

Stroke in Young Adults: Unusual Causes at a Glance



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Introduction

Stroke, is one of the most prevalent pathologies and causes of morbidity worldwide [1]. Approximately 80% of all cases involve insufficient blood flow (Ischemic Stroke) and the other 20% are equally divided between hemorrhages in the cerebral tissue (parenchyma) or in the subarachnoid space [2].

Due to the change in the way of life of global society in the last century, health systems have been faced with the transition from its approach to diseases related to the environment and mainly acute and with high levels of mortality, to chronic diseases due to the increase in life expectancy of the population. This increase is related to a style change focused on a sedentary lifestyle in which factors such as diet, physical activity and drug use have increased as well as short-term and long-term deleterious effects on the human body [3]. All this factors could be correlated to the pathogenesis of stroke syndromes and prevented.

Although the intense prevention actions, a phenomenon that has been increasing in recent years, despite the fall in the rate of stroke in the general population, is the occurrence of stroke in individuals of young age (up to 50 years). This requires a new look at the main risk factors in this population and to compare it with the elderly, so that in the future, strategies for preventing or combating stroke in both age groups can be effective or improved in both categories [4].

The risk factors for stroke are factors or pathologies that can directly or indirectly compromise brain hemo dynamics and contribute to the onset of an episode of ischemic or hemorrhagic stroke. These factors are divided in non-modifiable causes such as race, age and gender, lifestyle characteristics such as alcoholism, smoking, medications of various categories and sedentary

lifestyle, and diseases that may perturb the state of coagulation or blood flow, causing vessel damage among other factors [5].

This mini review highlights some etiologies considered non-atherosclerotic and non-prothrombotic that every healthcare professional should be aware of in a young patient with stroke without cardiovascular risk factors.

Carotid Dissection

Carotid Artery Dissection (CAD) is a condition involving separation of the artery's intimal sheath from its medial division, with subsequent extension of the dissection along varying distances. CAD is a significant cause of ischemic stroke in all age groups, but it accounts for a much larger percentage of stroke in young patients [6]. Physicians should consider the possibility of CAD when young patients without cardiovascular risk factors present neurological deficits after minor cervical trauma, nonspecific head or neck pain [7].

Vasculitis

Although uncommon, some vasculitis could stroke as one of its manifestations specially in a population without cardiovascular risk factors or a past history of systemic symptoms [8]. Giant cell arteritis could cause stroke by the inflammatory mechanism associated with concomitant aortitis or encephalic vasospasm. Fourty percent of asymptomatic patients presented aortitis on PET-Scan [9].

Polyarteritis Nodosa aside from the classic findings, could develop stroke specially in children associated with previous hypertension or concomitant with genetic syndromes like Adenosine Deaminase 2 Deficiency [10].

Eosinophilic Granulomatosis with Polyangiitis (Churg-Strauss syndrome) has four distinct neurological presentations: ischemic lesions, intracerebral hemorrhages, cranial nerve palsies and loss of visual acuity. Long term neurological sequel were common [11].

Susac's syndrome

Susac's syndrome is a rare disorder characterized by three main problems: impaired brain function (encephalopathy), partial or complete blockage (occlusion) of the arteries that supply blood to the retina (branch retinal artery occlusion) and inner ear disease (hearing loss) by an autoimmune endo the liopathy. The diagnosis should be considered when a young patient presented recurrent cases of stroke, neurocognitive and hearing disorders [12].

CADASIL

Cerebral Autosomal Dominant Arteriopathy with Sub cortical Infarcts and Leukoencephalopathy (CADASIL) is the most frequent form of hereditary stroke. Although the main symptoms are migraines with aura and transient neurological deficits. CADASIL should be considered in patients with typical neuroimaging findings in the stroke investigation such as: MRI hypointensities on T1 weighted images and Hyperintensities on T2 weighted images, confluent with matter lesions of various sizes and without any other explanation [13,14].

Fabry's Disease

Fabry disease is a lysosomal storage disease caused by mutations in the GLA gene located on the X chromosome (Xq22.1). This mutation cause the deficiency of the enzyme alpha galactosidase A and the accumulation of glycosphingolipids in different cell types. Fabry disease corresponds to 0-4% of young patients with cryptogenic ischemic stroke [15]. Diagnosis requires genetic assays but there are suggestions of more cost-effective methods on patients with cryptogenic stroke [16,17].

Conclusion

Stroke in young adults is reported as being uncommon, comprising 10%-15% of all stroke patients. However, compared with stroke in older adults, stroke in the young has a disproportionately large morbidity profile and with an incidence on the rise. Atherosclerotic and Thrombotic states involves about 80-90% of the causes of ischemic stroke in young adults, but the remaining remain most of the time with an unknown cause (17). Most of this cases could be part of a genetic, autoimmune or another systemic disease that should be investigated in young patients without cardiovascular risk factors.

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