

Association Between Migraine with Aura and Cryptogenic Ischemic Stroke in the Young

A strong relationship was seen in both women and men, irrespective of the presence of PFO.

Previous studies have evaluated some of the complex relationships among cryptogenic stroke, migraine, and patent foramen ovale (PFO) and suggested the following: Migraine is associated with ischemic stroke, migraine with aura is associated with the presence of PFO, and the association between migraine and cryptogenic ischemic stroke is stronger among patients with PFO than without. But to tease out the precise relationships — particularly between cryptogenic stroke in the young and migraine with aura and how this association may be modified by sex or the presence of PFO — studies that address potential confounders and apply rigorous and standardized assessments of migraine and migraine with aura are required.

Aiming to provide such information, investigators at 18 sites in Europe prospectively enrolled 347 consecutive patients aged 18 to 49 with cryptogenic ischemic stroke and an equal number of population-based, sex- and age-matched, stroke-free controls. Study coordinators applied a brief screener to identify a history of migraine with and without aura, and the performance of this screener was validated against an evaluation by a headache neurologist in a subset of 50 cases and 50 controls. A total of 187 cases and 155 controls also had transcranial Doppler ultrasound with bubble screen to identify a right-to-left shunt, which was taken to indicate the presence of a PFO.

The investigators identified a strong relationship between cryptogenic ischemic stroke and migraine among both women and men, regardless of PFO presence. Furthermore, there appeared to be a dose-response relationship of migraine with aura and degree of right-to-left shunt: Prevalence of migraine with aura increased with degree of shunt.

COMMENT

This study provides additional evidence linking migraine and cryptogenic ischemic stroke in the young, but the precise mechanisms remain elusive. — **Anthony S. Kim, MD**

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