Thrombolysis and age

Too old to thrombolyse?

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Future trials do include very old patients will hold the answer but in the meantime observational data provide some clues

With the ageing of Western society, the absolute number of strokes occurring is likely to increase and the proportion of very old patients is sure to become greater.¹ This poses a double challenge: it will not only test the capacity of Western healthcare but also leave an increasing part of stroke management outside the comfortable confines of evidence-based medicine because younger patients tend to be included in stroke trials. Generalising the results of these trials to elderly people may cause problems for several reasons. The cardiac literature suggests that the rate of haemorrhagic complications associated with thrombolysis may increase with age.² No clear evidence, however, indicates that the rate of reperfusion is decreased in very old people. Also, when the natural course of strokes is less favourable in elderly people, this may be especially pronounced in the group without reperfusion—a strong argument for thrombolysis. Without sufficient trial data, we just do not know.

The next best thing is to treat and carefully report our experiences on very old people. This is done by Sylaja *et al*³ (*this issue, p 826*). It shows us that thrombolysis is feasible in elderly people

and has a haemorrhage rate of 4.6%. Even the upper limit of the confidence interval for this point estimate is acceptable, at 6.2%. Considering the greater severity of stroke in the very old people compared with that in the younger patients in this study, this indication of safety becomes even more robust. With thrombolysis seemingly being safe, it becomes much more reasonable to generalise the efficacy rates of trials on thrombolysis to this age group.

Evidence in medicine does seem to come in shapes and sizes, and some may still choose not to subject elderly patients to thrombolysis, because unequivocal evidence (or rather the 95% likelihood of which) is lacking. This is justifiable especially in the context of a willingness of physicians to contribute to any future trial on thrombolysis in this age group. Not justifiable, however, is the withdrawal of treatment solely on the basis of a perceived poor prognosis of stroke and treatment for stroke in very old people. For example, carotid endarterectomy is sometimes withheld on the basis of age alone, because older patients treated with endarterectomy tend to do worse. Older patients treated conservatively, however, tend to show even worse

outcomes.⁴ Withholding endarterectomy is therefore more likely to harm than benefit these patients. The same may hold for thrombolysis.

The management of very old patients with stroke will benefit most from abolishing upper age limits in the design of stroke trials. Age is clearly a poor prognostic factor, but this generally seems to be regardless of treatment. Higher event rates with increasing age seem to be independent of treatment as well. The efficiency of clinical trials may even benefit from this higher event rate. The future increase in the number of strokes in very old people will lead to an epidemic of uncertainty unless we systematically start looking for evidence in this age group in all new stroke trials.

J Neurol Neurosurg Psychiatry 2006;**77**:812.
doi: 10.1136/jnnp.2006.091520

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Published Online First 30 March 2006

Competing interests: None declared.

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