

## Migraine and Stroke

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Migraine can occur preceded or with associated neurological symptoms or without aura. Migraine with aura is a risk factor for ischaemic lesions of the brain, especially in women of childbearing age using contraceptives containing oestrogen [1].

The prevalence of migraine in the general population is estimated to be 6% in males and 15 to 18% in females. Overall Individuals with migraine have a higher incidence of vascular risk factors, including arterial hypertension, diabetes and hyperlipidemia [2]. However, migraine does not appear to predispose to atherosclerosis but is associated with a higher risk of venous thrombo-embolism [3]. A predominance of infarcts is mainly observed in the supra- and the infra-territorial supply of the vertebro-basilar arteries [4].

In our study patent foramen ovale (PFO), with and without atrial septum aneurysm, is observed 74.3% of our stroke patients with as well migraine with and without aura. Atrial septum aneurysm is observed in half of the cases. Their causal relation to migraine and associated cerebrovascular lesions remains uncertain. Factors that may contribute to stroke in migraine include changes during cortical spreading depression with hyper- or hypo-perfusion of neural tissue, vasospasm and endothelium dysfunction. Also lack of filtration of micro-emboli at the level of the PFO can explain its association of migraine and stroke [5]. The latter hypothesis is supported by the observation that PFO with an atrial septum aneurysm has an increased risk of cerebral ischaemic events [6]. Also, a recent interventional study shows that trans-catheter PFO closure is associated with a significant improvement in migraine burden [7].

There are also several hereditary conditions, such as cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL), mitochondrial myopathy, encephalopathy, lactic acidosis and stroke-like episodes (MELAS), and hereditary haemorrhagic telangiectasia who predispose to both migraine and stroke [8].

### Bibliography

1. Etminan M., *et al.* "Risk of ischemic stroke in people with migraine: a systematic review and meta-analysis of observational studies". *British Medical Journal* 330.7482 (2005): 63.
2. Bigal ME., *et al.* "The epidemiology, burden, and co-morbidities of migraine". *Neurological Clinics* 27.2 (2009): 321-334.
3. Schwaiger J., *et al.* "Burden of atherosclerosis and risk of venous thromboembolism in patients with migraine". *Neurology* 71.12 (2008): 937-943.
4. Caplan LR. "Migraine and vertebrobasilar ischemia". *Neurology* 41.1 (1991): 55-61.
5. De Reuck J. "Stroke in patients with migraine". *Neurologia I Neurochirurgica Polska* 44.2 (2010): 118-122.
6. Mas JL., *et al.* "Recurrent cerebrovascular events associated with patent foramen ovale, atrium septal aneurysm, or both". *New England Journal of Medicine* 345.24 (2001): 1740-1746.

7. Ben-Assa E., *et al.* "Effect of residual interatrial shunt on migraine burden after transcatheter closure of patent foramen ovale". *JACC Cardiovascular Interventions* 13.3 (2020): 293-302.
8. Tietjer GE. "The risk of stroke in patients with migraine and implications for migraine treatment". *CNS Drugs* 19.8 (2005): 683-692.

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