Female Predominance at Very Young Ages and Other Similarities Between Finnish and Greek Young Ischemic Stroke Patients

To the Editor:

While analyzing the data collected in our similar, however significantly smaller study, we read with great interest the recent article by Putaala et al about ischemic stroke patients aged 15 to 49 years.1 We evaluated 250 prospectively collected Greek ischemic stroke patients aged up to 45 years (mean 37.96 ± 7.25) and found impressive similarities between both studies. Similarly to the Finnish population, we demonstrated a male predominance (male: female ratio 1.27:1) whereas females were significantly younger (37.96 ± 7.1 versus 35.55 ± 7.25; P = 0.009). In our overall younger population we also found that hypercholesterolemia (41.6%), smoking (58%), and hypertension (22.4%) were the most commonly documented—however differently ranked—traditional risk factors. Cardioembolism (16.4%) was the commonest cause of infarction, and 47.6% of cardioembolic strokes were attributed to congenital atrioseptal defects (patent foramen ovale and/or atrial septum aneurysm). The corresponding numbers reported in the Finnish study were with 19.6% and 46% quite similar. In accordance to previous studies from other European countries and the United States,2–6 our Finnish colleagues showed that among those aged under 30 years females outnumbered males significantly. We came to the same conclusion and recorded exactly the same rates (females versus males: 56.3%, n = 27; versus 43.8%, n = 21) but marginally missed statistical significance (P = 0.057), probably because of the small number of cases in this age subgroup. Comparing patients under 30 with those aged 31 to 45, we found hypertension and smoking to be significantly more frequent within the older patients’ subgroup. There was no significant difference regarding the frequency of coagulopathies, systemic and hematologic (thalassemia, sickle cell anemia) diseases that may be associated with increased stroke risk. However, we noted significant differences when comparing both genders. Traditional stroke risk factors were significantly more common among males, whereas migraine, coagulopathies, systemic and hematologic diseases were significantly more frequent among females. Finally, when comparing stroke etiology according to the TOAST criteria between both age subgroups and genders, we found statistically different distributions. Atherothrombotic, lacunar and cardioembolic stroke was more common among those over 30 years, whereas stroke of other determined or undetermined etiology was more frequent in patients under 30 years.

Based on the increasing longevity, Putaala et al assumed that the upper age cut-off may shift upwards and therefore chose 50 as the upper age limit in their “young stroke” patients’ population in order to conceptualize the change in risk factors and stroke etiology as a function of age. Although most recent studies have used 45 as the upper age limit, the authors’ argumentation seems reasonable. It seems that risk factor profiles and etiologies start to merge those seen in early midlife.1 The female predominance at very young ages and moreover the etiologic diversity between both genders and age subgroups, as found in our population, may allow a different approach. Is it really justified to consider patients suffering stroke at the age of 45 or 50 years as “young”? Or should we—contrary to the authors’ suggestion—shift the age limit downwards to 30 years of age and this way redefine and distinguish “very young or young” from “young or middle-aged” stroke respectively?

However, the similarity of our results with those of Putaala et al demonstrates that stroke in the young shows common features in ethnically different populations. Large-scaled studies, as the one from the Helsinki Young Stroke Registry, or even multinational young stroke registries might provide useful answers on the really challenging and exciting issue of etiology, prevention and treatment of stroke in the young.

Disclosures

None.

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