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Neurol India. 2012 Jul-Aug;60(4):406-14. doi: 10.4103/0028-3886.100704.

Stand alone mechanical thrombectomy (with penumbra system) for acute ischemic stroke based on MR imaging: Single center experience.

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Abstract

BACKGROUND: There is dismal rate of recanalization following intravenous thrombolysis of large vessel occlusive ischemic stroke. Trials on use of mechanical clot retrievers in acute ischemic stroke have used time from onset and clinical deficit at presentation as the main indications for intervention.

MATERIALS AND METHODS: Retrospective analysis of case records of acute stroke seen between May 2009 and October 2011 was done. It revealed 23 patients with acute ischemic stroke treated by mechanical thrombectomy using Penumbra system (PS). We used magnetic resonance (MR) imaging in correlation with clinical presentation to determine patients likely to benefit from recanalization and accordingly offered or at times deferred revascularization. A comparison of approach and outcomes was done with other relevant trials/reports.

RESULTS: Recanalization was achieved in all but one patient. Median modified Rankin Scale (mRS) score at 90 days was 2. Good clinical outcome (mRS \leq 2) was achieved in 56.5% compared with 25% in Penumbra pivotal trial and 36% in multi Mechanical Embolus Removal in Cerebral Ischemia (multi MERCI) trial. All cause mortality was 13.04%. Symptomatic intracerebral hemorrhage (ICH) occurred in two patients (8.6%).

CONCLUSION: Analysis of our results suggests that PS is safe and effective (91.3%) in recanalizing cerebral vessels without concomitant thrombolytics.

PMID: 22954977 DOI: [10.4103/0028-3886.100704](https://doi.org/10.4103/0028-3886.100704)

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