Vertebrobasilar artery occlusion

Occlusion or impairment of the vertebrobasilar blood supply affects the medulla, cerebellum, pons, midbrain, thalamus and occipital cortex. This results in a number of clinical syndromes and is caused primarily by atherosclerosis.

Cerebrovascular accidents (CVAs) are one of the most serious etiologies for altered mental status. Ischemic stroke accounts for 87% of CVAs.

Of these, approximately 20% are the result of vertebrobasilar artery occlusion (VBAO).

Renal impairment (RI) is associated with worse outcomes in the treatment of intravenous thrombolysis and emergent endovascular treatment (EVT) in anterior circulation stroke. The objective of a study was to investigate the association of RI with short-term and long-term outcomes in patients with vertebrobasilar artery occlusions (VBAO) who received EVT.

Methods: Consecutive patients with VBAO receiving EVT involving 21 stroke centers were retrospectively included. Multivariate regression analyses were used to evaluate the association of RI with mortality and symptomatic intracranial hemorrhage (sICH) during the hospital stay, and also mortality, favorable functional outcome (modified Rankin Scale (mRS) score of 0-3), and functional improvement (shift in mRS score) at 3 months and 1 year follow-up. The association between RI and the risk of recurrent stroke was evaluated with multivariate competing-risk regression analyses.

Results: After adjustment for potential confounders, RI was independently associated with sICH (OR 3.30, 95% CI 1.55 to 7.18), as well as mortality (OR 2.54, 95% CI 1.47 to 4.38; OR 3.07, 95% CI 1.72 to 8.08), favorable functional outcome (OR 0.33, 95% CI 0.17 to 0.66; OR 0.25, 95% CI 0.12 to 0.51), and functional improvement (OR 0.45, 95% CI 0.28 to 0.74; OR 0.35, 95% CI 0.21 to 0.60) at 3 months and 1 year follow-up, respectively, but RI was not associated with in-hospital mortality. Additionally, there was no significant association between RI and recurrent stroke within 1 year.

This findings suggest that RI is associated with a higher risk of sICH in hospital and a decrease in survival, favorable functional outcome, and functional improvement at 90 days and 1 year follow-up [1)].

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Xiao L, Gu M, Lu Y, Xu P, Wang J, Lan W, Huang Y, Xu G, Zhu S, Wang Q, Hu W, Zhu W, Sun W, Liu X. Influence of renal impairment on clinical outcomes after endovascular recanalization in vertebrobasilar artery occlusions. J Neurointerv Surg. 2021 Dec 1:neurintsurg-2021-018003. doi: 10.1136/neurintsurg-2021-018003. Epub ahead of print. PMID: 34853176.