

Literature Review - Thromboelastography and Thromboelastography Feb 2013

Thromboelastography and thromboelastography (both abbreviated to TE thereafter) are near patient test to analyse the visco- elastic properties of whole blood and produce graphic displays, easily interpreted in operating theatres. These results can demonstrate primary fibrinolysis, secondary fibrinolysis, failure to reverse protamine and whether blood products are required. Easy to follow protocols can be used correlating TE values and traces with clinical circumstances, and suggesting appropriate corrective actions. TE is currently in use in numerous cardiac and transplant surgery operating theatres.

The NHS Scotland Health Technology Assessment undertook a systematic review of TE in 2008 (1). The use of TE was recommended in cardiac surgery and liver transplant surgery, with studies showing that it is a significantly better predictor of postoperative haemorrhage and the need for re-operation than conventional coagulation profiles. Observational evidence was found to support the use of TE in other surgical settings such as vascular surgery, obstetrics and trauma.

A recent Cochrane review (2) found that though there is an absence of evidence that TE improves morbidity or mortality in patients with severe bleeding, the application of a TE guided transfusion strategy seemed to reduce the amount of bleeding.

Reviews and studies in trauma (3-8) show that TE is more sensitive than current modalities for guiding transfusion and can detect coagulopathies at an earlier point during resuscitation. TE has the potential to become a cornerstone for the development of future massive transfusion protocols.

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