Outcomes and Complications of Endovascular Mechanical Thrombectomy in the Treatment of Posterior Circulation Occlusions: a Systematic Review

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Learning Objectives

By the conclusion of this session, participants should be able to:
1) discuss the risks-and-benefits of using endovascular techniques in the treatment of posterior circulation occlusions and,
2) describe the importance of future trials in posterior circulation occlusions treated with thrombectomy.

Introduction

- The utility of the newest techniques of stent retrievers and aspiration thrombectomy in the treatment for acute ischemic strokes (AIS) affecting the anterior circulation is well established, however not much data exist on the utility of such techniques in treating posterior circulation occlusions.
- The 2018 American Heart Association/American Stroke Association release of the new guidelines for the management of anterior circulation occlusions makes it ever so important to analyze the data and determine the most effective management of the rarer occlusions affecting the posterior circulation.
- The aim of this systematic review was to analyze the recent literature regarding endovascular mechanical thrombectomy (EMT) for acute vertebro-basilar artery occlusions.

Methods

- A literature review was performed to identify all studies of patients with acute posterior circulation occlusions who underwent EMT with stent retrievers, and/or aspiration that were published after January 1, 2015.
- Favorable outcomes were defined as modified Rankin Scale score 0-2 at 3-month follow-up.
- Successful reperfusion was defined as modified Thrombolysis In Cerebral Infarction (mTICI) score of 2b-3.

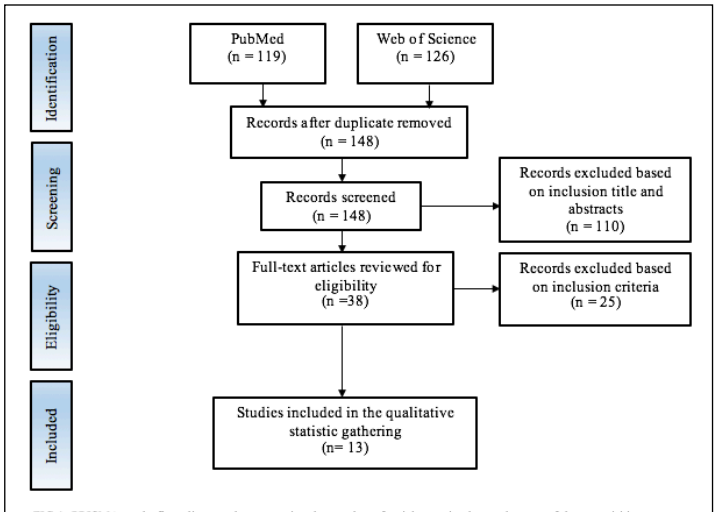


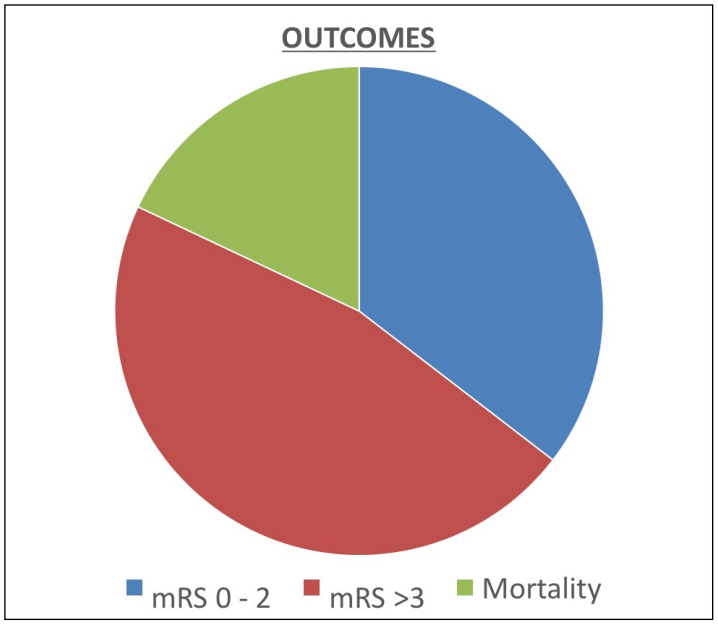
FIG 1: PRISMA study flow diagram demonstrating the number of articles retained at each stage of data acquisition

Results

- Thirteen studies, comprising 588 EMT-treated patients with acute ischemic strokes affecting the posterior circulation, were included in this analysis.
- The median National Institute of Health Stroke Scale (NIHSS) ranged from 10.5 to 34.
- Favorable outcomes at 3-month follow-up were observed in 43% of patients with posterior circulation occlusions who underwent EMT, with a mortality of 22%.
- Successful reperfusion was achieved in 90% of cases.

Conclusions

- A review of the literature indicates there is great success with recanalization of posterior circulation occlusions with the use of mechanical thrombectomy resulting in close to a 50% favorable outcome.
- However, morbidity and disability rates leave open the need for more studies to determine the absolute benefit of posterior circulation thrombectomy using stent retrievers or, direct aspiration.



Summary Points

- Endovascular thrombectomy as a sole treatment option carries moderate risk, but has seen great success in recanalization of large vessel occlusions in the posterior circulation.
- Authors suggest AHA/ASA develop guidelines and standard of care protocols for the less common but relevant posterior circulation occlusions.

Conflict of Interest Declaration
I confirm that I do NOT have any financial or commercial interests.

References

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