Clopidogrel and aspirin administration management prior to coronary artery surgery requires an individual approach†

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We read with great interest the recently published retrospective study by Miceli et al. [1]. Using multivariable analysis, the authors found that administration of clopidogrel + aspirin within 5 and 2 days, respectively, before coronary artery surgery, was an independent risk factor for postoperative myocardial infarction (MI), re-exploration for bleeding, blood loss and blood transfusions [1].

Strategies to prevent excessive bleeding, blood transfusion and postoperative MI are essential for the successful management of patients undergoing coronary artery surgery and require a comprehensive approach. In our opinion, when assessing the influence of preoperative antiplatelet therapy (APT) administration management on bleeding and adverse ischaemic events, an objective quantification of platelet activity should necessarily be taken into consideration. The efficacy of platelet inhibition with aspirin and clopidogrel varies widely among patients, from intensive platelet inhibition to poor platelet response, and these facts could certainly affect bleeding and ischaemic events in patients undergoing coronary artery surgery. Coronary artery surgery patients may be postoperatively at increased risk for developing MI regardless of preoperative APT discontinuation management. The frequency of low responsiveness for the two drugs has been reported to range from 1 to 45% [2, 3]. In our recent study [3], we analysed the proportion of patients with aspirin resistance both pre- and postoperatively. All patients received aspirin 100 mg day−1 until the day of surgery and we observed 31.3% patients with aspirin resistance preoperatively [3]. Postoperatively, we registered an increased proportion (46.5%) of coronary artery surgery patients with aspirin resistance, despite a higher dose of 300 mg day−1 of aspirin having been administered [3]. In the present study [1], patients received postoperatively 75 mg day−1 of aspirin, so we can assume that an even higher percentage of patients could have aspirin resistance, which may affect the incidence of MI, regardless of preoperative APT management.

On the other hand, there is evidence that certain patients have an accentuated and prolonged response to the usual doses of preoperative aspirin that may result in increased perioperative blood loss [4]. Recently, our team found that preoperative low values in platelet function tests that were sensitive to the effects of aspirin and clopidogrel to be predictive of excessive bleeding in a group of patients undergoing coronary artery surgery [5]. The role of aspirin and clopidogrel administration management should be separately assessed by drug-specific platelet function tests to provide the most precise and reliable information about benefits and risks of preoperative administration for each antiplatelet agent, thus facilitating an individual therapeutic approach for each antiplatelet agent both pre- and postoperatively. Such an approach could distinguish patients with high residual platelet activity, and thus a proclivity to ischaemic events, or enhanced platelet inhibition, leading to a proclivity to excessive bleeding. Timing of preoperative discontinuation and intensity of postoperatively administered aspirin and clopidogrel should be tailored according to drug-specific platelet function tests in order to minimize both bleeding and ischaemic events. However, such an approach requires prospective studies with the aim of providing a precise and comprehensive view of the relationship between APT administration management and both bleeding and ischaemic events through achieved platelet inhibition, thus providing drug-specific platelet function test cut-off values that delineate bleeding and ischaemic events.

REFERENCES


