Impact of bivalirudin or unfractionated heparin on platelet aggregation in patients pretreated with 600 mg clopidogrel undergoing elective percutaneous coronary intervention.

AIMS: The aim of this study was to assess the impact of bivalirudin or unfractionated heparin (UFH) on platelet aggregation in patients, pretreated with a 600 mg loading dose clopidogrel, undergoing elective percutaneous coronary intervention (PCI). METHODS AND RESULTS: Patients (n = 100) were recruited consecutively in the setting of a double-blind, randomized trial. Bivalirudin or UFH was administered during PCI. Blood was drawn immediately before PCI, following administration of bivalirudin or UFH directly after PCI, and 24 h after PCI. Adenosine diphosphate (ADP)-induced platelet aggregation was assessed with light transmission aggregometry (LTA) and multiple electrode aggregometry (MEA). Before PCI, ADP-induced platelet aggregation was similar in UFH and bivalirudin patients (P = 0.99 for LTA; P = 0.28 for MEA). Administration of bivalirudin during PCI resulted in significant additional suppression of platelet aggregation (P = 0.012 for LTA; P = 0.008 for MEA). Administration of UFH did not have a significant influence on platelet aggregation (P = 0.42 for LTA; P = 0.78 for MEA). Platelet aggregation was again similar in the two groups 24 h after PCI (P> 0.05 for LTA and MEA). CONCLUSION: Bivalirudin, given during PCI in patients pretreated with 600 mg of clopidogrel, is in
contrast to UFH associated with further inhibition of platelet aggregation.