

# Endovascular treatment versus best medical treatment in ischemic stroke due to distal to middle vessel occlusions: a meta-analysis

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## Background and aim

While mechanical thrombectomy (MT) is indicated in the treatment of large vessel occlusions, the consensus is still lacking regarding its superiority over the best medical treatment (BMT) in distal to middle vessel occlusions (DMVO). Aim of this pooled analysis was the investigation of the efficacy and safety of MT in DMVO compared to the BMT, including endovenous thrombolysis.

## Material and Methods

The study followed PRISMA guidelines. PubMed, EMBASE and Cochrane Central were searched for retrospective, prospective studies and RCTs comparing MT with BMT in adults with acute DMVO. Primary endpoint was good outcome at 180 days (modified Rankin Scale – mRS < 3); secondary endpoints were represented by excellent outcome at 3 months (mRS < 2), symptomatic intracerebral hemorrhage (sICH) and mortality at 180 days. Odds ratio for endpoints were pooled with meta-analysis and compared between treatment strategies.

## Results

We included in the analysis 43 studies, comprising a total of 13049 patients. The rate of good outcome (Fig. 1A) at 180 days was equipotent between groups (OR=1.00; 95%CI: 0.84 – 1.19; p-heterogeneity<0.0001). The two treatment strategies had no differences in excellent outcome at 3 months (Fig. 1B)(OR 1.09; 95%CI: 0.95 – 1.26; p-heterogeneity<0.0001), as well as mortality (Fig 1D) (OR 1.09; 95%CI: 0.95 – 1.26; p-heterogeneity<0.0001), while sICH (Fig 1C) rates were significantly higher in the MT group (OR=1.57; 95%CI: 1.20-2.05; p-heterogeneity=0.06).

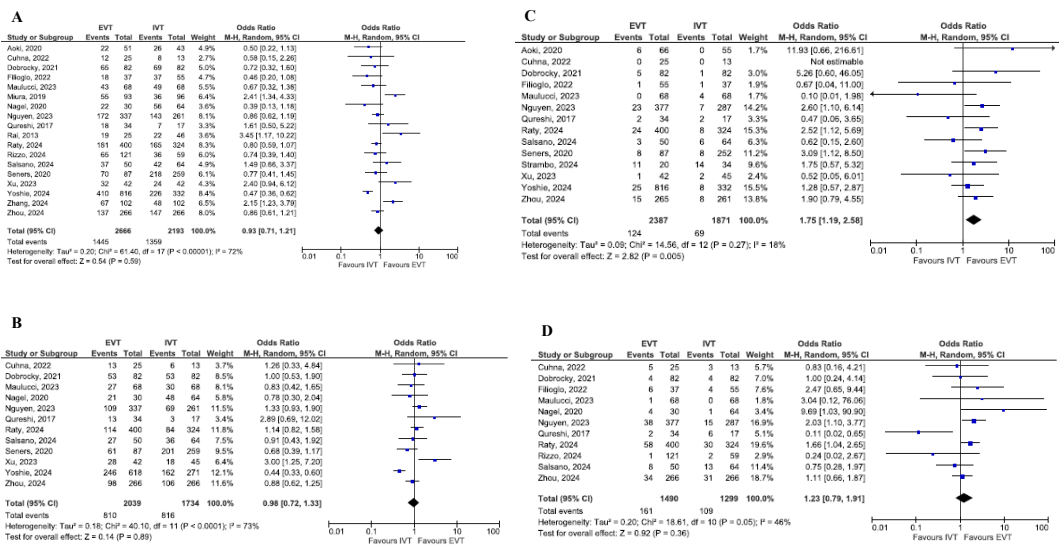


Figure 1: Forest plot of the pooled analysis EVT vs IVT for primary endpoint (A), excellent functional outcome (B), sICH (C) and mortality (D)

## Conclusions

This meta-analysis reveals an equipotent effect on functional outcome between endovascular treatment and BMT in DMVO. A statistically significant difference was observed in sICH against MT. According to these results, the selection of patients by site of occlusion, collateral status and clinical presentation seems to be the key factor to reach higher rates of positive functional outcome. For this reason, further studies investigating the comparison of MT with BMT in DMVO with more stringent selection criteria are required