Stroke in the Young

We applaud the efforts of Carolei et al.1 to bring some order to the hitherto neglected subject of ischemic stroke in the young. However, we have doubts that their methodology was adequate to seriously determine pathogenesis.

The study was conducted during 1984-1988, before the widespread use of transesophageal echocardiography (TEE) showed how frequently cardioembolic stroke occurs and before present knowledge of the role of aortic disease in stroke.2 For instance, we now know that where transesophageal echo reveals potential cardioembolic sources in 30% to 40% of patients without carotid disease, TEE reveals them in 60% to 70%.3

Further, the authors included oral contraceptives (OC) as a risk factor for stroke in their study design and, not surprisingly, found that some of their patients were taking them. In fact, there is very little evidence that OCs were ever stroke risk factors; the epidemiological strategies of the early studies were inadequate by today’s standards, had painfully small numbers of patients, and did not include computed tomographic scanning. Vessey et al.,4 in a recent survey, concluded that the hazards of OCs had been grossly overemphasized, and an expert subcommittee of the American Heart Association concluded after weighing the evidence that there was no substantial evidence to incriminate the pill.5 One group of reviewers actually concluded that OCs protect against mortality from circulatory disease.6 Even the advocates of OCs as a stroke risk agree on one thing: risk is only evident in women over 35 years of age.7 In the study of Carolei et al, most of the alleged OC strokes were in women under 35 years of age.

A listing of “putative” risk factors prior to the study and the discovery of their “guilt-by-association” role at the end is simply a self-fulfilling prophesy. We feel that the authors have conducted an interesting and hypothesis-generating pilot study. What they need now is a case-control study that compares risk factors in a similar nonstroke cohort to test whether the alleged risk factors are real or coincidental.

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References

Response

Oral contraceptive (OC) use is among the few risk factors that have been extensively investigated in the young. Despite the controversy, Hachinski1 clearly states that “. . . the best evidence for an association between oral contraceptives and the risk for stroke comes from the large prospective study being carried out by the Royal College of General Practitioners2 which showed that the risk of cerebral thrombosis and cerebral embolism is 19 times that of nonusers. . . .”

As observed by Norris and Bladin, we looked at OC use as a risk factor for stroke and, not surprisingly, found that 12.5% of our female patients were taking them. However, OCs were considered the more likely etiology for cerebral ischemia in only 13 patients (8.1%) in whom other identifiable causes were “absent.” This percentage was notably lower than previously reported in patients under 45 years of age.3,4 Thus confirming the possibility that the role of OCs might have been grossly overemphasized in the past. In patients over and under 35 years of age, the distribution of OC (14 versus 6, respectively) and allegedly OC-related cerebral ischemic events (9 versus 4, respectively) were similar. Therefore, the risk is present in both age subgroups, although OC use is more frequently reported in women under 35 years of age, confirming previous data from Bogousslavsky and Piero.4

Preliminary results of our study in a hospitalized control group showed an odds ratio of 4.6 (confidence interval, 1.5 to 14.0) for OC use, proving the contribution of this risk factor to the etiology of cerebral ischemia in young women.

The ongoing 5-year follow-up of our prospective series of 333 young adults indicated that after OC discontinuation, no recurrence of nonfatal and fatal ischemic events occurred, which casts serious doubts on the fallacious hypothesis of a suggested protective effect of OC against mortality from circulatory disease.5

Our patients with normal transthoracic echocardiography did not undergo TEE, which was not available (as we specified in our paper) when the protocol was defined. TEE could have contributed to increasing the percentage of new but still “putative” cardioembolic sources, such as patent foramen ovale, atrial septal aneurysm, left atrial appendage thrombi, and aortic arch plaques, thus decreasing the percentage of undetermined or unknown etiologies in the young. However, in a more recent series,6 TEE did not prove as helpful as expected despite the invasive approach to the management of cerebral ischemia.

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References
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