

ORIGINAL ARTICLE

Intravenous Platelet Blockade with Cangrelor during PCI

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ABSTRACT

BACKGROUND

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Intravenous cangrelor, a rapid-acting, reversible adenosine diphosphate (ADP) receptor antagonist, might reduce ischemic events during percutaneous coronary intervention (PCI).

METHODS

*Investigators in the Cangrelor versus Standard Therapy to Achieve Optimal Management of Platelet Inhibition (CHAMPION) PLATFORM trial are listed in the Supplementary Appendix, available with the full text of this article at NEJM.org.

In this double-blind, placebo-controlled study, we randomly assigned 5362 patients who had not been treated with clopidogrel to receive either cangrelor or placebo at the time of PCI, followed by 600 mg of clopidogrel. The primary end point was a composite of death, myocardial infarction, or ischemia-driven revascularization at 48 hours. Enrollment was stopped when an interim analysis concluded that the trial would be unlikely to show superiority for the primary end point.

RESULTS

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The primary end point occurred in 185 of 2654 patients receiving cangrelor (7.0%) and in 210 of 2641 patients receiving placebo (8.0%) (odds ratio in the cangrelor group, 0.87; 95% confidence interval [CI], 0.71 to 1.07; $P=0.17$) (modified intention-to-treat population adjusted for missing data). In the cangrelor group, as compared with the placebo group, two prespecified secondary end points were significantly reduced at 48 hours: the rate of stent thrombosis, from 0.6% to 0.2% (odds ratio, 0.31; 95% CI, 0.11 to 0.85; $P=0.02$), and the rate of death from any cause, from 0.7% to 0.2% (odds ratio, 0.33; 95% CI, 0.13 to 0.83; $P=0.02$). There was no significant difference in the rate of blood transfusion (1.0% in the cangrelor group and 0.6% in the placebo group, $P=0.13$), though major bleeding on one scale was increased in the cangrelor group, from 3.5% to 5.5% ($P<0.001$), because of more groin hematomas.

CONCLUSIONS

The use of periprocedural cangrelor during PCI was not superior to placebo in reducing the primary end point. The prespecified secondary end points of stent thrombosis and death were lower in the cangrelor group, with no significant increase in the rate of transfusion. Further study of intravenous ADP blockade with cangrelor may be warranted. (ClinicalTrials.gov number, NCT00385138.)

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