Researchers study under-recognised and under-treated prothrombotic condition: High platelet reactivity despite treatment

May 6 2013

Within the past decade, the variability in pharmacodynamic response and moderate antiplatelet efficacy of clopidogrel has raised major concerns, in particular because it is associated with an increased risk for ischemic events in PCI patients. Certainly, the public should have detailed knowledge about the incidence of high on-treatment platelet reactivity (HTPR) and its impact on clinical outcomes.

For this reason and to demonstrate how to diagnose and treat this pro-thrombotic condition, Prof. Dr. Kurt Huber, Director, 3rd Dept. Med., Cardiology and Emergency Medicine, Wilhelminen Hospital, Vienna, Austria, and Prof. Dr. Karsten Schör, Director em. Institute of Pharmacology and Clinical Pharmacology, Heinrich-Heine University Düsseldorf, Germany, and their co-authors have written a *Theme Issue* in the journal *Thrombosis and Haemostasis*, addressing various facets of HTPR.

HTPR - affecting non- or low-responders to treatment with P2Y12-receptor inhibitors (such as clopidogrel) - is known to trigger stent-thrombosis, myocardial infarction, ischemic stroke and cardiovascular death. The variability in response could be linked to genetic polymorphisms impacting the activity of the cytochrome P450 enzyme in the liver. Underlying mechanisms seem to include genetic defects and drug interactions (omeprazole and esomeprazole). Yet other agents lead to a lower rate of HTPR than clopidogrel. Therefore,

regulatory agencies and cardiac societies suggest the use of other anti-platelet medications or alternative dosing strategies for clopidogrel in patients with reduced effectiveness to this P2Y12-receptor inhibitor.

The authors of the *Theme Issue* discuss the clinical value of new P2Y12-receptor inhibitors and also try to identify potential candidates who are most likely to benefit from the new agents.

In this *Theme Issue* which is part of the May issue of *Thrombosis and Haemostasis*, several reasons for "high on-treatment platelet reactivity" are reviewed. According to the Guest Editors Huber and Schör, researchers might benefit from the very latest 'state of the art' level of knowledge of pathophysiological pathways and detailed information about the pharmacodynamic and pharmacokinetic mechanisms of old and new P2Y12-receptor antagonists provided by this theme issue. Moreover, the novel diagnostic tests and therapeutic strategies discussed herein might also be interesting to health care providers as they would know which are the best tests to apply, how to direct a more critical use of available platelet function tests to detect HTPR; and to get to know which combination strategies are to be favored at present.

More information: Huber K, Schör K: Theme Issue: High on-treatment platelet reactivity. *Thromb Haemost* 2013; 109: 789-853. nl5.sitepackage.de/link/2227_s … er.de/d0cc651ad99131

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