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Thrombolysis for Acute Stroke: What about the Actual Impact on Patients Older Than 80 Years?

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We read with great interest the study by Zeevi et al. [1] evaluating acute stroke management in the elderly. The authors found that early treatment with rtPA in patients >80 years appears to be both safe and efficacious. The issue of thrombolysis in the elderly has previously been addressed by other groups and is summarized in a recent review [2], which concluded that, in spite of a poorer outcome compared to younger patients, there is a spectrum of benefit from thrombolysis in this group. Even if the results of a specific trial are not available at the moment, these data support the hypothesis that older age stroke patients should not be excluded from thrombolysis because of age alone [3]. Thus, the elderly could benefit from thrombolysis, but what would its actual impact in clinical practice be?

To elucidate this issue, we retrospectively reviewed data from patients admitted to our hospital for acute stroke in 2005. Two-hundred and fifty-eight patients [median age 71 years, range 19–97, 62/258 (24.0%) at age >80 years] were admitted, but only 102/258 (39.5%) arrived within 3 h of stroke onset and, in 72/102 (70.6%), cranial computed tomography showed no hemorrhage or neoplasm. Fifty-one of 72 (70.8%) patients were aged ≤80 and 12/51 (23.5%) had undergone thrombolysis, with no subsequent symptomatic intracranial hemorrhage. Twenty-one of 72 (29.2%) were >80 years old (median age 84 years, range 81–90) and none of them was treated according to the SITS-MOST selection criteria, which prevent thrombolysis in the elderly. However, only 7/21 (33.3%) presented no other defined exclusion criteria [minor neurological deficit or symptoms rapidly improving before start of infusion in 2/21 (9.5%); severe stroke in 7/21 (33.3%); prior stroke within the previous 3 months in 2/21 (9.5%); major surgery in the previous 3 months in 1/21 (4.8%); oral anticoagulant treatment with INR >1.7 in 1/21 (4.8%); arrival at the limit of the 3-hour time window in 1/21 (4.8%)]. These patients (median age 85.6 years, range 82–90; median NIHSS at admission 15.7, range 8–24) had a median hospital stay of 22.7 days (range 12–35) and were all dis-

abled at discharge (median mRS at discharge 3.9, range 3–5 vs. median mRS at admission 2.4, range 2–3). Both hospital stay length [4] and disability rate [5] could probably have been reduced by thrombolysis. In our analysis, 2 patients aged 80 with ischemic stroke were admitted within 3 h of symptom onset and were excluded from thrombolysis because of severe stroke. Treatment of 80-year-old patients – according to Zeevi's age dichotomization data [1] – would have further increased the number of elderly patients who could have benefited from treatment. Based on our data, we estimate that about one third of patients aged >80 years with ischemic stroke arriving at hospital within 3 h of stroke onset could be treated, that is 7/62 (11.3%) of elderly stroke patients. This percentage could be higher if we consider that late admission to a hospital providing thrombolysis represents the most relevant modifiable barrier to delivering treatment, involving up to 84% of stroke patients [6, 7]. Our data confirm that rtPA treatment should also be implemented in carefully selected elderly patients.

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