Efficacy of Intra-Arterial Fibrinolysis for Acute Ischemic Stroke: Incongruent Recanalization and Good Outcome Rates

To the Editor:

Lee et al provided a useful meta-analysis of the efficacy of intra-arterial fibrinolysis as reported in randomized controlled trials. Several interesting observations were made regarding the effect of intra-arterial fibrinolysis on radiological and clinical end points. They show that despite a 46.8% partial or complete recanalization rate, the increase in the rate of good outcomes was only 14.8% and excellent outcomes only 13%. This was attributed to the fact that some end points cannot be measured on the 7-point modified Rankin Scale and/or the intervention was performed too late with no penumbral tissue remaining that reperfusion can salvage.

In the Diffusion and Perfusion Imaging Evaluation For Understanding Stroke Evolution (DEFUSE) study, recanalization of a large intracranial vessel after intravenous thrombolytic therapy in the absence of potentially viable tissue, as revealed by the absence of perfusion-diffusion MRI lesion size mismatch, was shown to result in a marked increase of mortality and poor outcomes because of the development of reperfusion hemorrhage. Similar conclusions were reached by other authors who indicated that lack of a good outcome after revascularization in acute stroke may be related to hemorrhagic reperfusion injury after arterial recanalization.

In reflecting on the conclusions drawn by the authors, we offer that there may be a third possibility to explain the discord seen between recanalization rates and good/excellent outcomes. There was a significant difference noted in the rates of radiological and symptomatic intracranial hemorrhage between patients treated with IA fibrinolysis and control subjects. We postulate that the patients who experienced higher recanalization rates may have also experienced higher rates of intracranial hemorrhage or death because of reperfusion into tissue that is on its way to necrosis and thus not had the expected good/excellent outcomes. The authors mention that despite the significant differences in the rates of intracranial hemorrhage between the groups, this did not affect overall mortality. There may, however, be a negative effect of intracranial hemorrhage on good/excellent clinical outcomes. We would be interested to know whether additional analysis could be done to clarify if there was any observed relationship between recanalization rates and rates of intracranial hemorrhage in this meta-analysis.

Disclosures

None.

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Stroke. 2010;41:e593; originally published online September 30, 2010;
doi: 10.1161/STROKEAHA.110.590208

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