Clopidogrel-related refractory bleeding after coronary artery bypass graft surgery: a rationale for the use of coagulation factor concentrates?


Clopidogrel, an irreversible ADP-receptor antagonist, inhibits platelet aggregation mediated by reduced activation of glycoprotein receptor IIb/IIIa. Clopidogrel in combination with aspirin has been shown to be superior to aspirin alone for treating unstable angina, but clopidogrel recipients have shown increases in blood loss, transfusion requirements, and rate of reoperation after cardiac surgery. We describe a patient who had taken clopidogrel 75 mg daily until the day prior to coronary artery bypass graft surgery. Severe postoperative bleeding developed and was refractory to conventional hemostatic therapy consisting of 19 units of packed red blood cell concentrates, 16 of fresh frozen plasma, 8 of platelet apheresis concentrates plus high-dose treatment with aprotinin (500,000 kallikrein-inhibiting units/h) and administration of 0.3 microg/kg 1-deamino-8-D-arginine vasopressin (DDAVP). Two reoperations were performed, but surgical hemostasis was not achieved, so 100 microg/kg recombinant activated factor VII was applied to generate sufficient thrombin to stop the bleeding. This treatment approach reduced the bleeding. Then, to promote clot formation and firmness, 2 g of fibrinogen and 1250 IU of factor XIII were administered, and the bleeding finally stopped. No further transfusions were required, and the patient was discharged from the hospital on day 10 after the operation. This case suggests that in clopidogrel-related bleeding refractory to conventional hemostatic therapy, hemostasis may be achieved by a stepwise administration of coagulation factor concentrates.


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