

E-058

DISTAL VESSEL OCCLUSION DEFINITIONS FOR ACUTE ISCHEMIC STROKE AND THEIR DISCORDANCE

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Background Several randomized control trials (RCTs) are underway to determine the benefit of mechanical thrombectomy for distal occlusions in acute ischemic stroke (AIS). However, the nomenclature of what constitutes a medium vessel or distal occlusion varies in the literature and the trials, which may limit the ability to pool the trials together and relate them to previously published analyses.

Aims This systematic review compares the various definitions to assess their concordance or discordance.

Methods A review of the literature in the PubMed and Clinicaltrials.gov databases from Jan 2015 to Mar 2024 was performed to identify studies that proposed a definition for distal occlusions with a location and/or vessel size or clinical symptoms. The specific vessel segments, size, and symptoms were extracted, and compared across the various definitions. Discordance (%) was calculated for every pair of definitions by the number of artery locations not in common divided by all artery locations in both definitions. If definitions included a specific vessel segment but specified a size restriction, the restriction was ignored in order to compare the inclusion of the vessel with other definitions that may or may not have size restrictions.

Results A total of 870 records were screened, 13 were included describing unique definitions for distal occlusions, including 6 RCTs: Distal, DMVO, DMSVO, DiVO, DAO, DVO (per Alawieh), DVO (per Matsoukas), MeVO (RCT, ESCAPE-MeVO), DISCOUNT (RCT), DISTAL (RCT), DISTALS (RCT), DUSK (RCT), and Oriental-MeVO (RCT). Distal vessels were divided into 15 distinct segments: Proximal M2, Distal M2, M3, M4, A1, A2, A3, A4-A5, P1, P2, P3, P4-P5, PICA, AICA, and SCA. Average discordance across all 13

definitions was 38%, and across the 6 RCTs with each other was 20%. The highest discordance was encountered with the DiVO definition, on average 53% discordant with all other definitions. The lowest was found in 3 RCTs, DISTAL, DUSK, and Oriental-MeVO with 29% average discordance with all other measurements. DMVO and DMSVO were the most inclusive with all 15 segments included, although DMVO had size restrictions (<2 mm for M2, A1, P1) whereas DMSVO only excluded dominant M2s without any other size restriction. The most restrictive definition was DiVO with only 5 segments included (distal M2, M3, A2, P1, P2 only). Reflecting this, DiVO and MeVO definitions had the highest discordance (70%). Only 3 of the 15 vessel segments were included in all 13 definitions (M3, A2, P2).

Conclusions There is considerable discordance between the definitions of what is considered distal occlusion in the literature. Results from pooled data and meta-analyses should be carefully viewed on the overlap of vessels included.

Disclosures M. Mirza: 5; C; Cerenovus. P. Brouwer: 5; C; Cerenovus.

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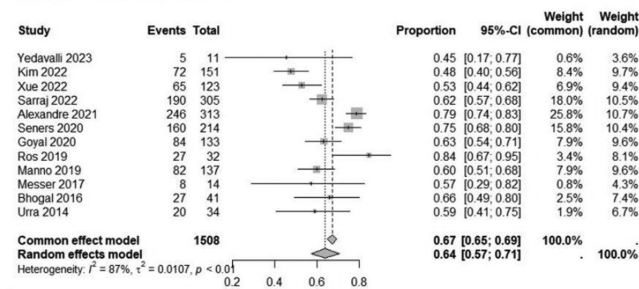
MECHANICAL THROMBECTOMY FOR LOW NIHSS IN ANTERIOR CIRCULATION LARGE VESSEL OCCLUSION: A POOLED ANALYSIS

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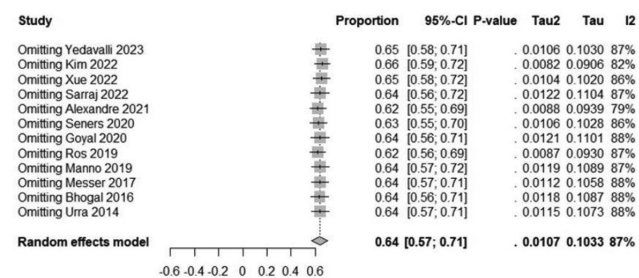
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Introduction Mechanical thrombectomy (MT) emerged as a treatment modality in LVO of the anterior circulation, however, its use for patients with low National Institutes of Health Stroke Scale (NIHSS) is still obscure.

2A Excellent functional outcome

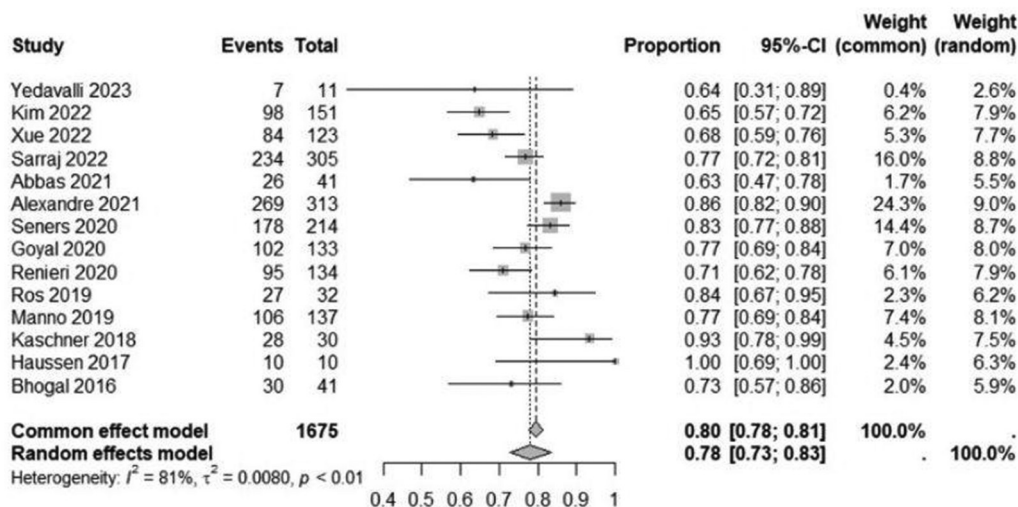


2B Leave-one-out



Abstract E-059 Figure 1

3A Favorable functional outcome



Abstract E-059 Figure 2

Methods To clear it more, we made a systematic review across Pubmed, Embase, and CochraneLibrary, selecting all studies with four or more patients that reported data of patients with low NIHSS treated through MT. Excellent and favorable functional outcomes, defined as modified Rankin scale(mRs) of 0–1 and 0–2, and symptomatic intracranial hemorrhage (sICH) and mortality were evaluated.

Results A total of 17 observational studies, involving 2360 patients undergoing MT were included in the analysis. Excellent functional outcomes obtained a proportion rate of 64% while favorable functional outcomes achieved a rate of 78%. Safety was evaluated and sICH and mortality showed a rate of 5% in both. In all outcomes evaluated, there was a high heterogeneity between studies, except in mortality.

Conclusion This pooled analysis suggests that MT is a feasible option for the treatment of patients presenting with an acute anterior circulation LVO stroke, with good rates of efficacy and safety.

Disclosures S. Batista: None. A. Pinheiro: None. G. Simoni: None. E. Bertoli: None. T. Paranhos: None. A. Jumah: None.

E-060 TEMPORARY CAROTID OCCLUSION USING A HYBRID MICROSURGICAL-ENDOVASCULAR APPROACH FOR REPAIR OF OPHTHALMIC ARTERY ANEURYSM

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Introduction/Purpose Aneurysms of the ophthalmic artery (OA) are the most common subtype of paraclinoid aneurysm and present a unique challenge for treatment due to the surrounding anatomical complexity and potential consequence of vision loss. Treatment of OA aneurysms has traditionally been divided into two categories: microsurgical and endovascular. The microsurgical approach has a lower recurrence rate at the expense of extensive dissection and manipulation

of the optic nerve and cervical carotid artery in some circumstances. Current endovascular methods have challenges of recurrence, despite their minimally-invasive nature. By integrating the accuracy of open microsurgical techniques with the minimally invasive nature of endovascular interventions, surgeons can tailor treatment strategies to the specific characteristics of each pathology. Current applications of this hybrid technique involves cerebral vascular lesions including arteriovenous malformations (AVMs), and complex intracranial aneurysms. This integrated approach optimizes outcomes by maximizing resolution while minimizing procedural risks. In this case study, we demonstrate the successful execution of a hybrid microsurgical-endovascular method of OA aneurysm treatment.

Materials and Methods A 57-year-old female presented to the emergency department with altered mental status for two weeks and recent worsening, including auditory and visual hallucinations. ED workup included non-contrast CT, which disclosed a mass along the anterior midline of the sella. Contrast MRI and CTA demonstrated a large (17 mm) right atherosclerotic ophthalmic segment aneurysm with compression of the optic nerve. The patient’s visual acuity was 2/200 in the right eye. A hybrid procedure combining endovascular method for proximal control and suction decompression and microsurgical clipping was performed. Endovascular femoral access was initially established and a right cranio-orbital approach with anterior clinoidectomy was performed. The aneurysm neck and supraclinoid ICA were exposed, and 3000 units of IV heparin were administered at this point. A balloon guide catheter was navigated into the right ICA. The balloon guide was inflated and flow arrest was confirmed via angiography. At this time, a temporary clip was placed on the supraclinoid ICA distal to the aneurysm. Next, suction decompression through the balloon guide was performed leading to softening of the aneurysm, and direct clip reconstruction was performed. The distal temporary clip was removed and the balloon in the cervical ICA was deflated and the balloon guide was removed. Indocyanine green angiography and Doppler ultrasound confirmed obliteration of the aneurysm and patency of the OA.