Dyspnea and Reversibility Profile of $P2Y_{12}$ Antagonists: Systematic Review of New Antiplatelet Drugs

American Journal of Cardiovascular Drugs volume 14, pages 303–311

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Abstract

Background

Dyspnea has been consecutively reported in some trials evaluating new P2Y12 inhibitors.

Objective

We aimed to review and quantify the global risk of dyspnea of recent P2Y12 inhibitor drugs, and evaluate its association with the reversibility profile of P2Y12 inhibitors.

Methods

A database search (March 2013) retrieved randomized controlled trials (RCTs) comparing new antiplatelet drugs (ticagrelor, prasugrel, cangrelor, elinogrel) with clopidogrel. The primary outcome was the incidence of dyspnea. Placebo-controlled trials were excluded. Meta-analysis was performed and estimates were expressed as risk ratio (RR) and 95 % confidence intervals (95 % CIs). Dyspnea incidence was evaluated according to the reversibility profile of P2Y12 antagonists.

Results

We found eight RCTs including 41,289 patients. Prasugrel was not associated with an increased risk of dyspnea (RR 1.09, 95 % CI 0.93–1.27), whereas ticagrelor (RR 1.95, 95 % CI 1.37–2.77), cangrelor (RR 2.42, 95 % CI 1.36–4.33), and elinogrel (RR 3.25, 95 % CI 1.57–6.72) showed an increased risk of dyspnea. Reversible inhibitors significantly increased the risk of dyspnea compared with the irreversible inhibitor, prasugrel, through adjusted indirect comparison (RR 1.99, 95 % CI 1.40–2.82).

Conclusions

The reversible P2Y12 antagonists ticagrelor, cangrelor, and elinogrel have an increased incidence of dyspnea in increasing order when compared with irreversible P2Y12 inhibitors such as clopidogrel or prasugrel.

Keywords
Percutaneous Coronary Intervention, Clopidogrel, Risk Ratio, Prasugrel, Ticagrelor