Thromboelastography-platelet mapping expanding in non-cardiac surgery

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We read the work of Preisman et al. investigating the preoperative use of point-of-care-modified thromboelastography-platelet mapping (TEG-PM) in patients scheduled for surgical coronary revascularization [1] with great interest. We have been using TEG-PM for preoperative testing of patients with coronary stents or status post coronary artery bypass grafting (CABG) also receiving clopidogrel and aspirin, but scheduled for ‘non-cardiac’ surgery.

Although cardiac surgical patient group of Preisman et al. is unique, data does exist for quantification of platelet dysfunction for patients undergoing coronary revascularization in the catheterization laboratory as opposed to the operating room [2]. Several studies have addressed the ‘non-responder’ cohort, with the prevalence of non-responders to anti-platelet therapy found to be variable and often unexpectedly high in patients presenting for surgery in general [3,4]. Given the anticipated emotional and physiological stress of impending surgery, especially in hospitalized patients (some with a very recent catheterization experience), Preisman’s findings are not entirely unexpected.

In our preliminary non-cardiac surgical cohort, we also have found incomplete platelet inhibition assessed by TEG-PM, with an apparent greater impact on adenosine diphosphate (ADP)-receptor inhibition by clopidogrel than arachidonic acid inhibition by aspirin [5], similar to Preisman’s findings.

As cardiologist surgeons and anesthesiologists grapple with decision making in surgical patients receiving anti-platelet therapy, we echo Preisman’s recommendation for individualized objective assessment of anti-platelet effect leading to rational decisions for interruption (or not) of aspirin and clopidogrel.

References


Abbreviations: TEG-PM, thromboelastography-platelet mapping; ADP, adenosine diphosphate.

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neuraxial block), with the danger of thrombo-embolic events and consequent cardiovascular morbidity in a situation where anti-platelet therapy has been inappropriately interrupted during the perioperative period. Cardiologists face this precarious balance on a daily basis: the risk of intracoronary thrombosis versus the risk of bleeding. This problem may become even more relevant with the introduction into clinical practice of new, more potent anti-platelet agents [2]. Unfortunately, more often than not, these critical decisions are based on fixed doses of anti-platelet agents and time intervals. Despite the availability of point-of-care tests for the evaluation of the effects of anti-platelet therapy [3], current guidelines of the American College of Chest Physicians recommend against the routine use of platelet function assays to evaluate the effects of anti-platelet medication before surgery. This recommendation is based on the fact that such tests have not been fully investigated for most types of surgery and, as it has not been possible to identify patients at increased risk for perioperative bleeding, the clinical significance of such results is uncertain [4]. Lack of knowledge in this field makes any new piece of information extremely valuable. Further studies are warranted to evaluate the significance of different clinically applicable platelet function tests, as well as individualized treatment protocols based on the results of these tests.

References


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