A meta-analysis on the efficacy of ticagrelor monotherapy after 3 months of dual antiplatelet therapy vs ticagrelor plus aspirin dual therapy on patients with ACS who underwent PCI

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Background: Major adverse cardiovascular events remain the major cause of mortality and morbidity after acute coronary syndrome, including patients who underwent percutaneous coronary intervention. Several studies have shown increased incidence of re-infarction, cardiac death, stroke, stent thrombosis, and all-cause mortality among these patients. The use of dual antiplatelet therapy has been recommended for post-procedural patients, according to guidelines. However, prolonged exposure to dual antiplatelets raised concerns on risk of bleeding. Our study aims to determine whether short term dual antiplatelet therapy followed with Ticagrelor monotherapy will benefit patients who are at higher risk of bleeding.

Objective: To determine the efficacy of Ticagrelor monotherapy after three months of Dual Antiplatelet Therapy versus 12 months of Ticagrelor plus Aspirin dual therapy in the prevention of MACE and bleeding among patients who had ACS and have undergone PCI.

METHODOLOGY

Randomized controlled trials on Ticagrelor monotherapy vs Ticagrelor + Aspirin Dual Therapy with outcomes on myocardial infarction, cardiac death, stroke, stent thrombosis, bleeding, all-cause mortality, were searched through PubMed.

Results: A total of 10,175 participants who had Acute Coronary Syndrome who have undergone Percutaneous Coronary Intervention were included in this analysis. Our results showed that discontinuing Aspirin after 3 months of Dual antiplatelet was not associated with significant increase in the risk of Major Adverse Cardiovascular Events: Myocardial Infarction (RR 0.96 95% CI 0.73-1.25), Cardiac Death (RR 0.92 95% CI 0.74-1.14), Stroke (RR 1.27 95% CI 0.69 -2.31), Stent Thrombosis (RR 0.87, 95% CI 0.48-1.59), Bleeding (RR 0.58, 95% CI 0.49 -0.69) and All Cause Death (RR 0.77, 95% CI 0.52 – 1.41). Discontinuing Aspirin 3 months was associated with lower risk of bleeding (RR 0.58, 95% CI 0.49 - 0.69).

Conclusion: Minimizing the duration of exposure to antiplatelet agents with the use of Ticagrelor monotherapy after three months of DAPT among ACS patients who underwent PCI significantly reduced the incidence of bleeding, particularly among those who are at higher risk of bleeding. There is no significant difference in the risk for myocardial infarction, cardiac-related deaths, stroke, stent thrombosis, and all-cause mortality between the two groups.