Letter by Kirchoff-Torres and Labovitz Regarding Article, “Lifelong Rupture Risk of Intracranial Aneurysms Depends on Risk Factors: A Prospective Finnish Cohort Study”

To the Editor:

We read with interest the article by Dr Korja et al1 about the lifelong natural history of unruptured intracranial aneurysms (UIAs) in 118 Finnish patients but worry that the results may be overgeneralized. UIAs discovered because another aneurysm ruptured are likely different from UIAs found for other reasons. The authors report a lifetime risk of aneurysm rupture of 29%, with annual rupture rate per patient of 1.6% and per aneurysm of 1.2%. Of patients with UIAs <7 mm at baseline, 25% had subarachnoid hemorrhage (SAH) in follow-up, and the majority of these had grown to \( \geq 7 \) mm by the time of rupture. The long follow-up period of mean 18.5 years (range, 0.8–52.3 years), as well as the absence of confounding from elective treatment of unruptured aneurysms felt to be at highest risk of rupture, was important advantages of the study. The authors’ conclusion that the study represents the lifetime course of UIAs, however, must be taken in the context of why these patient’s aneurysms were initially discovered. The great majority of the patients in this study (93%) presented with SAH. The distinction between the natural history of UIAs in patients without a history of SAH and in those with a history of SAH is critical, because a history of SAH has been identified as a significant risk for UIA rupture.2,3 The authors briefly mention this as a limitation of the study, but we feel that it is important to illustrate this point. For example, in the retrospective arm of the International Study of Unruptured Intracranial Aneurysms (ISUIA),2 UIAs <10 mm in diameter in patients with history of SAH from a different aneurysm were 11x as likely to rupture as similar sized UIAs in patients without a history of SAH, yielding an annual risk of rupture of 0.5% versus 0.05%, respectively. In patients with UIAs >10 mm in diameter, history of SAH did not influence risk of rupture. Although SAH was not associated with risk of UIA rupture in the recent Unruptured Cerebral Aneurysm Study of Japan (UCAS Japan),4 this cohort included a small percentage of patients with prior history of SAH and untreated UIAs. The lifetime risk of rupture of UIA of 29% in this cohort composed almost entirely of survivors of SAH illustrates the importance of consideration for treatment of residual UIAs in patients presenting with SAH, especially in those with risk factors such as female sex, current smoking or UIAs \( \geq 7 \) mm. In addition, it supports that increased attention and consideration for treatment should also be paid to small aneurysms in survivors of SAH. In current practice, clinicians are increasingly faced with decisions about whether to treat small aneurysms discovered incidentally by tests such as computed tomography angiography or magnetic resonance angiography in patients with no history of SAH. Attempts to apply the findings of this study to predict lifetime risk of UIA rupture in patients with no history of SAH should be done with caution.

Disclosures

None.

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DOI: 10.1161/STROKEAHA.114.006791
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Stroke. 2014;45:e210; originally published online August 14, 2014; doi: 10.1161/STROKEAHA.114.006791

Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0039-2499. Online ISSN: 1524-4628

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