Endovascular Mechanical Thrombectomy for Acute Middle Cerebral Artery M2 Segment Occlusion: A Systematic Review

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Conflict of Interest Declaration

- Herewith I confirm that I do NOT have any relevant financial relationships with commercial interests.
Introduction

- The benefit of endovascular mechanical thrombectomy (EMT) for acute distal occlusions of the middle cerebral artery M2 segment is incompletely defined.

- The aim of this systematic review is to analyze the recent literature regarding EMT for acute M2 occlusions.
Methods

- We reviewed the literature to identify all studies of patients with acute M2 occlusions who underwent EMT that were published after January 1, 2015.

- Excellent and good outcomes were defined as modified Rankin Scale score of 0-1 and 0-2, respectively, at 3 months.

- Successful reperfusion was defined as modified Thrombolysis In Cerebral Infarction (mTICI) score of 2b-3.
Results

Web of Science
n = 292

PubMed
n = 159

Ovid MEDLINE
n = 135

336 studies, 250 duplicates removed

Inclusion Criteria:
1. The study must include the use of stent retrievers or aspiration thrombectomy as a treatment for emergent large vessel occlusion.
2. The study must report functional outcomes using the modified Rankin Scale.
3. The study must contain at least ten patients with acute M2 occlusions who underwent endovascular mechanical thrombectomy.
4. The study was published after January 1, 2015.
5. The language of study must be English.

299 studies excluded by abstract

37 eligible studies for full-text review

29 studies excluded after full-text review

8 studies included for final analysis
Results cont’d

• Eight studies, comprising 630 EMT-treated patients with acute M2 occlusions, were included in the analysis.

• The median National Institute of Health Stroke Scale score ranged from 10 to 16, and the median Alberta Stroke Program Computed Tomography Score ranged from 9 to 10.

• Excellent and good outcomes at 3-month follow-up were observed in 40% and 62%, respectively, of patients with acute M2 occlusion who underwent EMT, with a mortality of 11%.

• Successful reperfusion was achieved in 78% of cases.

• Post-procedural intracerebral hemorrhage (ICH) occurred in 14% of patients, including a symptomatic ICH rate of 5%.
Discussion/Summary

- EMT for acute M2 occlusion affords functional independence to most patients, with a modest rate of symptomatic ICH.

- However, compared with the natural history of distal MCA occlusions, the benefit of M2 thrombectomy using stent retriever or direct aspiration techniques remains unclear.