

Is oral contraceptive-induced headache dependent on patent foramen ovale? Clinical dynamics, evidence-based hypothesis and possible patient-oriented management.

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ABSTRACT

Secondary headache is one of the most common side effect during oral contraceptive (OC) treatment and it leads many patients to stop the therapy. Patent foramen ovale (PFO) is an interatrial communication that spontaneously closes at birth in about 75% of the population. However, in the rest of adults PFO maintains a direct communication between the right and left side of circulation. In these patients PFO is a tunnel-like structure that could allow a blood clot to pass from the right to the left side of circulation, thus can cause paradoxical embolization. Although an increased frequency of PFO in patients with migraine was already reported, the relationship between PFO and migraine remains uncertain. In patients with migraine, the prevalence of moderate or large PFO is 35% and seems not associated with the presence of aura or the frequency of headache. Basing on these assumptions, we hypothesize that asymptomatic PFO could play a role in secondary headache due to OC. The procoagulant effect of OC improves the production of microemboli that through the POF could pass from the right to the left atrium and than to the brain, where they could be responsible of secondary headache. If our hypothesis would be confirmed in future studies, it would be possible to identify high-risk patients for developing OC-induced headache and other cerebrovascular major diseases through transcranial Doppler and transesophageal echocardiography. This scenario may radically change the management of reproductive-age woman who have to undergo OC therapy for contraception or other medical conditions.