INTRA-ARTERIAL THERAPIES VERSUS STANDARD MEDICAL TREATMENT IN ACUTE BASILAR ARTERY OCCLUSION: SYSTEMATIC REVIEW AND POOLED ANALYSIS OF DATA FROM THE LAST 2 DECADES


Background Management of acute basilar artery occlusion (BAO) remains a challenge, carrying high morbidity and mortality rates. Most evidence about BAO management comes from observational studies evaluating either intra-arterial therapies (IAT) or standard medical treatment (SMT). The optimal modality has not been determined.

Methods We performed a systematic review of all acute BAO studies published between January 2000 and October 2020. A pooled-analysis was performed to compare IAT and SMT.

Results Data from 4616 patients were pooled (IAT=3834, SMT=782). IAT had higher rates of good-outcome (31.7% vs. 20.6%; P<0.001), moderate-outcome (44.4% vs 18.6%; P<0.001), and lower mortality (33.2% vs. 45.3%; P<0.001). Unadjusted odds ratios (ORs) for good-outcome (OR 1.91, 95%confidence interval [CI] 1.56-2.33), and moderate-outcome (OR 2.68, 95%CI 2.17-3.32) significantly favored IAT, whereas mortality (OR 0.55, 95% CI 0.47-0.64) significantly favored SMT. After adjustments for age and National Institutes of Health Stroke Scale (NIHSS) score, ORs for good-outcome (adjusted OR [adjOR] 1.14, 95%CI 0.15-8.48), moderate-outcome (adjOR 1.75, 95%CI 0.22-14.08) and mortality (adjOR 1.39, 95%CI 0.38-5.11) did not significantly favor any modality. In a secondary analysis including only studies within the stent-retriever thrombectomy era (2009-2020), adjusted ORs for good-outcome (adjOR 2.51, 95%CI 1.01-6.19) significantly favored IAT, whereas moderate-outcome (adjOR 1.67, 95%CI 0.84-3.34) and mortality (adjOR 0.55, 95%CI 0.19-1.61) did not significantly favor any modality.

Conclusions Pooled-analysis showed superior outcomes for IAT. In the stent-retriever thrombectomy era, the odds of good outcome remain significant even after adjustments for age and NIHSS score, but randomized trials are needed to establish best management.

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