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REVERSAL OF THE ANTI-PLATELET EFFECTS OF ASPIRIN AND CLOPIDOGREL

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¹Chunjian Li, ²John Eikelboom. ¹First Affiliated Hospital of Nanjing Medical University; ²McMaster University, Canada

Objectives Guidelines recommend stopping aspirin and clopidogrel 7–10 days before surgery to allow time for replacement of permanently inhibited platelets by newly released uninhibited platelets. The purpose of this study was to determine the rate of offset of the anti-platelet effects of aspirin and clopidogrel after stopping treatment and the proportion of untreated donor platelets that are required to reverse their anti-platelet effects.

Methods Cohort 1 consisted of 15 healthy subjects who received aspirin 81 mg/d or clopidogrel 75 mg/d for 7 days and underwent serial blood sampling until platelet function testing results normalised. Cohort 2 consisted of 36 healthy subjects who received aspirin 325 mg/d, clopidogrel 75 mg/d, aspirin 81 mg/d plus clopidogrel 75 mg/d or no treatment for 7 days and underwent a single blood sampling.

Results In cohort 1, Arachidonic acid (AA)-induced light transmission aggregation (LTA) returned to baseline levels in all subjects within 4 days of stopping aspirin, coinciding with partial recovery of plasma thromboxane B₂ concentrations. ADP-induced LTA did not return to baseline levels until 10 days after stopping clopidogrel. In cohort 2, AA-induced LTA in patient treated with aspirin reached control levels after mixing with 30% untreated donor platelets whereas ADP-induced LTA in patients treated with clopidogrel reached control levels only after the addition of 90% or more donor platelets.

Conclusions Platelet aggregation recovers within 4 days of stopping aspirin but clopidogrel must be stopped for 10 days to achieve a normal aggregatory response.