BLEEDING PREDICTS ISCHEMIA IN PAD

In patients with peripheral arterial disease (PAD), the main adverse effect of antithrombotic therapy is bleeding. Van Hattum *et al.* report that this complication is associated with an increased risk of future ischemic disease. "The ischemic consequences of bleeding, possibly promoted by antithrombotic treatment, have been described only in patients with [coronary artery disease] or cerebrovascular disease and have not yet been studied in patients with PAD," write the authors.

Data were analyzed from patients involved in the Dutch Bypass and Oral Anticoagulants or Aspirin Study, which compared the antithrombotic efficacy of aspirin with oral anticoagulants following infrainguinal bypass surgery. The association between major bleeding and subsequent major ischemic events (the composite of cardiovascular death, nonfatal ischemic stroke, nonfatal myocardial infarction, and major amputation) was assessed during follow-up (mean 14 months). Nonfatal major bleeding occurred in 101 patients, 22% of whom experienced subsequent major ischemic events. By contrast, 196 major ischemic events were recorded in the 2,129 patients (9%) who did not experience bleeding.

Furthermore, the risk of future ischemic complications was three times higher in patients with previous major bleeding, and was particularly elevated in the first 30 days after a bleed. On the basis of these findings, the authors suggest that optimal antithrombotic treatment and optimal prevention of bleeding complications should be considered in parallel. They conclude by recommending that, if necessary, treatments should include the use of low-dose aspirin and gastrointestinal protection, while optimization of treatment compliance and effective risk management are critical considerations.

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Original article van Hattum, E. S. *et al.* Bleeding increases the risk of ischemic events in patients with peripheral arterial disease. *Circulation* **120**, 1569–1576 (2009)