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REDUCTION OF EARLY MORTALITY AND OF CARDIAC RUPTURE IN ACUTE TRANSMURAL MYOCARDIAL INFARCTION BY INTRAVENOUS STREPTOKINASE. J. Figueras, J. Cortadellas and Y. Monasterio. Hospital General, Ciudad Sanitaria Vall d'Hebron de la Seguridad Social, Barcelona, Spain.

Patients (Pts) ≤ 70 years old with a first transmural AMI of ≤4h (164±55 min) were randomized to receive (Group I,GI n=105) or not (GII, n=102) i.v. streptokinase (SK, 840.000U in 1h).Control ST segment elevation and at 1h and 24h after admission were comparable in both groups. Coronary arteriography performed within 15 days showed a recanalization rate of 64% in GI and of 27% in GII ($p<0.001$)but an incidence of severe stenosis (≥90<100%) higher in GI (46 vs 22%, $p<0.01$).Recanalized Pts presented an earlier peak of MB creatin kinase in GI (12 vs 16h, $p<0.01$) as well as in GII (15 vs 21h, $p<0.002$). The incidence of pericarditis was lower in GI (14 vs 35%, $p<0.001$). Although hospital mortality was comparable in the 2 groups (GI,8% vs GII,11%), early mortality, <5 days, was lower in GI (2 vs 10%, $p<0.02$). Sudden electromechanical dissociation was the mechanism of death in 12% of patients from GI and in 77% of those from GII and it was associated with left ventricular free wall rupture in each of the 5 autopsied cases but in none of the 5 autopsied cases who died without electromechanical dissociation. During a follow-up of 20±11 months (1-36), mortality an incidence of angina was similar in both groups but reinfarction rate was higher in GI (16 vs 1%, $p<0.05$).

It is concluded that: 1) In contrast with the changes in ST segment, an early MB creatin kinase peak is a reliable marker of reperfusion; 2) i.v. SK lowers the incidence of pericarditis and of early mortality reducing the incidence of cardiac rupture; and 3) It is conceivable that early treatment of critical residual stenosis will reduce in hospital mortality and reinfarction in these Pts.

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EARLY RESULTS OF A RANDOMIZED, DOUBLE-BLIND DOSE-RANGING STUDY OF I.V. STREPTOKINASE FOR ACUTE MYOCARDIAL INFARCTION. A.J. Six (1), J.W. Louwerenburg (1), R. Braams (2), W.L. Mosterd (2), A.C. Bredero (3), H.J. Kerkkamp (4), E.J.P. Brommer (5) and N.M. van Hemel (1). St. Antonius Hospital Utrecht/Nieuwegein (1), De Lichtenberg Amersfoort (2), Diakonessenhuis Utrecht (3), Cader Research (4), Gaubius Instituut (5); the Netherlands.

101 patients suffering from acute myocardial infarction during less than 4 hours were immediately treated with intravenous (i.v.) streptokinase (SK), infused in 1 hour. No concomitant medications like steroids, salicylates or anti-arrhythmic drugs were routinely given.

Patients were blindly allocated to one of four dosages of SK (see below). Coronary angiography was performed within 3 hours after SK infusion in 90% of all patients . The infarct-related vessel was open in 59% of 91 patients. The results in the four dosage groups were as follows:

	n	no angio	Dosage SK	% open
	24	1	200,000 IU	38
	20	4	750,000 IU	60
	25	4	1,500,000 IU	60
	22	1	3.000.000 IU	82
total	91	10		59

Haematomas at the puncture site were common complications in all groups. No strokes occurred, nor life-threatening bleeding complications. Blood transfusion was needed in only one patient, who had an important bleeding and formation of a large haematoma at the puncture site.

It is concluded that there is a trend to better results of higher doses of i.v. SK in patients suffering from acute myocardial infarction without an evident rise of the rate of complications. The efficacy and safety of recently developed fibrinolytic drugs and streptokinase should be compared at optimal dosages.

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EVALUATION OF OPTIMUM STREPTOKINASE DOSAGE IN SYSTEMIC THROMBOLYTIC THERAPY FOR ACUTE MYOCARDIAL INFARCTION: A RANDOMIZED TRIAL. K. Balnave, A.J. Moriarty, S.D. Nelson. Craigavon Area Hospital, Craigavon, Northern Ireland.

The aim of this ongoing study is to determine whether or not there is a difference in terms of efficacy between lower dose and higher dose streptokinase (STK) regimens used in the systemic thrombolytic therapy of acute myocardial infarction. Acute infarction patients are randomized to low dose (600,000 I.U.) or high dose (1,500,000 I.U.) STK delivered over 30 minutes. To date 52 cases have been serially paired and analysed statistically by the method of sequential analysis. One response taken to be of primary importance as an indirect indicator of clot lysis in assessment of treatment is the time to onset of recession of the ST segment towards the isoelectric baseline on the ECG.

Another response is the ratio of fibrinogen/fibrin degradation products formed per unit of plasma fibrinogen. This is a direct measurement of plasmin activity. Treatment preference per low dose/high dose pairing is plotted in Figures 1 and 2 respectively for each response. No chart entry is made where there is no marked preference. In both instances, though statistical significance ($p < 0.05$) has not yet been reached, the trend is strongly in favour of low dose STK or, at a minimum, no difference between the doses. Not least, this has economic implications also.

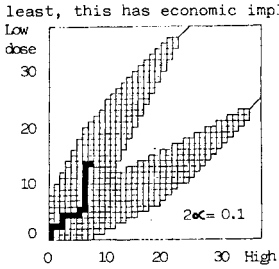

Fig 1 ST segment return

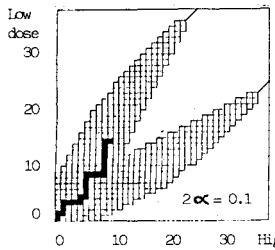

Fig 2 (FDP) 1 hr post-STK/ (Fibrinogen) pre-STK

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EFFICACY OF INTRAVENOUS STREPTOKINASE IN ACUTE MYOCARDIAL INFARCTION: ACUTE AND FOLLOW UP STUDY. R. Lochan, S. Tyagi, B.S. Yadav, D.K.M. Rao, A. Bhat, M. Khalilullah. Department of Cardiology, G. B. Pant Hospital, New Delhi, INDIA.

The efficacy of intravenous streptokinase on recanalization of the 'infarct vessel' and its effect on left ventricular function was assessed in two groups of patients. Group I consisted of 90 consecutive patients (age 32-75 years, mean 56 years) received 500,000 units of intravenous streptokinase (STK) over 30 minutes within 6 hours of onset of acute myocardial infarction (MI). Forty-eight patients had anterior MI and forty-two had inferior MI. The control group consisted of forty survivors of acute MI comparable in age and site of infarction. In Group I, ten patients were administered STK after baseline coronary angiogram demonstrated total occlusion of infarct related coronary artery. In these patients, serial coronary angiogram were done at intervals of 30 minutes after STK infusion upto a period of 3 hours. Recanalization was seen in all cases within 75-135 minutes (average 120 minutes). Seventy-nine of STK group and all of the control group underwent selective coronary arteriography and contrast left ventriculography within 48 to 72 hours of acute MI. Recanalization of infarct related artery was demonstrated in 72 out of 79 patients (91%) in STK group while 8 (20%) in control group had spontaneous recanalization. Left ventricular ejection fraction (LVEF) was higher in STK group (58%) as compared to control group (49%). Among patients with anterior MI, LVEF was significantly better in SIK compared to control group (59% Vs. 44%, $p < 0.01$)while in inferior MI the difference was not significant (63% Vs. 59.4%, $p > 0.05$) in the two groups. Follow up study in 20 STK patients at 6 months revealed a decrease in residual stenosis from 75 ± 8% to 60 ± 6% and improvement in LVEF from 59 ± 8% to 68 ± 12% ($p < 0.01$). In conclusion, intravenous STK in acute MI results in high rate of infarct vessel patency and improved global left ventricular function during both early and late follow up period.