FPIN's Clinical Inquiries

Bridging Warfarin Before Colonoscopy in Patients with Atrial Fibrillation

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Clinical Question

Is bridging warfarin (Coumadin) before screening colonoscopy in patients with atrial fibrillation beneficial for reducing the risk of stroke?

Evidence-Based Answer

A limited number of trials that examined the risk of temporary interruption of anticoagulation before a variety of procedures did not find a reduction in the risk of stroke, but they did show an increased risk of bleeding events and venous thromboembolism (VTE) in patients who were bridged during warfarin interruption. (Strength of Recommendation [SOR]: B, based on a meta-analysis of observational studies and observational trials.) Consensus guidelines recommend bridging based on individual patient risk of VTE. (SOR: C, based on a consensus guideline.)

Evidence Summary

A 2016 meta-analysis investigated the risks and benefits of bridging with low-molecular-weight heparin (LMWH) or unfractionated heparin during temporary interruption of warfarin therapy in 13,810 patients with atrial fibrillation (mean age: 71 to 75 years).[1] The meta-analysis included one randomized controlled trial (RCT), one subanalysis of an RCT, and four observational studies that followed patients for a minimum of 30 days. Four studies (N = 8,420) found no significant difference in rates of cerebrovascular accidents with bridging vs. without bridging for a variety of procedures ranging from minor (e.g., dental or cataract surgery) to moderate and major (e.g., percutaneous coronary intervention, abdominal or cardiac surgery). The duration of bridging was not consistently reported. One of the trials reported that time to achieve a postprocedure therapeutic international normalized ratio was eight days (plus or minus four days). The meta-analysis found no difference in the risk of VTE (five trials; N = 10,700) or overall mortality (five trials; N = 12,313). However, five trials (N = 10,700) found a decreased risk of major bleeding (odds ratio [OR] = 0.4; 95% confidence interval [CI], 0.24 to 0.68) and any bleeding (OR = 0.44; 95% CI, 0.30 to 0.65) in patients who were not bridged.

A 2017 prospective cohort study using a database of Swedish residents receiving anticoagulation (n = 14,556) examined differences in outcomes between those who were and were not bridged with LMWH during temporary interruption of therapy.[2] The duration of warfarin interruption differed between the groups; the average duration for the bridged group was 5.4 days vs. 7.5 days for the nonbridged group. A subset of patients included in the study (n = 2,194) were receiving anticoagulation for atrial fibrillation; within this subset, there was an increased risk of VTE among those who received LMWH bridging (hazard ratio [HR] = 2.52; 95% CI, 1.07 to 5.94). After propensity score matching to adjust for differences in risks between patient groups, there was still an increase in VTE in the bridging group. There was no difference in the risk of death, bleeding, or overall complications.

A 2017 meta-analysis of five retrospective cohort studies (N = 2,601) examined bleeding risk during colonoscopic polypectomy in adults whose long-term anticoagulation ▶

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was interrupted with and without bridging.[3] Rates of postpolypectomy bleeding were higher among patients who received heparin bridging during the procedure compared with those who did not (OR = 8.29; 95% CI, 4.96 to 13.9). Four of the five studies independently demonstrated the same finding.

In 2017, the American College of Cardiology published an expert consensus decision pathway for periprocedural management of anticoagulation in patients with nonvalvular atrial fibrillation.[4] For patients receiving a vitamin K antagonist (e.g., warfarin), the recommendation for bridging is stratified by VTE risk. Bridging is not recommended for patients at low risk (less than 5% per year; score of 4 or less on the CHA_2DS_2-VASc [congestive heart failure; hypertension; age 75 years or older (doubled); diabetes mellitus; stroke, transient ischemic attack, thromboembolism (doubled); vascular disease; age 65 to 74 years; sex category]; or no history of ischemic stroke, transient ischemic attack, or systemic embolism). Bridging is recommended for patients with high risk of VTE (greater than 10% per year; CHA_2DS_2-VASc score of 7 to 9; or history of ischemic stroke, transient ischemic attack, or systemic embolism occurring in the past three months). The decision to bridge should be based on bleeding risk in patients with moderate risk of VTE (5% to 10% per year; CHA_2DS_2-VASc score of 5 or 6; or history of ischemic stroke, transient ischemic attack, or systemic embolism occurring more than three months previously).

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