Thrombus aspiration vs stent retriever for anterior circulation in ischemic stroke: retrospective review of the technique efficacy

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Abstract

Background/Objective: Endovascular thrombectomy in patients with ischemic stroke caused by large vessel occlusion (LVOs) has emerged as superior to standard medical therapy. The purpose of this study was to compare the procedural efficacy of thrombus aspiration (TA) vs stent retriever (SR) technique among patients with LVOs of the anterior circulation.

Methods: Retrospective analysis of all thrombectomies (n=231) performed at North Lisbon Hospital Centre from January 2016 to February 2018 was made. Medial cerebral artery (MCA) M1 segment/terminal internal carotid (IC) occlusions that performed SR or TA technique were selected. Data concerning Thrombolysis in Cerebral Infarction (TICI) scores and procedure times (groin puncture to recanalization) were analyzed. Success of the thrombectomy was defined as TICI > 2b.

Results: From a total of 231 thrombectomies, 116 patients were treated for occlusions of MCA M1 segment/terminal IC. Among these, 64 patients underwent primary SR and 52 primary TA therapy. In the first group, median procedure time was 63 minutes (minimum 15'; maximum 183') and successful revascularization (TICI >2b) was possible in 73.4% (n=47). In the TA group the median procedure time was 44 minutes (minimum 27'; maximum 113'), and successful recanalization was 48% (n=25), but considering that 27 patients had to do the association with the stent retriever technique.

Conclusion: Among patients with ischemic stroke in the anterior circulation undergoing thrombectomy, primary TA technique compared with SR resulted in shorter procedure times, although in almost half the cases an association with stent was necessary.