

ASSOCIATION OF CEREBROVASCULAR DISEASE WITH PERIPHERAL ARTERY DISEASE IN OLDER ADULTS

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Background: Vascular disease is prevalent in older adults. Cognitive impairment and dementia may result from cerebrovascular disease. Transcranial Doppler (TCD) is a noninvasive technique for evaluating cerebral hemodynamics. Also, the ankle-brachial pressure index (ABI) and pulse wave velocity (PWV), markers of peripheral arterial disease, are known to be associated with cognitive impairment. We evaluated the association of TCD parameters, markers of cerebral microvasculopathy, with peripheral artery disease, as indicated by ABI and brachial-ankle PWV (baPWV). Methods: A total of 184 participants were included: 49 controls, 72 patients with mild cognitive impairment (MCI), and 63 patients with Alzheimer's disease (AD). Demographic characteristics, mini-mental state examination (MMSE), and clinical dementia rating_sum of boxes (CDR_SOB) were assessed. Using TCD, cerebrovascular reactivity (CVR) was evaluated, in addition to the mean blood flow velocity (MFV), pulsatility index (PI), and resistance index (RI) of the middle cerebral artery. We also assessed baPWV and ABI. Results: The mean age of participants was different among 3 groups: controls; 66.45±6.53, MCI; 69.25±8.32, and AD; 74.56±6.07 (p0.001). Additionally, markers of cerebral and peripheral artery disease are all different among 3 groups (all, p0.05). After adjusting for age, ABI was associated with MFV (right; r=-0.225, p=0.005 and left; r=-0.169, p=0.035) and MMSE score (right; r=0.203, p=0.007 and left; r=0.159, p=0.048). Conclusion: There was an association of a marker of peripheral artery disease (ABI) with the impaired function of cerebral microvessels (MFV) and cognitive impairment. Management of peripheral vascular disease may help prevent the progression of cerebrovascular disease or cognitive decline.