Conclusions: In this pilot trial, we found that platelet inhibition with clopidogrel was minimal during the period of TH. These results raise concerns regarding the potential risks of stent thrombosis in pts receiving stents and managed with TH.

TCT-737

Relationship between post treatment platelet reactivity and ischemic and bleeding events at one year follow-up in acute coronary syndrome patients receiving prasugrel

Laurent Bonelof,1 Laurence Camoin-jaud,1 Françoise Dignat George2, Gilles Lemesle3, Luc Maillard4, Julien Mancini5, Franch Paganeli6, Michel Pansieri7
1hôpital universitaire nord marseille, marseille, France, 2hôpital conception, marseille, France, 3faculté de médecine, marseille, France, 4hôpital universitaire lille, lille, France, 5clinique axium, aix en provence, France, 6hôpital nord, marseille, France, 7hôpital d’avignon, avignon, France

Background: Post-treatment platelet reactivity (PR) is associated with ischemic and bleeding events in patients receiving P2Y12-ADP receptor antagonists. We aimed to determine the relationship between post-treatment PR after a 60 mg loading dose of prasugrel and one-year thrombotic and bleeding events.

Methods: Patients were prospectively included in this observational multicentre study if they had a successful PCI for an ACS and received prasugrel. VASP index was measured in whole-blood aggregometry, using the Multiplate analyzer® (Dynabyte, Germany) where low response to clopidogrel was defined as Multiplate ADP > 70 units. Patients demonstrating LR were randomized to either 150 mg clopidogrel or 10 mg prasugrel (5 mg for patients > 75 years or < 60 kg).

Results: Of 990 patients screened, 246 (24.9%) exhibited LR to clopidogrel. Of these, 100 (40.5%) were randomized to one of the two regimens (n = 50 in each group); the remaining served as controls. Main reasons for non-inclusion were previous stroke, ongoing anti-coagulant treatment or inability to return for follow-up visit. At 1 month, anti-platelet response was normalized in a total of 67 patients: 37 (75.5%) in the prasugrel group vs 30 (61.2%) in the clopidogrel group (p = 0.123, unadjusted). Overall, prasugrel resulted in a greater decrease in Multiplate ADP values (30.1 ± 21.2 U for prasugrel vs 21.2 ± 22.4 U for clopidogrel (p = 0.046)). There were no bleeding episodes, myocardial infarction, stroke or death during the follow-up.

Conclusions: Tailoring of anti-platelet treatment in patients with prasugrel undergoing non-urgent PCI translates into improved platelet inhibition with both normal-dose prasugrel and double-dose clopidogrel, however with a more pronounced effect with prasugrel.

TCT-739

Effect of Ticagrelor on the Outcomes of Patients With Prior Coronary Artery Bypass Graft Surgery: Insights From The PLATElet inhibition and patient Outcomes (PLATO) trial

Emmanuel Brokakis1, Claes Held2, Bernhard Meier3, Frank Cools4, Marc Clays5, Jan Cornel6, Philip Aylward7, Basil Lewis8, Douglas Weaver9, Gunnar Brandrup-Wognsen10, Susanna Stevens11, Lars Wallentin12, Stefan Jiams13
1VA North Texas Healthcare System and UT Southwestern Medical Center, Dallas, USA, 2Uppsala Clinical Research - Uppsala Universitet, Uppsala, Sweden, 3University Hospital Bern, Bern, Switzerland, 4az klinà, Braunschuetz, Antwerp, 5University Hospital Antwerp, Antwerpen, Belgium, 6Medisch Centrum Alkmaar, Alkmaar, 7Flinders Medical Center, Bedford Park, South Australia, 8Lady Davis Carmel medical center, Haifa, Haifa, 9Henry Ford Heart and Vascular Institute, Detroit, MI, 10AstraZeneca Research and Development, Molndal, Molndal, 11Duke Clinical Research Institute, Durham, NC, 12Professor Cardiology, Uppsala, Sweden, 13Uppsala Clinical Research Center, Uppsala, Sweden

Background: Patients with prior coronary artery bypass graft surgery (CABG) who present with an acute coronary syndrome have high risk for recurrent events. Whether more intense antiplatelet therapy with ticagrelor might be beneficial compared to clopidogrel is unknown. In this substudy of the PLATO trial we studied the effects of randomized treatment dependence on history of CABG.

Methods: Patients participating in PLATO were classified according to whether they had prior CABG. The trial’s primary and secondary end points were compared using Cox proportional hazards regression.

Results: Of the 18,613 study patients, 1,133 (6.5%) had prior CABG, of whom 353 (31%) underwent percutaneous coronary intervention in a saphenous vein graft and 190 (17%) in a native coronary artery. Prior CABG patients had more high-risk characteristics at study entry, experienced more clinical events during follow-up, but had less major bleeding (Table). The primary endpoint (composite of cardiovascular death, myocardial infarction, and stroke) was reduced to a similar extent by ticagrelor among patients with 18.6% vs 21.4%; hazard ratio (HR), 0.89 (0.69, 1.17) and without 9.2% vs 11.0%; HR, 0.84 (0.76, 0.93), Pinteraction = 0.66) prior CABG. Major bleeding was similar with ticagrelor vs. clopidogrel among patients with 8.1% vs 8.7%; HR, 0.93 (0.61, 1.34) and without (11.8% vs 11.4%; HR, 1.04 (0.95, 1.14), Pinteraction = 0.61) prior CABG. Table: Outcomes in patients with and without prior coronary artery bypass graft surgery (CABG).

TCT-738

Thrombocytes And Individualization Of ORAL Antiplatelet Treatment After Percutaneous Coronary Intervention (TAILOR)

Nadia Paarup Dridi1, Pär I. Johansson1, Peter Clemmensen2, Thomas Engstrom1, Maria Radau1, Frants Pedersen1, Henning Kelskaeb3, Kari Sannamaki1, Erik Jorgensen1, Steffen Helgest3, Lene Holmvang4
1Department of Cardiology, Rigshospitalet, Copenhagen, Denmark, 2Department of Transfusion Medicine, Rigshospitalet, Copenhagen, Denmark

Background: Stent thrombosis is a feared complication following stent implantation. The multi-factorial causes include low anti-platelet response (LR) to the routinely used drug, clopidogrel. Newer anti-platelet drugs such as prasugrel and ticagrelor have higher potency with less inter-individual variability in platelet response, however with an increased bleeding risk. We sought to evaluate the safety and anti-platelet effect of double-dose clopidogrel as compared with normal-dose prasugrel in patients with clopidogrel LR undergoing non-urgent PCI.

Methods: "TAILOR" is a randomized, open-label, single-centre trial. All patients pre-treated with clopidogrel and undergoing PCI were screened for clopidogrel LR by whole-blood aggreometry, using the Multiplate analyzer® (Dynabyte, Germany) where low response to clopidogrel was defined as Multiplate ADP > 70 units. Patients demonstrating LR were randomized to either 150 mg clopidogrel or 10 mg prasugrel (5 mg for patients > 75 years or < 60 kg).

Results: Of 990 patients screened, 246 (24.9%) exhibited LR to clopidogrel. Of these, 100 (40.5%) were randomized to one of the two regimens (n = 50 in each group); the remaining served as controls. Main reasons for non-inclusion were previous stroke, ongoing anti-coagulant treatment or inability to return for follow-up visit. At 1 month, anti-platelet response was normalized in a total of 67 patients: 37 (75.5%) in the prasugrel group vs 30 (61.2%) in the clopidogrel group (p = 0.123, unadjusted). Overall, prasugrel resulted in a greater decrease in Multiplate ADP values (30.1 ± 21.2 U for prasugrel vs 21.2 ± 22.4 U for clopidogrel (p = 0.046)). There were no bleeding episodes, myocardial infarction, stroke or death during the follow-up.

Conclusions: Tailoring of anti-platelet treatment in patients with prasugrel undergoing non-urgent PCI translates into improved platelet inhibition with both normal-dose prasugrel and double-dose clopidogrel, however with a more pronounced effect with prasugrel.
TCT-741
Impact of clinical presentation on platelet inhibition by ticagrelor compared to clopidogrel: insights from a single-center cohort of the PLATO trial

Daniel Aradi1, Iván Horváth1, Balint Kitka2, Andras Komócs1
1Heart Institute, University of Pécs, Pécs, Hungary, 2University of Pécs, Pécs, Hungary

Background: In the Platelet Inhibition and Patient Outcomes (PLATO) trial, ticagrelor significantly reduced the risk of thrombotic events compared to clopidogrel in patients with acute coronary syndromes (ACS). We aimed to investigate whether clinical presentation (STEMI vs. NSTE-ACS) has any interaction with platelet inhibition between ticagrelor and clopidogrel.

Methods: In a non-prespecified, single-center, pharmacodynamic analysis of the PLATO randomized, blinded, placebo-controlled trial, platelet inhibition was compared in patients randomized to ticagrelor (n=55) or clopidogrel (n=53) at 24-48 hours of receiving loading doses (LD) and during the maintenance period (>7 days) of treatment. Maximal platelet aggregation (MPA) was measured with light transmission aggregometry using ADP 5 μM. P values for interaction between STEMI and NSTE-ACS were calculated regarding mean MPA and for the odds of high platelet reactivity (HPR, defined as MPA>46%).

Results: In 77(71.3%) patients with STEMI and 31(28.7%) with NSTE-ACS, 94 loading dose phase and 150 maintenance phase measurements were performed. Both after the LD and MD, patients on ticagrelor showed significantly lower MPA values compared to clopidogrel without any interaction between STEMI and NSTE-ACS (p for interaction: 0.33 and 0.28 after LD and MD, respectively; Table 1). In line with these findings, patients randomized to ticagrelor experienced a huge reduction in the odds for HPR regardless of the clinical presentation (p for interaction: 1.00 and 0.30 after LD and MD, respectively; Table 1).

TCT-742
Individual and Regional Variations in Dual Antiplatelet Therapy Dose and Duration in a Large, Randomized International Trial Comparing Two Drug-eluting Stents: Results From PROTECT

Laura Mauri1, Gabriel Steg2, Alexis Matteau3, Pascal Vranckx4, Patrick Serruys5, William O’Neill6, Robert Yeh8, Adrian Kastrati9
1Brigham and Women’s Hospital and Harvard Medical School, Boston, Massachusetts, 2Hospital Bichat, Paris, France, Paris, France, 3Brigham and Women’s Hospital, Boston, MA, 4University Hospital of Geneva, Geneva, Switzerland, 5ThoraxCenter - Erasmus Medical Center, Rotterdam, Netherlands, 6Hartcentre Hasselt, Hasselt, Belgium, 7Leonard M. Miller School of Medicine, Miami, USA, 8Massachusetts General Hospital, Boston, USA, 9Cardiovascular Center Aalst, Aalst, Belgium

Background: There is still uncertainty regarding the optimal dual antiplatelet therapy (DAPT) duration after percutaneous coronary interventions (PCI). We evaluate benefits and risks of extending DAPT after PCI in the drug-eluting stent era.

Methods: We searched electronic databases (Medline, EMBASE, the Cochrane Central Register of Controlled Trials), relevant websites, reference lists, conference abstracts, reviews, chapters in books and proceedings of advisory panels for the US Food and Drug Administration, for randomized controlled trials investigating the clinical impact of extending DAPT duration in patients undergoing PCI. The primary endpoint was all-cause death. The secondary endpoints were myocardial infarction (MI), stent thrombosis (ST), cerebrovascular accidents (CVA) and Thrombolysis in Myocardial Infarction (TIMI) major bleeding.

Results: We included four trials which randomized 8,231 patients (50.2%, extended DAPT duration versus 49.8%, control duration). A total of 1,518 patients (99.1%) were available for final analyses. Median DAPT duration was 16.8 versus 6.2 months for the extended DAPT and control groups, respectively. At follow-up (median 16.8 months) extending DAPT duration did not reduce all-cause death (odds ratio [95% confidence interval] = 1.15 [0.85-1.54], p=0.36), MI (0.95 [0.66-1.36], p=0.77), ST (0.88 [0.43-1.81], p=0.77) or CVA (1.51 [0.92-2.47], p=0.10). Conversely, extended DAPT duration clearly increased the risk of TIMI major bleeding (2.64 [1.31-5.30], p=0.006).

Conclusions: Prior CABG patients represent a high risk cohort for death and recurrent cardiovascular events but have lower risk for major bleeding. A reduction in ischaemic events without increase in major bleeding occurred with ticagrelor vs. clopidogrel in prior CABG patients, similar to the results in non-prior CABG patients.

TCT-740
Clinical impact of extended dual antiplatelet therapy after percutaneous coronary interventions in the drug-eluting stent era: a meta-analysis of randomized trials

Salvatore Cassese1, Robert Byrne1, Tomohisa Tada1, Lamin King1, Adnan Kastrati1
1Deutsches Herzzentrum München, Munich, Munich, Germany

Background: There is still uncertainty regarding the optimal dual antiplatelet therapy (DAPT) duration after percutaneous coronary interventions (PCI). We evaluate benefits and risks of extending DAPT after PCI in the drug-eluting stent era.

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