Clinical Outcomes Associated With De-Escalation From Ticagrelor to Clopidogrel in Patients With Acute Coronary Syndrome

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BACKGROUND

• Dual antiplatelet therapy (DAPT) with aspirin, plus a P2Y12 receptor inhibitor is the recommended treatment of choice in patients with acute coronary syndromes (ACS), including unstable angina, non-ST segment elevation myocardial infarction, and ST segment elevation myocardial infarction, and for those undergoing percutaneous coronary intervention (PCI) –

• In recent years, ticagrelor has become the only oral P2Y12 receptor inhibitor, largely driven for cancer and bleeding or non-blooding (e.g., myocardial infarction) effects. –

• A comparative analysis was not performed due to the lack of data reported for patients who remained on ticagrelor.

• Analyses pooled groups that switched from ticagrelor to clopidogrel therapy to determine the mean rate of outcomes associated with DAPT.

• Furthermore, information pertinent to specific switching modalities is scarce.

• Results of recently published trials on clinical outcomes associated with switching antiplatelet therapy suggest that de-escalation to clopidogrel may reduce the risk of bleeding complications while maintaining similar effectiveness for ischemic events. However, large prospective studies that directly compare the effects associated with de-escalation are lacking.

AIM

To conduct a systematic literature review to assess the rate of efficacy and safety outcomes following a switch from ticagrelor to clopidogrel in patients with acute coronary syndrome.

METHODS

• A standardized protocol was used to define the eligibility criteria for the search and screening of references using the PubMed (National Library of Medicine, USA), EMBASE (Elsevier, Oxford, UK), Cochrane Library (Wiley, Chichester, UK), and SCOPUS (Elsevier, Amsterdam, Netherlands) databases.

• Efforts were made to identify all articles published in English that described randomized controlled trials (RCT), prospective cohort studies, and retrospective cohort studies that included patients with acute coronary syndromes undergoing percutaneous coronary intervention and had at least 30 patients with a minimum 30 days of follow-up.

• Conference proceedings from the American College of Cardiology, European Society of Cardiology, American Heart Association, and the European Heart Association congresses (2012 onwards) were also reviewed.

• Data extraction was conducted using the Digital Outcome Conversion (DOC) Data version 2.0 software platform (Doctor Evidence, Santa Monica, CA, USA) and its universal electronic extraction form, based on a standardized data configuration protocol.

• All bleeding occurred at a rate of 3.3% and major bleeding at a rate of 1.1%.

RESULTS

• The search in databases and relevant congresses resulted in 1340 potentially relevant references after duplicates were removed. 1284 records were removed during title and abstract screening and an additional 48 based on review of the full text (see Figure 1 for the flow of studies through the review).

• Of nine studies meeting eligibility criteria, six studies (three randomized controlled trials and three observational studies) reporting data for 574 patients, six studies (three randomized controlled trials and three observational studies) were included in meta-analysis. Reporting of cardiovascular mortality was 2.1% (95% CI 0.2-9.3) (Figure 2).

• Results of the meta-analysis showed the rate of MACE was 2.1% (95% CI 0.9-3.3) (Figure 2). The rate of cardiovascular mortality was 1.4% (95% CI 0.2-9.9) (Figure 3) and 2.0% (95% CI 0.3-3.8) for myocardial infarction (Figure 4).

• There were zero cases of stroke reported in 252 patients and one case of stent thrombosis reported in 202 patients who had available data following de-escalation from ticagrelor to clopidogrel.

• The rate of all-cause mortality was 3.1% (95% CI 0.4-5.9) (Figure 5). Rates of bleeding events were 3.3% (95% CI 1.7-4.9) for all bleeding (major and minor) (Figure 6) and 1.1% (95% CI 0.0-3.9) for major bleeding (Figure 7).

LIMITATIONS

• Due to the limited data reported for patients remaining on ticagrelor therapy, a comparison with patients who were switched to clopidogrel could not be performed.

• The consistency of observational and randomized studies in a single analysis pose challenges for determining the cause of observed differences in outcomes. However, the inclusion of observational data may increase the generalizability of our results to real-world patient populations.

CONCLUSION

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REFERENCES


