POINT-OF-CARE ASSESSMENT OF NOAC-INDUCED ANTICOAGULATION: THE NOVEL HAEMONETICS TEG 6S SYSTEM

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 3:45 p.m.-4:30 p.m.

Session Title: New Device Indications and Therapies
Presentation Number: 1149-266

Authors: Paul A. Gurbel, Kevin Bliden, Martin Gesheff, Adina Muresan, Carlos G. Lopez-Espina, Paresh Shah, Eli Cohen, Gabriel Raviv, Marc Doubleday, Fowzia Zaman, Udaya Tantry, Sinai Center for Thrombosis Research, Baltimore, MD, USA, Coramed Technologies, Niles, IL, USA

Background: New oral anticoagulants (NOACs) including direct thrombin inhibitors (DTIs) and Xa inhibitors offer major advantages over vitamin K antagonists. Although officially these agents do not require monitoring, bleeding and ischemic events occur raising concerns for over or under inhibition during NOAC therapy. However, no standardized test is currently available. We evaluated the utility of new point-of-care TEG 6S to quantify anticoagulant effects of NOACs.

Methods: Anticoagulant effect was assessed in healthy volunteers (n=25) on no medications and in patients with non-valvular atrial fibrillation on Xa inhibitors (n=31) and dabigatran (n=14). Blood was collected at various time intervals since the last dosage. Anticoagulant activity was measured using TEG 6S after stimulation with Ecarin (REcarin) and Factor XA (RFXa).

Results: Compared to healthy volunteers, patients on Xa inhibitors had higher RFXa (1.2±2 vs. 4.2±1.8, p<0.001) whereas patients on DTIs had higher REcarin (1.5±2 vs. 3.7±1, p<0.001) and RFXa (1.2±2 vs. 3.5±1.1, p<0.001) levels. Anticoagulant activity of >2.0 min accurately identified patients on DTI and Xa inhibitors with 100% sensitivity and specificity (Figure).

Conclusion: The automated TEG 6S system with its multichannel anticoagulant cartridge is a highly sensitive and specific test to assess the anticoagulant effects of NOACs. Further investigations employing anticoagulation monitoring using this assay are warranted.