

## Adjunct Pharmacology During Percutaneous Transluminal Coronary Intervention

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## Clopidogrel Loading Prior to Coronary Stent Implantation: What Is the Appropriate Dose?

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**Background:** The optimal loading dose of clopidogrel prior to coronary stenting is still undetermined. We compared the degree of platelet inhibition (PI) following administration of 150 mg, 300 mg, and 450 mg of clopidogrel in patients referred for coronary stenting.

**Methods:** Clopidogrel was administered as a loading dose of 150 mg, 300 mg, and 450 mg in 148, 25, and 65 patients, respectively. Blood was collected at various time intervals after loading. Inhibition of ADP-mediated platelet aggregation was measured with the Ichor CBC analyzer (Array Medical, Somerville, New Jersey) utilizing 20  $\mu$ mol of ADP. Patients were divided according to the loading dose received (150 mg, 300 mg, 450 mg) and according to time interval from the drug loading (<3 hours, 3-9 hours, 9-24 hours). Repeated measures ANOVA with Bonferroni multiple comparison test was used to determine whether there was any difference among groups.

**Results:** Patients treated with 150 mg of clopidogrel had significantly lower PI than those receiving 300-mg and 450-mg doses (mean PI  $\pm$  SE:  $8 \pm 1\%$ ,  $24 \pm 3\%$ , and  $26 \pm 2\%$ , respectively,  $p < 0.0001$ ). Patients treated with 450 mg clopidogrel had significantly higher levels of PI in the time window 3-9 hours after loading, with no difference before 3 hours and after 9 hours when comparing the 300-mg dose (see Table).

Dose (mg)	0-3 Hours PI	3-9 Hours PI	9-24 Hours PI
150	0.06	0.08	0.11
300	0.18	0.17*	0.36 (NS)
450	0.10	0.37*	0.31 (NS)

\* $p < 0.05$ .

**Conclusion:** These data show that when clopidogrel is administered as a loading dose prior to coronary intervention, the 450-mg dose should be accepted as the most effective loading dose. The clinical impact of these findings, if validated by randomized trials, should be considered prior to coronary intervention.

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