

Endovascular Thrombectomy Alone versus Combined Intravenous Thrombolysis and Thrombectomy: A Systematic Review and Meta-Analysis

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Introduction

To date, no randomized trial has directly addressed the question of whether IV tPA improves the outcomes of IV tPA-eligible patients who will eventually undergo EVT or whether a direct EVT strategy will be equally effective.

Methods

We performed a search on 6 electronic databases publications up until January 2017. All prospective and retrospective articles on comparing the efficacy and safety between mechanical thrombectomy (MT) alone and combined thrombectomy with IV tPA (MT + IVT) were included. The modified Rankin scale score between 0-2 at 90 days was used to analysed the primary efficacy whereby the primary safety outcome was all-cause mortality at 90 days. Summary relative risks and 95% confidence intervals calculated with a fixed-effects or random-effects model where appropriate.

Results

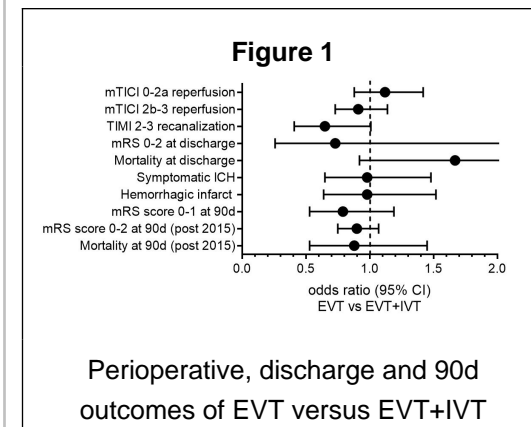
12 studies were included for analysis, comprising 1275 in the EVT only arm and 1340 in the combined EVT+IV tPA arm. Good functional outcomes (mRS=2) was not statistically significant when comparing EVT versus EVT+IV tPA (44% vs 48%, OR 0.80, 95% CI 0.64, 1.002, P=0.052). Similar findings was found in the primary safety outcome, 90-day mortality rates (20.4% vs 19.4%, OR 1.19, 95% CI 0.83, 1.71, P=0.34). Symptomatic intracranial hemorrhage was also not significantly different between EVT versus EVT+IV tPA (3.7% vs 3.8%, OR 0.98, 95% CI 0.65-1.48, P=0.91).

Conclusions

Overall, no significant difference was found between the groups in terms of favorable functional outcome, mortality rate or complications including symptomatic intracerebral hemorrhage. Our results suggest that a subset of acute ischemic stroke patients may benefit from a direct EVT alone approach.

Learning Objectives

By the conclusion, participants should be able to (1) outline the differences in discharge and 90d outcomes of EVT vs EVT+IVT approach for ischemic stroke



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