



LECTURE

Intracranial atherosclerosis: what's new?

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Abstract

Intracranial atherosclerosis is a major cause of stroke worldwide, especially in Black, Asian and Hispanic populations. It affects more often the middle cerebral and basilar arteries and may coexist with cervical atherosclerosis. Modifiable risk factors are common to other locations of atherosclerosis, namely hypertension, diabetes mellitus, hyperlipidaemia, smoking, metabolic syndrome, and physical inactivity. The possible mechanisms for stroke related to intracranial atherosclerosis are artery-artery embolism or in situ occlusion due to thrombosis over a pre-existing atherosclerotic plaque; distal hypoperfusion; and/or occlusion of the origin of small perforating arteries. It is necessary to establish a correlation between clinical syndromes and infarct patterns in neuroimaging in order to understand the underlying mechanism, since they have different recurrence rates and responses to treatment. Although the gold standard for diagnosis is cerebral angiography, non-invasive or minimally invasive methods such as transcranial Doppler, computed

tomography angiography or magnetic resonance angiography, are usually enough in clinical practice. High-resolution magnetic resonance imaging may be useful in the identification of high-risk atherosclerotic plaques. The risk of stroke recurrence in patients with intracranial atherosclerosis is very high, especially in the first month and for stenosis between 70–99%. Although endovascular treatment has been widely used, clinical trials have shown that medical treatment alone, consisting of antiplatelet drugs and aggressive modification of vascular risk factors, is more efficient in reducing the risk of stroke recurrence and mortality. Physical exercise should be particularly encouraged. In recently symptomatic stenoses, the combination of aspirin with clopidogrel should be used for 3 months followed by antiplatelet monotherapy. Despite aggressive medical treatment, some patients still have a high risk of stroke recurrence, and, currently, there are still many uncertainties concerning the management of these patients.

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