

Charting the Course Risk Scores for Major Bleeding in Transient Ischemic Attack and Ischemic Stroke

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Secondary ischemic stroke prevention requires navigating a strait with infarction on one side and hemorrhage on the other. With increasing age, the strait gets narrower and the rocks sharper. It helps to have good navigational charts and Hilkens et al¹ provide one with their validation study of the S₂TOP-BLEED scale published in this journal.

Clinical scores are published regularly, derived from observational studies and simplified with a limited number of inputs, all with the goal of being able to predict some future adverse outcome in patients. It is not clear whether the derivation of a scale, regardless of its convenience, is sufficient, because a major question for any scale is how well it performs across diverse populations. This study performs an important but often neglected task by validating 3 scales to estimate risk of bleeding on antiplatelet drugs after a transient ischemic attack or ischemic stroke.

The authors used a cohort of stroke and transient ischemic attack patients treated with antiplatelet medication from the population-based Oxford Vascular Study to externally validate the S₂TOP-BLEED scale for major bleeding. The scale scored a modest C statistics of 0.69, which nevertheless was better than the performance of competing scales (REACH, C statistics of 0.63, and Intracranial-B2LEED3S, 0.60) in the same cohort. Rising age, which demonstrates a nonlinear increase in risk, was the most important part of every model, and the S₂TOP-BLEED scale represented risk from advanced age particularly well. Performance for lethal bleeding was especially good at 0.77 and the ratio of infarction to major bleeding, mostly from the gastrointestinal tract, decreased from 6.6 in the lowest risk group to 1.8 in the highest risk group, making the score particularly relevant in the most vulnerable patients. The patients at highest risk for bleeding, however, also had the highest risk of recurrent ischemic stroke.

This report highlights how antiplatelet treatment, though beneficial for recurrent ischemic stroke prevention, comes at a price. It is not as purely good as eating vegetables. The

S₂TOP-BLEED scale does not identify ischemic stroke patients who should not take antiplatelet drugs and the authors correctly do not imply that it might. Instead, the authors suggest that the score might help identify patients who could benefit from concurrent treatment with proton pump inhibitors.

Prior work from the Oxfordshire group has shown substantial risk of major upper gastrointestinal tract bleeding in elderly patients prescribed antiplatelet therapy after vascular events and suggested that coprescription of proton pump inhibitors might substantially reduce that risk.² Long-term proton pump inhibitors treatment has its own possible risks, particularly in the elderly patients at highest risk of bleeding, with observational studies providing conflicting conclusions about many safety concerns, including infection, renal failure, dementia, hip fracture, iron and B12 absorption, and excess mortality.^{3,4} Thus, in addition to identifying ischemic stroke patients at elevated risk of bleeding on antiplatelet treatment, these data provide justification for performing a clinical trial of proton pump inhibitors supplementation in stroke/transient ischemic attack patients with high scores, perhaps most ideally performed in pragmatic British fashion to measure outcome inexpensively in a broad variety of subjects.

Disclosures

None.

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