Letter to the Editor

Clopidogrel before coronary artery surgery: bleeding or no bleeding?

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The recent article by Karabulut et al. [1] on use of clopidogrel before coronary artery surgery addresses an important issue faced by most cardiac surgeons in the modern era of acute coronary syndrome (ACS) and percutaneous interventions. The results of this prospective observational study suggest that preoperative use of clopidogrel is not associated with increased bleeding and need for surgical exploration as well as risk of blood and blood product transfusion after CABG. Interestingly, these results are not only contrary to those of the other researchers [2–4] but also contradict the expected effect of clopidogrel administration [5].

Clopidogrel, a thienopyridine derivative, is an antiplatelet agent that inhibits the P2Y12 receptor and is used as an antithrombotic drug [5]. It produces irreversible inhibition of platelet aggregation, and therefore the effect is present for the life of the platelet. Bleeding time returns to normal 10 days after ceasing clopidogrel administration [5]. Based on this information, for elective surgical procedures, clopidogrel should be stopped 7–10 days before surgery, except if the benefit of the antiplatelet effect outweighs the risk of perioperative bleeding. However, with the latest boom in percutaneous intervention techniques, cardiologists prefer clopidogrel treatment in addition to aspirin before percutaneous coronary intervention. This regime has been shown to decrease the incidence of coronary occlusive events [5].

A sequel of this protocol is the changing profile of coronary artery surgery patients. Today a significant number of patients presenting with ACS may be sent directly for coronary artery surgery from the catheterization suite owing to one reason or another. As these patients have been on clopidogrel and other anticoagulation medication, the potential risk of increased postoperative bleeding and need for re-exploration and transfusion of blood products raises concerns about preoperative use of clopidogrel.

Although, the study of Karabulut et al. [1] downplays the impact of clopidogrel on postoperative bleeding, in actual practice, the haemostatic derangements associated with cardiopulmonary bypass present a significant concern for patients undergoing emergency coronary artery surgery after acute loading with clopidogrel. Irrespective of whether preoperative clopidogrel administration results in bleeding or no bleeding, it is extremely important to realize that there is a window of opportunity to perform urgent bypass grafting. This arises from the delay in the formation of the active metabolite of clopidogrel. The inhibition of platelet aggregation by clopidogrel commences within 1 h of a 375 mg loading dose and reaches its peak effect at 5 h [5]. Hence, full advantage should be taken of this information. In addition, avoiding cardiopulmonary bypass and performing myocardial revascularization ‘off-pump’ in patients who have received clopidogrel may theoretically reduce the incidence of postoperative bleeding. Aprotinin and desmopressin may also reduce postoperative bleeding after clopidogrel administration although concrete evidence is lacking [5]. However, in the case of active, uncontrolled bleeding, it is extremely important to remember that platelet transfusion is the only effective treatment.

References


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