapy (7/12, 58%) than pts with additional i.c. therapy (2/7, 28%). These results suggest that although coronary thrombolytic effect might be less effective in high dose i.v. UK therapy when compared to i.c. UK therapy, i.v. UK therapy was superior to i.c. UK therapy with regard to the effect of salvaging the infarct-related myocardium. Because high dose i.v. UK therapy could be commenced earlier, if reopening the occluded vessel could be obtained, the infarct-related myocardium should be salvaged more effectively.

-310- EFFICACY OF PTCTR ON LONG-TERM PROGNOSIS IN AMI

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Two hundred and six (206) patients with acute myocardial infarction (AMI) were investigated to evaluate the long-term efficacy of PTCTR during the clinical course in hospital and after discharge. The study group consisted of 119 AMI patients with PTCTR, 21 patients with patent or spontaneously recanalized lesion (R), 72 patients with successfully recanalized lesion by PTCTR (S), 26 patients with unsuccessful PTCTR (U) and 87 patients with conventional treatment (N). The most recent 23 cases were treated with PTCA. The follow-up period was 12 to 63 months (36±14.2).

In-hospital mortality was significantly lower in the S group (2.8%) than in the U group (23.1%) and the N group (19.5%). In long-term follow-up cardiac mortality was lower in S(11.1%) and R(14.3%) than U(19.2%) and N (20.6%), but the differences were not significant.

Cardiac death and sudden death were closely related to the critical residual stenosis. All patients with cardiac death in hospital had residual subtotal / total obstruction or left main lesion. And all patients with cardiac or sudden death after discharge were of two or three vessel disease and had high grade residual stenosis (>90%) one month after the onset of AMI.

Successful recanalization alone may not be

sufficient to maintain coronary patency when a residual stenosis remains and may need to be complemented with PTCA or CABG to prevent further cardiac and sudden death.

-311- SHORT AND LONG TERM PROGNOSIS IN PATIENTS WITH AMI TREATED WITH CON- VENTIONAL AND THROMBOLYTIC THERAPY

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In order to investigate the effect of thrombolytic therapy on prognosis in patients with AMI, we analysed the mortality at 1 month and 1 year after the onset of AMI in thrombolytic therapy group and conventional therapy group each limiting factors of prognosis.

SUBJECTS: AMI patients admitted within 24 hrs. of the onset from 1980 to 1985-----564 pts.
(a) conventional(C) group(1980-1983)---380 pts.
male 284 female 96 age 62.1±0.6 yrs.
(b) thrombolytic(T) group(1983-1985)---184 pts.
male 146 female 38 age 60.2±1.1 yrs.

RESULTS: (1) Short term mortality(1 month) in group T tended to be lower than that in group C (9.8% vs 15.3%). Long term mortality(1 year) in group T was significantly lower than that in group C (15.0% vs 27.3%;p<0.01). (2) Short term mortality in group T with mild congestive heart failure(killip II) tended to be lower than that in group C(6.7% vs 28%). (3) Long term mortality in group T with mild congestive heart failure was significantly lower than that in group C(12.5% vs 41.8%);p<0.02). Long term mortality in group T with large infarct size (ΣCPK>1500 IU/L) was lower than that in group C(0% vs 18.9%). Long term mortality in group T with poor LV function(EF<0.4) was lower than that in group C(6.3% vs 12.8%). However, in patients with TVD long term mortality in group T was not different from that in group C(20.0% vs 19.2%).

CONCLUSION: It is suggested that short term mortality in group T improves in patients with mild congestive heart failure on admission and long term mortality in group T improves in patients with large infarct size and poor LV function but not in that with TVD.

-312- EVALUATION OF ANGIOGRAPHIC FINDINGS AFTER ONE YEAR OF CORONARY THROMBOLYSIS

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We made a follow up study with coronary angiography on 22 patients who had had coronary thrombolysis with urokinase one year before. This aim was to determine the factors concerning the long term prognosis. It was found that percent stenosis of the 6 week's study did not correlate significantly with left ventricular function one year later. On the contrary, Gensini score, which is by and large the index of coronary artery disease, was shown to be significantly high in the cases