Background: In the HORIZONS-AMI (HZN) trial, among STEMI patients undergoing primary PCI after aspirin and clopidogrel loading, anticoagulation with bivalirudin (BIV) was associated with a dramatic increase in bleeding compared to unfractionated heparin plus glycoprotein IIb/IIIa inhibitor if AMI was absent. Given the marked cost differential between these agents, strategies from HZN such as the use of a prolonged BIV infusion for 2-4 hours post PCI may reduce the rate of acute stent thrombosis compared to an abbreviated procedural-only anticoagulation regimen. Randomized studies are warranted to determine whether these strategies improve clinical outcomes without adversely affecting the safety profile of the currently recommended abbreviated bivalirudin infusion.

Conclusions: Among patients with STEMI undergoing primary PCI with BIV anticoagulation, use of a faster and more potent P2Y12 inhibitor and/or a prolonged BIV infusion may reduce the rate of acute stent thrombosis compared to an abbreviated procedural-only BIV regimen in combination with clopidogrel. Randomized studies are warranted to determine whether these strategies improve clinical outcomes without adversely affecting the safety profile of the currently recommended abbreviated bivalirudin infusion.

TCT-751
Novel oral anticoagulants in patients with acute coronary syndromes: meta-analysis of randomized controlled trials
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Background: Patients with acute coronary syndromes (ACS) remain at significant risk for thrombotic events despite double antiplatelet therapy. The role of oral activated factor X antagonists (anti-Xa) and direct thrombin inhibitors (DTI) are debated in this setting. We aimed to evaluate the safety and efficacy of new-generation oral anticoagulants as compared to placebo in patients receiving antiplatelet therapy after ACS.

Methods: Electronic databases were searched to find prospective, randomized, placebo-controlled clinical trials (RCT) that evaluated the clinical impact of anti-Xa or DTI treatment in patients receiving antiplatelet therapy after ACS. Efficacy measures included overall mortality, stent thrombosis and a composite endpoint of major ischemic events, while TIMI-defined major bleeding events were used as a safety endpoint. No clinical benefit was calculated as a sum of composite ischemic events and major bleeding.

Results: Between January 2000 and December 2011, seven RCTs comprising 31,286 patients were identified. Based on the pooled results, the use of novel oral anticoagulants in addition to antiplatelet therapy was associated with a dramatic increase in bleeding events (OR: 3.03; 95% CI: 2.20-4.16; p<0.000001). Significant, yet moderate reductions in the risk of stent thrombosis and composite ischemic events were observed without a significant effect on mortality. Regarding net clinical benefit, oral anticoagulant treatment provided no advantage over placebo (OR: 0.95; CI: 0.90-1.06; p=0.57).

Conclusions: Anti-Xa and DTI agents are associated with a dramatic increase in major bleeding events that might offset all ischemic benefits in patients receiving antiplatelet therapy after ACS.

TCT-752
Ecarin Clotting Time (ECT) more accurately reflects bivalirudin concentration than Activated Clotting Time (ACT) in patients undergoing Percutaneous Coronary Intervention using bivalirudin anticoagulation
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Background: Bivalirudin is increasingly the anticoagulant of choice for PCI. The degree of anticoagulation with direct thrombin inhibitors (DTI)has been measured with activated clotting time (ACT). This is hampered by the absence of a linear dose response.Ecarin clotting time (ECT) however, has a linear dose response over a wide range of DTI concentrations. We aim to assess the correlation of both ACT and point-of-care ECT assay with bivalirudin concentrations in an elective PCI patient population.

Methods: A multi-center study of 150 patients undergoing elective coronary intervention with bivalirudin anticoagulation was performed.Citrated ECT,ACT and anti-factor IIa activity were measured at baseline,10 minutes after bivalirudin bolus,and at the end of the procedure,producing 450 individual ECT,ACT,and anti factor IIa assays.Correlation and linear regression analysis of both ACT and ECT compared to bivalirudin concentration were performed.

Results: Mean Age 66(+/-11.6) years. Male: Mean eGFR was 88(+/-37.4), 40% of procedures were for unstable angina, 18% were performed for AMI.Median LOS 1 day. 5 bleeding complications occurred.1 acute stent thrombosis occurred.No in-hospital deaths