
To the Editor:

With great interest we read the article by Garg et al.1 In this large case-control study, no association between migraine headaches and the presence or size of a patent foramen ovale (PFO) could be demonstrated.

This is a conspicuous finding, because many observational studies found an association between migraine with aura (MA) and the presence of a PFO.2 The difference between the earlier studies and the findings reported by Garg et al might be explained in different ways.

First, in the observational studies most patients suffered a symptomatic PFO, which indicates a history of a cryptogenic cerebral ischemic event.2 This was not the case in the study of Garg et al. Second, one of the strongest predictors for the occurrence of a cryptogenic cerebral event is the combination of a PFO with an atrial septal aneurysm (ASA).3 Garg et al did not identify these “high-risk” PFOs, which might have influenced their observational results. Third, the presence of a PFO and/or ASA can only be clearly demonstrated by transoesophageal echocardiography, and not by transthoracic echocardiography or transcranial Doppler, as were used in the current study. Contrast transthoracic echocardiography might underestimate the prevalence of a PFO, whereas transcranial Doppler might overestimate right-to-left shunting.4 These methodological shortcomings call for careful interpretation of the results. Fourth, as stated earlier, the strongest correlation between PFO/ASA and migraine is MA.2 Matching with MA patients would increase the power of the analysis. Fifth, concerning the power of the trial, the authors predict PFO in controls and cases in 15% and 30%, although these prevalences are not considered the “current ones.” Indeed, most studies report a prevalence of 25% in the general population, which they also found in their controls. This might compromise their power statistics. Finally, we recently found in a large prospective observational study (including almost 1000 consecutive patients who underwent a transoesophageal echocardiography) that only a PFO with ASA was a strong independent predictor for MA.5 In conclusion, we therefore hypothesize that the link between the association of PFO and MA might be ASA, which was not investigated in the trial discussed above.

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Disclosures
None.

References
Letter by Luermans et al Regarding Article, "Lack of Association Between Migraine Headache and Patent Foramen Ovale: Results of a Case-Control Study"
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