Leukoaraiosis

Leukoaraiosis refers to the diffuse abnormalities of white matter on neuroimaging.

Accumulating evidence suggest that cerebral microvascular disease increases with advancing age and is associated with lacunar stroke, leukoaraiosis, vascular dementia and Alzheimer disease. Increased blood brain barrier (BBB) permeability/leakage takes “center stage” in ongoing age-related vascular/brain parenchymal injury.

Diagnosis

Patients with diffusion hyperintense lesions (DHLs) were more likely to be older in age, have atrial fibrillation, and coronary artery disease, and have more severe deep white matter hyperintensity or leukoaraiosis compared to patients without DHLs.

DHLs detected on peri-ictal DWI may represent incidental acute cerebral microinfarcts in the aging brain, especially in patients with small vessel disease [1)].

It has been suggested to be with poor outcome in patients with ICH. This meta-analysis was performed to summarize the current evidence on the prognostic significance of leukoaraiosis in ICH patients.

Databases were searched for published studies about leukoaraiosis and prognosis in patients with ICH. Data from eligible studies were extracted. Odds ratios (ORs) and their 95% confidence intervals (CIs) from each study were combined with DerSimonian-Laird method and random effect model for quantitative analysis. Begg's funnel plot was adopted to assess the publication bias.

A total of nine studies with 4948 patients were finally included in this meta-analysis. Six studies reported functional outcome, two studies reported mortality, and another study reported both functional outcome and mortality. The meta-analysis showed that leukoaraiosis was significantly associated with worse functional outcome in patients with ICH (OR = 1.40, 95%CI 1.17-1.68, P < .001). In addition, leukoaraiosis was also significantly associated with higher mortality in patients with ICH (OR = 1.59, 95%CI 1.21-2.08, P = .001).

Leukoaraiosis is significantly associated with both worse functional outcome and higher mortality in patients with ICH. Leukoaraiosis can be a useful imaging marker for predicting outcome in patients with ICH [2)].

Electrocardiographic evidence of left atrial abnormality was associated with leukoaraiosis [3)].

The presence and the number of COW variants are associated with a higher leukoaraiosis volume in

patients with significant internal carotid artery stenosis [4].

1)
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