Guided de-escalation of antiplatelet treatment in patients with acute coronary syndrome and multivessel coronary artery disease: a post-hoc analysis of the TROPICAL-ACS trial

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Topic(s):
Coronary Artery Disease: Pharmacotherapy

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Klinikum der Universität München, Roche Diagnostics, Eli Lilly, and Daiichi Sankyo.

Background: The TROPICAL-ACS trial showed that platelet function testing (PFT) guided de-escalation of P2Y12-inhibitor is a safe alternative treatment strategy in patients with acute coronary syndrome (ACS) undergoing percutaneous coronary intervention (PCI). No specific data are available on the efficacy of this strategy in patients with multivessel coronary artery disease (CAD).

Purpose: To investigate the safety and efficacy of guided de-escalation of P2Y12-inhibitor treatment in patients with multivessel CAD.

Methods: Two-thousand six-hundred-two biomarker-positive ACS patients were 1:1 randomized to either conventional treatment with prasugrel for 12 months (control group) or to a PFT guided de-escalation treatment strategy (guided de-escalation group). The primary endpoint (net clinical benefit) was defined as the composite of cardiovascular mortality (CVM), myocardial infarction (MI), stroke, and clinically overt bleeding (bleeding = grade 2 according to the BARC criteria). The ischemic endpoint was defined as the composite of CVM, MI or stroke. We used log-rank statistics and Cox regression analysis with interaction testing to assess the effect of multivessel CAD on the primary and ischemic endpoints.

Results: Patients with multivessel (n = 709) versus single-vessel CAD (n = 1,901) exhibited a higher risk for the primary endpoint (10.2% vs. 7.6%; HR 1.36; 95% CI 1.02-1.81; p=0.034). Guided de-escalation was non-inferior to conventional treatment for the primary endpoint in both patients with single-vessel CAD (6.7% vs. 8.5%; pnon-inferiority = 0.001; Figure 1A) and multivessel CAD (9.5% vs. 10.9%; pnon-inferiority=0.041; Figure 1B). Moreover, there was no significant interaction in the prognostic value of guided de-escalation between single-vessel and multivessel CAD for both the primary (HR 0.78 [0.56-1.08]; p=0.137 in patients with single-vessel CAD vs. 0.86 [0.54-1.37];p=0.524 in patients with multivessel CAD; pinteraction=0.732) and combined ischemic endpoints (HR 0.80 [0.44-1.45];p=0.456 in patients with single-vessel CAD vs. 0.71 [0.35-1. 46]; p=0.356 in patients with multivessel CAD; pinteraction=0.823).

Conclusion: A guided de-escalation of P2Y12-inhibitor appears to be safe and effective in ACS patients with both single-vessel and multivessel CAD.
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**A.**

Control, single-vessel disease
Guided De-escalation, single-vessel disease

HR 0.79 (95% CI 0.55 - 1.08)

p_{log-rank} = 0.137

p_{interaction} = 0.001

**B.**

Control, multivessel disease
Guided De-escalation, multivessel disease

HR 0.86 (95% CI 0.54 - 1.37)

p_{log-rank} = 0.524

p_{interaction} = 0.041

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