Commentary: Rushing to revascularize may be risky, but one size does not fit all

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Optimal timing of coronary artery bypass grafting (CABG) in the context of acute coronary syndrome (ACS) and dual antiplatelet therapy remains controversial and practice patterns vary. Despite consensus among guidelines that minimum 5-day preoperative clopidogrel cessation is ideal, risk of adverse events during the washout period is dependent on coronary anatomy. Further, baseline bleeding risk varies among patients and the evidence for optimal timing of CABG is mixed. Clopidogrel cessation decreases the risk for bleeding and resultant secondary complications, but comes at the cost of a potentially increased risk of recurrent myocardial infarction (MI) or other thrombotic events. We congratulate Qu and colleagues for addressing this controversy.

Their study is a single-center retrospective observational analysis of 5543 patients undergoing post-ACS CABG.

Using institutional registry data, the authors compared those receiving clopidogrel within 5 days of CABG (n = 820; 15%) versus those for whom clopidogrel was stopped >5 days in advance (n = 4723; 85%). The primary outcome, a composite of stroke, all-cause mortality, and MI at 30 days, was worse, not better, in the late cessation group (odds ratio, 1.63; 95% confidence interval, 1.16-2.29; P = .005). The same pattern was seen in all secondary 30-day outcomes in descending order of effect size, including stroke, transfusion, major bleeding events (defined by validated CABG-specific bleeding criteria), and re-exploration for bleeding. In other words, early cessation of clopidogrel was associated with both a reduction in bleeding and a reduction in thrombotic events. The authors implemented inverse probability treatment weighting to account for baseline differences and sensitivity analysis with propensity score matching reinforce the robustness of the findings. The small number of patients who did not undergo CABG due to cardiovascular events during the preoperative waiting period were also included in the analysis (0.2% had clopidogrel continued within
5 days and 0.06% had clopidogrel stopped). A graded response was observed when comparing <3 day to a 3- to 5-day washout period, as well as an additional 2-fold increased risk of MI.

Bleeding assessment tools based on clinical history represent convenient and effective screening methods to identify at-risk populations and some have been validated in cardiac surgery. The Papworth score has been correlated with major bleeding post-CABG, whereas an abbreviated amalgamation of the Transfusion Risk and Clinical Knowledge (TRACK) and Transfusion Risk Understanding Scoring Tool (TRUST) predicts transfusion risk in cardiac surgery with or without cardiopulmonary bypass. Qu and colleagues found transfusion requirements and major bleeding remained higher with clopidogrel continuation in women, despite a lower incidence of the primary outcome. Older age of presentation, higher degree of anatomical complexity, and smaller vessel size possibly render women more susceptible to thrombotic complications. Small body size and anemia on presentation, which are consistent factors in validated risk scores, may be associated with a greater transfusion risk. Additionally, female sex, older age, type and urgency of surgery, and renal failure seem to increase risk for bleeding. Qu and colleagues found elderly patients to have greater transfusion requirements with short drug washout, reflecting more liberal transfusion thresholds; however, they also had more major bleeding, possibly reflecting increased comorbidities or postoperative anticoagulation for atrial fibrillation.

This study emphasizes the challenges of balancing variable risk profiles for surgical bleeding and thromboembolic complications for individual patients. Although platelet function tests exist with proposed clinical algorithms for lab-target-based transfusion and antiplatelet washout, use in precardiac surgery screening is not routine, with short drug washout, reflecting more liberal transfusion thresholds; however, they also had more major bleeding, possibly reflecting increased comorbidities or postoperative anticoagulation for atrial fibrillation. Despite rigorous statistical methods, there remains unavoidable bias and unmeasurable confounders related to the observational study design. In practice, many clinical and logistical factors influence the decision to move ahead quickly with surgery or wait for drug washout. This study focused on clopidogrel—ticagrelor or prasugrel are used commonly in Western centers. Finally, generalizability of study findings is limited by the center’s extremely large volume and discontinuation of aspirin.

The present study provides important contemporary evidence confirming current guidelines that early surgery without clopidogrel washout after recent ACS should be treated with caution. This is particularly the case among elderly patients and men. There is certainly a need for blinded, randomized controlled trial data to provide strong causal evidence regarding optimal timing of drug washout. Additionally, there may be a role for greater use of preoperative clinical and biochemical assessment tools to facilitate patient-tailored decision making, although validation studies are required.

References
Commentary: Shall we wait for two days more? Can we take this risk?

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Dual antiplatelet therapy (DAPT) with P2Y12-receptor inhibitors and aspirin is a well-recognized treatment aiming

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CENTRAL MESSAGE

In patients with acute coronary syndrome, mainly in subjects younger than 65 years, waiting for 2 more days before stopping DAPT might be reasonable to reduce the risk of major bleeding complications.

to reduce the incidence and recurrence of ischemic and thrombotic complications in coronary patients suffering from acute myocardial infarction and in patients who