Multi-centre investigation on reference ranges for ROTEM thromboelastometry.

Abstract: Reagent-supported thromboelastometry (TEM) with the ROTEM Whole Blood Haemostasis Analyser is an enhancement of thromboelastography, a method that is increasingly used for the point of care monitoring of acute perioperative bleeding disorders. We investigated the reference ranges of two activated tests (INTEM and EXTEM) and a test analysing specifically the fibrin component of coagulation (FIBTEM) in a multi-centre approach. The reference ranges obtained for the clotting time (CT), clot formation time (CFT), alpha angle (ALP), maximum clot firmness (MCF) and clot lysis parameters were comparable from centre to centre. INTEM: CT equals; 137-246 s, CFT equals; 40-100 s, MCF equals; 52-72 mm. EXTEM: CT equals; 42-74 s, CFT equals; 46-148 s, MCF equals; 49-71 mm. FIBTEM: MCF equals; 9-25 mm. ROTEM whole blood coagulation correlated weakly with a trend towards enhanced coagulation in females compared with males and in advanced age. The repeatability (within-run imprecision) of the results was dependent on the test with the following coefficients of variation: 1-5% (clot firmness, alpha angle), 3-12% (CT, CFT), 6-13% (FIBTEM clot firmness). Citrated blood samples were stable for ROTEM analysis stored within 6 h from drawing. In summary, the data showed that ROTEM thromboelastometry yields consistent values between centres and that
providing general orientating reference ranges seems to be possible.