Letter to the Editor

Sir,

EMERGENCY FIBRINOLYTIC TREATMENT OF ACUTE MYOCARDIAL INFARCTION

It is generally accepted that the sooner fibrinolytic treatment is started after coronary artery occlusion, the better are the chances of preventing myocardial infarction or of reducing the extent of myocardial necrosis. Braunwald [1] has suggested that early thrombolytic therapy started in the ambulance or in the patient's home can limit the extent of myocardial necrosis and his wiew has been supported by several Hungarian cardiologists[2-3-4-5-6-7-8-9].

After a preliminary report[10] we have now attempted to assess the significance of fibrinolytic treatment in emergency care by documenting the clinical courses of four patients.

The courses of the four patients have been monitored since the second half of 1985. All were treated on the spot by the staff of a mobile intensive care unit (MICU) of the Hungarian Emergency and Ambulance Service before transfer to hospital for further management in the intensive therapy unit and the medical ward.

The following were recorded:
- time from the onset of pain to the arrival of the MICU and the initiation of fibrinolysis
- signs indicative of restored myocardial perfusion (reduction of pain, ST elevation and arrhythmia)
- serum ensyme levels
- the subsequent clinical course.

The findings are shown in Table 1.

All four patients had arrhythmias during treatment by the MICU team and upon arrival at the hospital. In three patients the arrhythmias occured between the resolution of pain and the return of the ST segment elevation to normality.

All the patients had an early, high peak concentration of creatinine phosphokinase. There was evidence of reocclusion in all patients, on day four in two patients, on day nine in the third and after eight months in the fourth. One patient died suddenly at home after six months.

It may be asked why so few patients are given pre-hospital fibrinolytic treatment. A partial answear is that only recently that the Hungarian Emergency and Ambulance Service has issued guidelines for the use of pre-hospital fibrinolytic therapy by emergency care specialists. Previously this treatment has been used only by intensivists in the MICU with support from the medical ward of the Hospital of Hungarian Emergency and Ambulance Service. Another reason for the limited use is the need to make an unequivocal diagnosis of myocardial infarctionon the spot and to exclude all contraindications.

In our health system the doctors of the Ambulance Service have the most opportunities for using fibrinolytic treatment in the earliest stages of acute myocardial infarction.

B. Barsi, L. Lamboy, P. Tury   Hungarian Emergency and Ambulance Service

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2 Harsányi Á. Scientific Session of the Hungarian Association of Cardiologists. *Balatonfüred* May 1981. 14-16.
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5 Varga J. Personal communication. 1985.
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8 Barsi B, Lamboy L, Tury P. International Centenary Congress of Emergency (Oxyological) Care .5-8 May 1987.
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Patients	Time elapsed between the onset of pain upon arrival (min)	Time elapsed between the onset of pain and the initiation of fibrinolysis (min)	Time elapsed between the initiation of fibrinolysis and the appearance and duration of signs of restored myocardial perfusion		Course disease
			Pain and regression of ST elevation	Arrhythmia Duration (min)	
I. M.J.	19	40	++ (30 min)	+	150	Re-occlusion on day 4
II B.P.	25	40	++ (60 min)	+	180	Re-occlusion in the 8th month
III. H.Z.	20	30	++ (30 min)	+	180	Re-occlusion on day 4
IV. M.Gy.	140	155	++ (120 min)	+	240	Re-occlusion on day 9

Dr R M Donaldson replies...

We are grateful for your comments.

As expressed in our editorial the maximum benefit from thrombolysis occurs in the patient who is seen within the first three hours of symptoms, who is undergoing a first infarction , whose infarct is anterior, potentially large, and who hasleft ventricular dysfunction. The early administration of therapy is essential, as mentioned in your letter. The human element is crucial as is a system for transporting the patient. The staff involved must be prepared and it is best to have a therapeutic protocol.

With the exception of the patient in cardiogen shock, immediate angioplasty appears to confer no benefit and may, in fact, lead to early reocclusion, possibly owing to exacerbation of the preexisting coronary artery damage. The percentage of patients who are potential candidates for thrombolysis has been reported to be as high as 35%, although some studies suggest that it is as low as 10% . We cannot comment further on the arrhythmias which can occur on reperfusion, although these have been well documented in the literature.

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