Subarachnoid Hemorrhage in Finland

To the Editor:

In the July issue of Stroke, Sarti and others1 published the results of their study on the epidemiology of subarachnoid hemorrhage (SAH) in Finland. The incidence rates obtained were compared with earlier studies, and the authors concluded that the rates were higher than previously reported from Finland.2-4 As an explanation, they give methodological differences between the studies and a more complete case finding, but not a real increase in the incidence of SAH. The annual incidence rates of 33/100,000 for men and 25/100,000 for women (29.8/100,000 for men and women combined) are unquestionably high, but the figures are calculated for a population 25-74 years of age. The omission of young (<25 years) and old (>74 years) people who form approximately 39% of the total population in Finland gives artificially high incidence rates that are not comparable with earlier studies with incidence rates calculated for the total population.

The only relevant way to compare different epidemiological studies on stroke, including SAH, is to adjust the results by sex and age to the same reference population. In Figure 1, this adjustment has been performed by the direct method using the Finnish population of December 31, 1986, as a reference. In addition to the study by Sarti and others,1 all previous studies from Finland are included.2-4 The incidence rates vary in five of the studies from 14.4 to 19.6/100,000/yr, with the 95% confidence intervals overlapping. The estimate by Pakarinen2 dating back to 1967 is based on patients having SAH during 1954-1961, when angiograms were performed by the direct method using the Finnish population of December 31, 1986, as a reference. In addition to strengthening the results of the previous studies, it is accepted by most people, that small-artery disease is the main contributor to lacunar stroke, whereas artery-to-artery embolism is the most common etiology for other ischemic strokes.4 On the other hand, I think that Tegeler et al nicely demonstrate that lacunar stroke is also associated with carotid stenosis, as they found that carotid stenosis was more than twice as common ipsilateral to lacunar infarct than contralaterally, although the figures are small. A similar finding has recently been reported by Zhu and Norris,5 who found that the deep perforators from the carotid system.

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FIGURE 1. Age- and sex-adjusted incidence rates of subarachnoid hemorrhage in six Finnish epidemiological studies. n, Number of patients; bars, 95% confidence intervals.

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5. Sivenius J: Studies on the rehabilitation, epidemiology and clinical features of stroke in East Central Finland. University of Kuopio, 1982

Carotid Stenosis and Lacunar Stroke

To the Editor:

The data reported by Tegeler et al1 are important, but mainly for a reason not explicit in the conclusions. The authors conclude that ≥50% carotid stenosis is more frequent in nonlacunar than in lacunar stroke, a finding that is not a great surprise, I think, because it is accepted by most people, that small-artery disease is the main contributor to lacunar stroke2 whereas artery-to-artery embolism is the most common etiology for other ischemic strokes.4 On the other hand, I think that Tegeler et al nicely demonstrate that lacunar stroke is also associated with carotid stenosis, as they found that carotid stenosis was more than twice as common ipsilateral to lacunar infarct than contralaterally, although the figures are small. A similar finding has recently been reported by Zhu and Norris,5 who found that the more severe the carotid stenosis, the higher the incidence of both peripheral and lacunar infarctions ipsilateral to the stenosis. Tegeler et al1 nicely demonstrate the usefulness of systematic noninvasive screening of the carotids in presumed lacunar stroke. (Would anybody still perform "routine cerebral angiography" before ultrasounds in this situation?)

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References

The following is in response:
To the Editor:

Dr. Bogousslavsky's comments regarding our study of carotid stenosis in lacunar stroke1 are greatly appreciated. As he points
Subarachnoid hemorrhage in Finland.
R Fogelholm

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