

Overdue Mechanical Thrombectomy: A Treatment for all Strokes

Elias Atallah MD; Symeon Missios MD; Karim Hafazallah; Nohra Chalouhi MD; Stavropoula I. Tjoumakaris MD; Nabeel Herial MD; M. Reid Gooch MD; Hekmat Zarzour; Pascal Jabbour MD

Introduction

Decisions on the use of mechanical thrombectomy(MT) beyond 8hrs from onset of stroke symptoms remain fairly debatable. The adequate tools used for the triage of patients with acute ischemic stroke(AIS) symptoms has not been definitive yet. We studied the safety and the efficacy of delayed MT(>8hrs) with image-based selection criteria.

Methods

Data of prospectively treated patients was retrospectively collected between 2010-2017. Data on intra-venous tissue plasminogen activator(IV-rtPA), National Institute Health Stroke Scale(NIHSS) at admission, per-procedure complications(Intraarterial-tPA, distal embolus, vessel dissection, re-occlusion after MT), mortality, and clinical independence(modified Rankin Scale0-6)at latest follow-up; were gathered. The primary outcomes were:(1)safety and the feasibility of delayed(>8hours) MT,(2)functional independence on latest follow-up(mRS score<2),(3)functional improvement on latest follow-up defined as a de-escalation by one of the mRS score, and(4)overall mortality with delayed MT. Multivariate effects logistic regressions were conducted for statistical analysis.

Results

Of 234 patients(average age 64.4years,45.3%female) that constituted our population, 215 were included in our statistical analysis:137patients in the group of patients who received MT<8hrs from onset of symptoms(OS), and 78others received MT beyond 8hours from OS. 25/234(10.7%)patients had tandem embolus. 81/234(30.7%)patients performed their MT with Second Generation Stent-Retrievers(SGSR) only, 16/234(6.8%)patients received therapy with large-bore aspiration catheters, 135/234(70.5%)patients received salvage thrombus aspiration after failed first-line stent-retrievers thrombectomy. 89/234(38%) patients had a first-pass successful vessel recanalization mTICI>2. The average time of revascularization was 92.2min(SD=97.10). 27/234(11.5%)had a mTICI of 2b, and 172/234(73.5%)had a mTICI of 3. The average patient follow-up was 123days(SD=163days). MT beyond 8hrs was not a predictor of disability, of mortality, of per-procedural complications, of successful vessel repermeabilization. However, it was linked to a lengthier in-hospital stay.

Conclusions

More objective dynamics such as image-based criteria should be further promoted as primary selection tools. Delayed MT after 8hours should be a safe and highly efficacious first-line modality of treatment for strokes of anterior and posterior circulation.

Learning Objectives

-image-based criteria should be prioritized in selecting stroke patients for Mechanical thrombectomy
-Delayed (up to 24hours) mechanical thrombectomy is significantly feasible and safe for all strokes.