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The Safety and Efficacy of Aspirin Discontinuation on a Background of a P2Y12 Inhibitor in Patients after Percutaneous Coronary Intervention:

A Systematic Review and Meta-Analysis

Original Research Article

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2020 Aug 11; 142(6):538-545

DOI: 10.1161/CIRCULATIONAHA.120.046251

Abstract

Background:

Dual antiplatelet therapy with aspirin and a P2Y12 inhibitor has been shown to reduce the risk of major adverse cardiovascular events (MACE) compared with aspirin alone after percutaneous coronary intervention (PCI) or acute coronary syndrome but with increased risk of bleeding. The safety of discontinuing aspirin in favor of P2Y12 inhibitor monotherapy remains disputed.

Methods:

A meta-analysis was conducted from randomized trials (2001-2020) that studied discontinuation of aspirin 1 to 3 months after PCI with continued P2Y12 inhibitor monotherapy compared with traditional dual antiplatelet therapy. Five trials were included; follow-up duration ranged from 12 to 15 months after PCI. Primary bleeding and MACE outcomes were the prespecified definitions in each trial.

Results:

The study population included 32145 patients: 14095 (43.8%) with stable coronary artery disease and 18 046 (56.1%) with acute coronary

syndrome. In the experimental arm, background use of a P2Y12 inhibitor included clopidogrel in 2649 (16.5%) and prasugrel or ticagrelor in 13 408 (83.5%) patients. In total, 820 patients experienced a primary bleeding outcome and 937 experienced MACE. Discontinuation of aspirin therapy 1 to 3 months after PCI significantly reduced the risk of major bleeding by 40% compared with dual antiplatelet therapy (1.97% versus 3.13%; hazard ratio [HR], 0.60 [95% CI, 0.45-0.79]), with no increase observed in the risk of MACE (2.73% versus 3.11%; HR, 0.88 [95% CI, 0.77-1.02]), myocardial infarction (1.08% versus 1.27%; HR, 0.85 [95% CI, 0.69-1.06]), or death (1.25% versus 1.47%; HR, 0.85 [95% CI, 0.70-1.03]). Findings were consistent among patients who underwent PCI for an acute coronary syndrome, in whom discontinuation of aspirin after 1 to 3 months reduced bleeding by 50% (1.78% versus 3.58%; HR, 0.50 [95% CI, 0.41-0.61]) and did not appear to increase the risk of MACE (2.51% versus 2.98%; HR, 0.85 [95% CI, 0.70-1.03]).

Conclusions:

Discontinuation of aspirin with continued P2Y12 inhibitor monotherapy reduces risk of bleeding when stopped 1 to 3 months after PCI. An increased risk of MACE was not observed after discontinuation of aspirin, including in patients with acute coronary syndrome.

Keywords:

Anticoagulants; aspirin; percutaneous coronary intervention; platelet aggregation inhibitor

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2020 Aug 11; 142(6):538-545.

Epub. 2020 Jun 19

PMID: 32551860

DOI: 10.1161/CIRCULATIONAHA.120.046251