Intra-Arterial Thrombolysis for Acute Ischemic Stroke

To the Editor:

We were very interested in reading the article by Lindsberg and Mattle.1 This systematic analysis included 344 patients treated with intra-arterial (IA) thrombolysis for basilar artery occlusion reported in 10 studies published between 1988 and 2004. These case series, along with those on anterior circulation stroke,2–6 contributed to extend the knowledge and the improvement of technical procedures of IA thrombolysis, but they can hardly be used as evidence of efficacy because the natural history of an acute brain attack is variable and sometimes unpredictable.

The limit of inferences from case series is even greater if IA thrombolysis is compared with what is now considered the standard treatment of brain attack, ie, intravenous (IV) alteplase.7 The indirect comparison made by Lindsberg and Mattle1 between IA and IV thrombolysis cannot generate evidence but just hypothesis. The same principle applies for many other authors2–6 that in the field of IA thrombolysis, where randomized controlled trials (RCTs) are lacking, make comparisons between their series of cases and placebo or alteplase arm of the National Institutes of Neurological Disorders and Stroke (NINDS) trial.2 We definitely agree with Lindsberg and Mattle1 that the time to perform a RCT comparing the 2 approaches has come, and we are in line with guidelines for the early management of patients with ischemic stroke, from Stroke Council of the American Heart Association/American Stroke Association,8 stating that “therapy should not be withheld from patients who are eligible for treatment with intravenous thrombolysis so that medications can be administered intraarterially, except in the setting of a comparative research clinical trial”. Actually, we are among the proponents of an ongoing RCT called SYNTHESIS comparing IA versus IV alteplase for acute ischemic stroke.9 Thirty patients have been randomized up to now. The planned sample size is about 350 patients because the trial purpose is to attest a consistent benefit of the IA administration as compared with the IV one (at least 15% of absolute risk reduction between the 2 treatment groups). We do not think such a trial should “be quite large to find a significant difference in functional outcome variable”,1 because the amount of resources required for IA thrombolysis is justified only if the superiority of IA thrombolysis as compared with the IV one is reasonably wide.

Publication of further case series on IA thrombolysis should be discouraged, in order to favor the production of RCTs and avoid that IA thrombolysis remain a virtuosistic play for few rather than a therapy to test against the burden of stroke.

Disclosures

None.

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