ABSTRACT FORM ECAT SYMPOSIUM 8 – 9 NOVEMBER 2018

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Title:

Results of ECAT EQA programme on ROTEM/TEG

Abstract:

Thromboelastography is a method of testing the efficiency of blood coagulation. It is a test mainly used in surgery and anesthesiology.

Currently two different type of equipment are mainly used: ROTEM and TEG.

Since 2015 the ECAT Foundation provides an external quality assessment (EQA) programme for ROTEM and TEG.

In EQA we have to compromise between the real life situation, where whole blood is used for the measurement with ROTEM and TEG, and the possibilities of an EQA survey, where only plasma can be used. This implies that in our EQA surveys we only assess performance for the clotting time (CT or R) and maximum thrombus strength (MA or MCF).

Currently there are approximately 120 participants in our programme for ROTEM and TEG.

Since 2015 eight different surveys has been organised with 2 different samples in each survey.

So far each survey included a normal pooled plasma. In addition, abnormal control plasma, mimicking the situation of impaired coagulation, plasma with low Factor XIII levels and plasma with unfractionated heparin have been distributed.

For both ROTEM and TEG increased clotting times and decreased maximum thrombus strength were observed in abnormal control plasmas. For heparinised plasma the clotting times were also increased strongly for both instruments, while the maximum thrombus strength was only slightly decreased. With a plasma with a decreased FXIII level (approx. 20% FXIII) both ROTEM and TEG demonstrated a strongly prolonged clotting time and strongly decreased maximum thrombus strength.

For ROTEM the absolute change in clotting time and maximum thrombus strength may differ between the different types of reagent used. The observed patterns in response are in line with those expected.

The between-laboratory variation for ROTEM may differ between 5% and 15% for a normal control plasma, depending in the type of reagent used. For TEG a higher between laboratory variation is observed (10 – 35%).

For other types of plasma a between-laboratory variation up to 90% is observed.

Although this external quality assessment programme is hampered by the fact that not whole blood but plasma is used, it is a valuable tool for laboratories whether there obtained results fit with the expected values for the type of plasma used. In addition, it gives participants insight in the comparability of test results with other participants.