Is old age really a reason to withhold thrombolytic therapy?

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Patients eligible for thrombolysis should be treated regardless of age

Van Oostenbrugge *et al* (see pages 375–7) of this issue present data on a group of 45 patients aged 80 years or over and compare outcome after thrombolytic therapy to that in a group of patients aged less than 80 years. In their study, older patients have a significantly worse outcome as measured by the modified Rankin scale. There was a non-significant trend towards more intracranial bleeding in the older patients. The authors conclude that their results “question whether the use of rt-PA [recombinant tissue plasminogen activator] is justified in patients over 80 years of age”.

The authors are ambivalent with regard to thrombolytic therapy, and even more so when it comes to the treatment of elderly patients. As stated in their article, the Third International Stroke Trial (IST3) might answer some of the apparently open questions.¹ This trial so far has included 408 patients (as of 7th Aug 2005) and has a planned sample size of 6000 patients. Although IST3 might provide some answers, there are flaws in the design of the trial that may influence the results, one of them being the uncertainty principle. At the current inclusion rate we will not see results before 2010. On the other hand, the CASES study showed that thrombolytic therapy can be performed as a daily routine without losing safety or efficacy.² Moreover, in this study older patients did not have a higher risk of

intracranial bleeding. As shown in the CASES trial, registers can help to answer some of the questions although they lack the power of large randomised trials. The SITS-MOST register might resolve some of the uncertainty that hangs over thrombolysis.³ Questions concerning the time window or imaging modality will be tackled in randomised trials such as DIAS2 or ROSIE.

Is it justified to withhold a therapy that, based on current data, is the only effective therapy for acute ischaemic stroke? As recently stated by Kaste, it does not take more positive trials but a more positive attitude towards a therapy that is uncommonly invasive for neurologists.⁴ Older patients per se do have a higher risk of not recovering from ischaemic stroke, but this risk is not reduced by withholding thrombolytic therapy. Doctors fear the potential harm of any invasive therapy, following the saying “primum nil nocere” (first do no harm), attributed to Scribonius Largus, the personal physician of the Roman emperor Claudius in the first century AD. However, despite this fear we must remember that not treating patients implies potential harm. The risk of having a stroke rises with age, while the willingness of doctors to treat declines with the age of the patient. This leads to a self fulfilling prophecy: the elderly patient has a high risk of complications, and so we must not use thrombolytic therapy. The patient is also

less likely to recover, and so is denied rehabilitation, which leads to an unjustifiably high number of stroke patients ending up in nursing homes or dying of complications. Granted, questions regarding thrombolysis still need to be answered in future trials, but instead of being mesmerised by open questions into an inability to act (as Mogli is by Kaa, the snake in Rudyard Kipling's *The Jungle Book*) we should acknowledge the current evidence and take action.

In conclusion, we recommend that preclinical and clinical procedures are established to identify patients eligible for thrombolysis and that such patients are treated, regardless of age, especially as the rate of complications falls as more patients are treated in an individual centre. After more than 10 years of reluctance it is time to take action (“Fear is not an option”, Harry Tasker (Arnold Schwarzenegger), taken from the film *True Lies*, 1994).

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REFERENCES

- 1 The Third International Stroke Trial. <http://www.dcn.ed.ac.uk/ist3> (accessed 26th October 2005).
- 2 Hill MD, Buchan AM. Thrombolysis for acute ischemic stroke: results of the Canadian Alteplase for Stroke Effectiveness Study. *CMAJ* 2005;**172**(10):1307–12.
- 3 The SITS study group. <http://www.acutestroke.org/> (accessed 26 October 2005).
- 4 Kaste M. Thrombolysis: what more does it take? *Stroke* 2005;**36**(1):200–202.