TICO: *Is One Year Of DAPT Absolutely Necessary In ACS?*

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Abstract

Physicians often have to face the dilemma of balancing the risk of stent thrombosis versus the risk of major bleeding in patients who have suffered acute coronary syndrome (ACS) within less than one year. The ACC/AHA 2016 Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients With Coronary Artery Disease [1] gives a Class I recommendation of one year of dual antiplatelet therapy (DAPT) after ACS, with a weaker Class IIb recommendation for discontinuation of DAPT after 6 months in patient who are at high risk of bleeding. With the advent of novel antiplatelet agents and newer generation stents, there seemed to be a need to retest the optimal period for DAPT in the setting of ACS. Last year, the TWILIGHT trial presented at TCT 2019 [2] demonstrated that among high risk coronary artery disease patients, discontinuing aspirin after 3 months of DAPT with ticagrelor following percutaneous coronary intervention (PCI) did not increase risk of death/MI/stroke, while lowering rate of bleeding events.

At the Virtual ACC Scientific Sessions in March 2020, the TICO trial [3] further confirmed that ticagrelor monotherapy after 3 months of DAPT was effective at preventing ischemia with a considerably lower rate of bleeding events. The following is a summary of the TICO trial, which compared ticagrelor monotherapy after 3 months of DAPT (ticagrelor mono) with standard DAPT (DAPT) for 12 months after PCI for ACS.

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The TICO Study design:

- Randomized, parallel, open labeled study
- Conducted at 38 Korean centers
- Enrolled 3056 patients who had undergone PCI for ACS
- Patients were followed for 12 months

Inclusion criteria:

- ACS post PCI with sirolimus-eluting stent
  - 29% unstable angina
  - 35% non ST elevation myocardial infarction
  - 36% ST elevation myocardial infarction
- Age > 19 years. Mean age was 61 years
- Females: 21%
- Diabetes: 27%

Exclusion criteria:

- Age > 80 years
- Increased bleeding risk (Need for oral anticoagulants, hepatic dysfunction)
- Current or potential pregnancy
- Bradycardia

Results:

Primary outcomes of net adverse clinical events (NACE): A composite of TIMI major bleed, major adverse cardiac events (death/MI/stent thrombosis) and cerebrovascular events:

3.9% ticagrelor mono; 5.9% DAPT.

Secondary outcomes:

Major bleed: 1.7% ticagrelor mono; 3% DAPT.

Stent thrombosis at 12 months: 0.4% ticagrelor mono; 0.3% in DAPT.

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Discussion:

Among patients with ACS who received sirolimus-eluting stent, ticagrelor monotherapy after 3 months of standard DAPT was as effective at preventing subsequent ischemic events as the standard 12 months of DAPT therapy, with a lower bleeding risk. The TICO trial further confirmed the findings of the TWILIGHT trial that following 3 months of DAPT, aspirin may be safely discontinued without an increase in cardiac events.

Clinical Implication:

DAPT has been associated with a well established increased bleeding risk, which has been variably classified in different clinical trials [4]. However, the major aim of studies has been to balance the risk of stent thrombosis with the risk of bleeding, both of which could lead to fatal events [5]. Guidelines may have been based on older clinical trials involving patients treated with first generation stents and when clopidogrel was predominantly used in DAPT [6]. Based on current trials, it is time to consider revising the guideline recommendations for the duration of DAPT following intervention for ACS.

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KEYWORDS: Acute Coronary Syndrome; Ticagrelor; Bleeding Risk; Thrombosis Risk

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