

European Headache Federation

EHF NEWS



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Patent foramen ovale and migraine: no reason to intervene

A Statement of European Headache Federation

Cardiac embolism is the most frequent cause of ischemic stroke in hospital-based and population-based registers. Patent foramen ovale (PFO) with and without atrial septal aneurysm (ASA) has been recognized as a potential risk factor for ischemic stroke. Besides paradoxical embolism from small thrombi that arise in the venous system and cardiac thrombus formation secondary to PFO/ASA-related cardiac arrhythmia, another

likely ischemic stroke cause is thrombus formation in the PFO.

Several studies have investigated a possible link between PFO and migraine. Del Sette *et al.* compared 44 patients with migraine with aura, 73 patients less than 50 years of age with focal cerebral ischemia, with 50 control individuals without cerebrovascular disease nor migraine using transcranial Doppler. The prevalence of right-to-left shunt was significantly higher in patients with migraine with aura (41%) and cerebral ische-

mia (35%) than in controls (8%). Anzola and colleagues performed a case-control study of 113 consecutive patients with migraine with aura, 53 patients with migraine without aura and 25 age-matched nonmigraine individuals; the prevalence of PFO was significantly higher in patients with migraine with aura (48%) compared with patients with migraine without aura (23%) and controls (20%).

A coincidence of two conditions, however, does not necessarily imply a causal relationship. Moreover, it is diffi-

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An inter-university centre for the study of headache in Italy

UCADH (University Centre for Adaptive Disorders and Headache) was founded in 1988 as an offshoot and extension of the Centro Cefalee e Circolazione Encefalica which, founded by Prof. Giuseppe Nappi in 1969, had been active at the University of Pavia since the late 1960s. UCADH is the result of the

increasing interest in the field of headache in Italy and in the world over the past two decades. Initially, UCADH was made up of 4 sections from 3 universities (Pavia, Modena I, Parma, Modena II), today it has 11 sections from a total of 9 universities. The aim of UCADH was to create a multidisciplinary structure that might

further the integration of the scientific experience of several Italian groups working in the field of headache and other functional neurological diseases. Advances in technology, with the development of more and more sophisticated techniques, had indeed drawn

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Several studies have investigated a possible link between patent foramen ovale (PFO)...

cult to imagine how PFO should lead to a migraine attack with aura a neural event in the occipital cortex caused by spreading depression. Even if small emboli arise from a PFO, these would travel preferentially into the anterior circulation rather than into the posterior cerebral artery. A recent family study indicated that migraine with aura and cardiac right-left shunts are inherited in a dominant pattern.

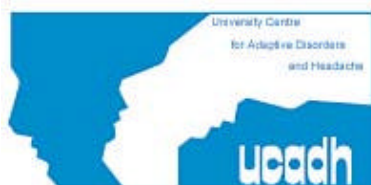
Should PFOs be closed? Even if we assume there is a causal relationship between PFO and migraine, closure of PFO should then result in migraine improvement. To date, one randomized controlled prospective trial has been performed (MIST) and failed its primary outcome measure. The trial compared

transcutaneous PFO closure in patients with migraine with aura compared to a sham procedure. In a retrospective study, 215 stroke patients with PFO were examined and underwent closure of PFO as a secondary prevention measure. A year later, patients were asked about their migraine frequency before and after PFO closure to determine whether this intervention affected migraine attacks. Patients with a PFO and a history of stroke had higher migraine prevalence (22%) than the general population (10%). In patients with migraine with aura, percutaneous PFO closure reduced the frequency of migraine attacks by 54% and in patients with migraine without aura by 62%. PFO closure did not have a statistically signifi-

cant effect on headache frequency in patients with nonmigraine headaches. Several other retrospective studies found a similar relationship between PFO closure and migraine improvement. However, all these studies had major limitations. First, despite migraine improving spontaneously with age, no study had a control group. Second, the high placebo response can reduce the frequency of migraine by up to 70%. Third, after PFO closure, most patients received aspirin or clopidogrel both of which have a modest migraine prophylactic activity, at least in men. Fourth, retrospective collection of headache data is highly unreliable; recall bias has a major influence

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An inter-university centre for the study of headache in Italy (continue from page 1)





attention to the need for a close link between various university centres, each equipped with structures and facilities able to deal with a common group of scientific issues, enabling them to adopt a different, multi-integrated approach. From its very beginning, UCADH has acted as a network, pooling some of the best Italian university centres in order to make the best use of human and technological resources. All

this with the aim of encouraging experimental and clinical studies in the field of the physiological and pathological adaptation of various body functions to internal/external environmental changes. The Centre's objectives are pursued through a policy of spreading scientific knowledge, organizing conferences and seminars, promoting and co-ordinating the activities of the external investigators who collaborate with the Centre, submitting

and implementing projects of basic, applied and goal-oriented research, and supporting and participating in the scientific and research activities of public and/or private institutions. <http://www.cefalea.it/ucadh.cfm>

Fabio Antonaci
(Pavia)

European Headache Federation (EHF)
University Centre for Adaptive Disorders and Headache
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present

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The Master in Headache Medicine is aimed at developing excellence among experts in this field of clinical medicine. Its purpose is to promote and disseminate epidemiological, nosographic, genetic, pathophysiological, diagnostic, social- health, clinical and therapeutic knowledge of headache, a disease that has a considerable impact on the general population. This high-level post-graduate course will provide successful applicants with the instruments necessary to make a modern evaluation of headaches that will allow the correct management of affected patients. Course participants will be able to acquire multidisciplinary competences that will enable them to relate to the problems of headache patients by means of the most wide-ranging, inter-cultural skills. The Master is included in the Global Campaign to Reduce the Burden of Headache Worldwide (GC), an initiative in collaboration with WHO, and is endorsed by the European Headache Federation.

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This newsletter seeks to provide timely and accurate information from the most knowledgeable sources. The newsletter is mailed to EHF members, national drug companies and medical journalists in line with information given by board members. The views expressed in the articles in EHF News are those of the authors and do not necessarily reflect those of the EHF and the Publisher.

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What's on...



📅 **Academic Year 2006-2007, "La Sapienza" University of Rome, Italy**
Master's Degree in Headache Medicine
Information:

www.uniroma1.it/headache
paolo.martelletti@uniroma1.it

📅 **18th-20th September 2006, London, UK**

16th Migraine Trust International Symposium

Information: www.migrainetrust.org

📅 **5th-7th October 2006, Castrocaro Terme (FC), Italy**

European Headache Federation School, 2006 course
(International School on Adaptive Disorders and Headache)

Information: neuronet@libero.it

📅 **17th-21th May 2008, Istanbul, Turkey**

VII International congress on Headache in children and adolescents

Information: congress@topkon.com
<http://www.topkon.com>

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on the results. Furthermore, the most recent study observed that as many patients improve from migraine as develop new onset migraine after PFO closure. In addition it has to be considered that PFO closure has a small but relevant incidence of serious adverse events including stroke, pericardial tamponade, atrial fibrillation or death.

Thus, to date there is insuffi-

cient evidence on the hypothesis that migraine frequency is improved by PFO closure. Properly conducted, prospective studies in migraine patients including control groups with other or no headaches are needed. Until then PFO closure should not be used for the prophylaxis of migraine outside of randomized controlled trials.

**On behalf of the EHF
Executive Committee**

