IV and IA Thrombolytic Stroke Strategies Are Complementary

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This is a classical confrontation in stroke medicine between pragmatic evidence-based therapies for the masses versus cutting-edge biologically plausible interventions that would be restricted to comprehensive stroke centers. Despite the accumulating evidence that IV therapy is less effective in patients with large clot burdens, such as ICA occlusion, there is still no level 1 evidence that IA therapy is superior to IV within 3 hours.

For the foreseeable future, we agree with Lindley that the first priority should be to rapidly increase the rate of use of standard IV tPA in stroke unit settings worldwide, given within 3 or probably now 4.5 hours.1,2 The scale of this challenge cannot be understated. Further, the issue of small vessel disease cannot be ignored, where an IV approach seems logical and may represent up to 20% of all ischemic strokes.

However, in parallel, we would strongly support the view of Moonis that even more effective means of clot dissolution must be aggressively pursued. We should not forget the cardiac roadmap, where IV thrombolysis was first proven, then increasingly replaced by acute mechanical intervention in the cath laboratory after superiority was shown in clinical trials.3 Even now, some expert stroke centers routinely use IA thrombolysis in the setting of a highly-organized system in partnership with an interventional team.4 This is supported by PROACT 2,5 which demonstrated the benefits of IA thrombolysis out to 6 hours, although this approach has not been licensed in the absence of a confirmatory trial. Furthermore, some centers use a strategy of IA therapy in patients beyond standard clinical time windows, if there is evidence of salvageable penumbral tissue on MRI—a topic for another Controversy!

Basilar occlusion is another important stroke subgroup where the time window may be longer that for anterior circulation disease and an IA approach seems appropriate.6 In our centers, we would routinely consider patients for IA thrombolysis out to 24 hours with this condition.

A bridging strategy between IV and IA thrombolysis has the advantage of not delaying IV therapy, while identifying nonresponders with persisting large artery occlusion. This approach is being tested in IMS 3, with initial IV tPA followed by artery reopening by thrombolysis or clot retrieval if vessel occlusion is demonstrated.7 Hence, the IV and IA approaches debated by our protagonists are not incompatible!

Disclosures

None.

References


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