on to more promising areas before we waste more time and valuable resources on what can only be a passing fashion.

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Barriers to delivery of thrombolysis for acute stroke

Recombinant tissue plasminogen activator (rt-PA) has recently been given a product licence in Europe for intravenous thrombolysis within 3 hours of symptom onset in selected patients with acute ischaemic stroke. In this issue of Age and Ageing Kwan et al. [1] report a systematic review of barriers to delivery of this treatment. The problems which are identified will be recognised by many physicians; non-recognition of symptoms of stroke by the patient or family, failure to seek urgent help, calling the GP rather than directly telephoning for an ambulance, triage of stroke patients as non-urgent by ambulance paramedics or emergency room staff, delays in obtaining CT scans, inefficient processes of in-hospital emergency stroke care, difficulties in obtaining consent for thrombolysis, and physicians’ uncertainty about administering thrombolysis. The review provides a conceptual framework and ‘bench-marking’ information, quantifying the magnitude of the various problems. It will be of particular interest to clinicians working in units which already use thrombolysis for stroke patients and wish to increase uptake, and to those who wish to develop a new service and who would like to know about potential obstacles. One criticism is that the most recent literature is not cited (from early 2001 onwards). More recent descriptive studies, however, including a multicentre project from the UK [2], have drawn similar conclusions.

Some clinicians and health service providers are still undecided about whether to make wholesale changes to stroke services to enable provision of thrombolysis. There are considerable logistical difficulties (many of which are highlighted by Kwan et al) in structuring services to allow urgent assessment of acute stroke patients to enable administration of thrombolysis within the required 3-hour window. In addition there are challenges in setting up on-call rotas of trained clinicians who are willing and able to provide a thrombolysis service for stroke.

Together with these practical difficulties some clinicians still harbour doubts as to whether there is worthwhile benefit from thrombolysis in ischaemic stroke. To support the new licensing arrangements, there is only one study (in 624 subjects) of thrombolysis with rt-PA given within 3 hours of stroke onset that shows net benefit (an increase in early fatal intracranial haemorrhage tempered by a longer term benefit with regards to reduced death or dependency) [3]. This study has received criticism with respect to baseline confounding and potential conflict of interest [4], however, re-analysis of the data has in general confirmed the initial conclusions [5]. The Cochrane systematic review of thrombolysis for acute ischaemic stroke concludes that this treatment does seem to reduce the risks of long-term dependency, but at the expense of increased early mortality (associated with intracranial haemorrhage) [6].

From a geriatrician’s perspective it is likely that elderly patients are at increased risk of intracranial haemorrhage following thrombolysis [7, 8]. In addition older patients are more likely to have contraindications to this treatment. The evidence-base for use of thrombolysis in the very elderly is thin, with only 42 patients in the rt-PA trials over the age of 80 [6]. The European rt-PA product licence excludes subjects beyond this age. There is sufficient uncertainty of the benefits of thrombolysis to indicate that further randomised controlled trials are required. Hopefully the 3rd International Stroke Trial will provide more definitive answers. Post-marketing surveillance will also be important. The
Thrombolysis for stroke in the over 80s

Stroke is a devastating event in the over 80s. A third of patients die within 3 months and two-thirds of the survivors are left with severe disability. Patients with less severe strokes and minimal pre-stroke disability fare better but overall the outcome is bleak. An intervention that reduces the likelihood of severe disability is needed. Meta-analysis of the thrombolytic acute stroke trials demonstrate that alteplase administered within 3 hours of symptom onset increases the absolute likelihood of a good outcome by 10%, with mortality unchanged [1]. Within the 3 hour time window the earlier treatment is initiated the greater the benefits [2]. Should thrombolytic therapy with intravenous alteplase for acute ischaemic stroke be offered to the very elderly?

The potential risks and benefits of thrombolytic therapy in the very elderly should be considered. There are reasons to think that the benefits might be reduced and risks increased. Older patients may have less effective collateral circulation and their brain may be more vulnerable to...