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Schött, Ulf; Rundgren, Malin; Engström, M

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PO Box 117
221 00 Lund
+46 46-222 00 00

AN EVALUATION OF MONITORING POSSIBILITIES OF ARGATROBAN USING ROTATIONAL THROMBOELASTOMETRY AND APTT

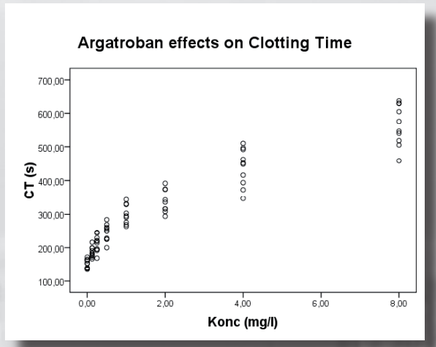
U. Schott*[1,2], M. Rundgren[1], M. Engström[2]
[1]Anesthesia and Intensive Care, University Hospital in Lund, Lund Sweden, [2]Anesthesia and Intensive Care, Halmstad Central Hospital, Halmstad, Sweden

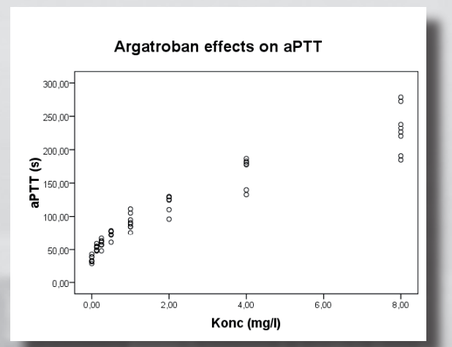
Conclusion
A significant and strong correlation between argatroban concentrations and several ROTATIONAL THROMBOELASTOMETRY (ROTEM®) parameters were found, especially so in the clinically relevant therapeutic range up to 100 s aPTT for patients with heparin induced thrombocytopenia (HIT). Rotational thrombelastometry/ thrombelastography has a potential role to increase the safety of argatroban anticoagulation in critically ill patients, like patients with heparin induced thrombocytopenia (HIT).

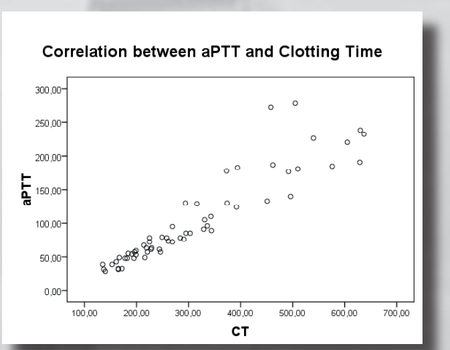
Introduction: The aim of the study was to studyin vitro argatroban anticoagulation with ROTEM® and activated partial thromboplastin time (aPTT).

Method: Argatroban was added in vitro to a series of citrated whole blood samples from 10 healthy volunteers to obtain whole blood concentrations of 0, 0.125, 0.25, 0.5, 1.0, 2.0, 4.0 and 8.0 mg/l. Whole blood aPTT was analysed with a Free Oscillation Rheometer (FOR or ReoRox®, Medirox Sweden) and thromboelastometry ROTEM® (Pentapharm GmbH, Munich Germany).

Results: There was a significant and strong correlation between argatroban concentrations and Clotting Time (CT in ROTEM® analysis with INTEM) ($p<0.0001$ and $r=0.98$). When we studied the correlation between aPTT and CT, we found a highly significant and strong correlation between these two analyses ($p<0.0001$ and $r=0.97$). See figs1-3.







References:
Shore-Lesserson, Evidence based coagulation monitors: heparin monitoring, thromboelastography, and platelet function, Semin Cardiothorac Vasc Anesth 9 (2005), pp. 41–52.

Taketomi T, Szlam F, Vinten-Johansen,J, Levy JH, Tanaka KA. Thrombin-activated thrombelastography for evaluation of thrombin interaction with thrombin inhibitors. Blood Coagulation & Fibrinolysis:Volume 18(8)December 2007p 761-76.

Sucker C, ZotZ B, Görlinger K, Hartmann M. Rotational thrombelastography for bedside monitoring of recombinant hirudin. Acta Anaesthesiol Scand 2008;52: 358-362.

Kouerinis IA, El-Ali M, Theakos N, Dedeillas P. Can thrombelstography predict which patients with heparin-induced thrombocytopenia may suffer thrombotic complications of type II. Eur J Cardio-Thoracic Surg 2007;32: 544-546.