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Selection Criteria for Posterior Circulation Stroke and Functional Outcome Following Mechanical Thrombectomy

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Objective. 20% of all acute ischemic strokes (AIS) are caused by posterior circulation strokes, which carry an intensified mortality touching 95%. Early recanalization improves outcome as shown by several reports; however, safety, patient selection, and prognostic factors remain lacking. An investigation of the safety and prognostic factors for posterior circulation mechanical thrombectomy (MT) was performed.

Methods. A retrospective review of patients presenting with posterior circulation AIS, who underwent MT between 2010 and 2018.

Results. Of 443 patients who underwent MT for AIS, 83 patients had posterior circulation strokes. 95% of procedures were conducted under general anesthesia. The median NIHSS upon admission was 19.1. Half of the patients underwent MT 8 hours from symptom onset, and half required a salvage contact thrombus aspiration after a stent retriever trial with an average of two passes for successful recanalization. The time to achieve revascularization was 61.6 minutes. Mortality rate was 28%, and modified Rankin Scale (mRS) < 2 at three months was seen in 40.1% of surviving patients. A higher functional outcome trend (mRS<2) was seen in patients who underwent MT within 8 hours of symptom onset. The overall complication rate was 28%. Regression analysis showed that stroke subtype, baseline NIHSS, and posterior circulation Alberta Stroke Program Early CT Score (pc-ASPECTS) before thrombectomy were independent predictive factors of positive clinical outcomes.

Conclusions. MT is an effective intervention for posterior circulation strokes, and long-term functional independence relies upon proper patient selection. Baseline NIHSS and pc-ASPECTS are independent predictive factors.