COMMENTARY

Early thrombolysis therapy: some issues facing general practitioners

McCrea and Saltissi correctly state that the earlier that thrombolysis can be given, the greater the benefits.[1] The European Myocardial Infarction Project (EMIP) investigated the community use of anistreplase in coronary care ambulances when administered by hospital physicians.[2] Patients were randomly allocated to receive either anistreplase at home and placebo in hospital or vice versa. A clear trend of benefit with earlier treatment was apparent: 30 day all cause mortality increased from 8·9% among those treated within one hour to 13·9% when treatment was given after six hours. Furthermore, patients who had a time-saving of more than 60 minutes as a result of being given the thrombolytic before removal to hospital had a 50% reduction in mortality. The Grampian Region Early Anistreplase Trial (GREAT) had a similar design, except general practitioners gave the home injection.[3] GREAT found that patients given anistreplase at home rather than in hospital had a halving of three month mortality, had fewer full thickness infarctions if given active treatment within two hours of the onset of symptoms, and had improved left ventricular function.

A recent audit showed that total reliance on hospital services for the provision of thrombolysis may deny many patients early treatment.[4] Birkhead *et al* found that when infarct patients called their general practitioner for help they were seen within about 90 minutes (median interval) of the onset of their symptoms. Though patients who rang for an ambulance directly tended to do so more quickly than those who rang their general practitioner (possibly because of more severe symptoms), transportation delays meant that the median interval between onset of symptoms and arrival in hospital was 100 minutes. The interval between arrival in hospital and administration of thrombolysis was shortest when treatment was initiated in the accident and emergency department (median interval 30 minutes), but when the patient was admitted to a general medical ward the delay increased dramatically—to a median interval of 105 minutes. Thus the interval between the onset of symptoms and thrombolysis was potentially a median of 90 minutes if treatment was given at home, 130 minutes if given in an accident and emergency department, and 205 minutes if given in a general ward in hospital. McCrea and Saltissi are probably correct to suggest that effective thrombolysis may require the provision of treatment outside hospital by attending family doctors.[1]

If one accepts this premise it may be important to know whether general practitioners *who wish to provide thrombolysis* can accurately interpret an electrocardiogram. I say "may" because not everyone agrees that an electrocardiogram is needed before the use of a thrombolytic. Unfortunately McCrea and Saltissi's study does not provide useful information on this aspect of treatment because they examined the wrong group of general practitioners. A random sample of all family doctors working in Merseyside is not representative of those who wish to provide thrombolysis. Those who wish to provide thrombolysis are more likely to have an interest in cardiology and greater skills in electrocardiography. Some evidence to support this assumption is found in McCrea and Saltissi's paper: though not statistically significant, the performance of the small subgroup of doctors who routinely carried an electrocardiograph on emergency calls was better than that of general practitioners who did not.

Other observations from McCrea and Saltissi's paper are valuable. First, the finding that doctors who had at least six months post-registration hospital training did not perform any better than those without such experience, must raise questions about the quality of this training. Second, the observation that 35% of invited doctors attended a meeting on the role of the general practitioner in early thrombolysis in acute myocardial infarction shows that there is widespread interest in this topic. This is encouraging because all family doctors need to know the benefits of *early* thrombolysis, even if they choose not to provide such treatment themselves. Third, the fact that only 10 (7%) of the general practitioners approached refused to participate in the study demonstrates the willingness of most general practitioners to cooperate in the research of their hospital colleagues. Sadly, such collaboration has not always been reciprocated by some hospital specialists in the RCGP Myocardial Infarction Study,[5] which will provide other insights into the current organisation of care for the acute case.

The findings of EMIP and GREAT provide an important stimulus to initiatives that increase dialogue and collaboration between hospital specialists and general practitioners. It is pleasing to report that the British Cardiac Society and the Royal College of General Practitioners are already collaborating. It is hoped that agreed guidelines for the management of acute myocardial infarction will emerge from this dialogue and then the necessary educational programmes can be put in place. Many family doctors will not wish to provide thrombolysis. Others may decide that they do, possibly in conjunction with paramedical services. Local cardiac services might provide support by developing skills in interpreting electrocardiographs and in resuscitation and by regular audit of the outcome of patients given thrombolysis in the community. The cost of such an initiative is likely to be much smaller than that of a widespread educational programme suggested by McCrea and Saltissi. The potential benefits are great.

COLIN WAINE
PHILIP HANNAFORD
CLIFFORD KAY

Royal College of General Practitioners,
14 Princes Gate, Hyde Park,
London SW7 1PU

1 McCrea WA, Saltissi S. Electrocardiogram interpretation in general practice: relevance to prehospital thrombolysis. *Br Heart J* 1993;**70**: 219–25.
2 European Myocardial Infarction Project (EMIP). Presentation at 41st Annual Scientific Session of American College of Cardiology, Atlanta (1992).
3 Grampian Region Early Anistreplase Trial (GREAT) Group. Feasibility, safety and efficacy of domiciliary thrombolysis by general practitioners. *BMJ* 1992;**305**:588–93.
4 Birkhead JS. On behalf of the joint audit committee of the British Cardiac Society and a cardiology committee of the Royal College of Physicians of London. Time delays in provision of thrombolytic treatment in six district hospitals. *BMJ* 1992;**305**:445–8.
5 Kay CR. Management of myocardial infarction in the community: A new RCGP Study. *Br J Gen Pract* 1991;**41**:89–92.