**Pearls and Pitfalls**

**Beyond Platelet Counts: TEG 2010**

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**Objectives:** Upon completion of this presentation, participants will be able to describe the clinical use in obstetric anesthesia of the thromboelastogram (TEG), its indications, advantages, and parameters (R, RK, α angle, MA, MA 60).

**Summary:** There is limited published data regarding the provision and safety of neuraxial techniques in patients with common bleeding disorders. The minimum safe factor levels and platelet count for neuraxial techniques remain undefined in both the obstetric and general populations, and evidence based recommendations for common bleeding disorders such as in hemophilia, vWD, and ITP are not available.

The use of the thromboelastogram (TEG) was first reported by Hartert in 1948. Unlike laboratory tests of coagulation which are measured in plasma, the TEG is a rapid bedside monitoring test that examines coagulation in whole blood and therefore, the interaction between platelets, the coagulation cascade and fibrinogen. Tests of coagulation such as the platelet count, activated partial thromboplastin time, prothrombin time, and bleeding time measures separate components of the coagulation process, and may not accurately predict whether a patient is at risk for clinical bleeding. The usefulness of TEG, compared with standard laboratory tests of coagulation, has been described during general surgery, cardiopulmonary bypass, urology, obstetrics, pediatrics, and liver transplantation. In normal pregnancy, TEG changes are similar to normal values and are consistent with the hypercoagulable state of pregnancy. In obstetrics, TEG changes have been described in patients with severe preeclampsia, reduced platelet count, and increased aspartate aminotransferase (AST) concentrations.

Anesthesiologists are reluctant to perform an epidural block in patients with platelet counts less than 100,000 although a limit of 80,000 has been recommended. The TEG variables (k time and maximum amplitude [MA]) have been shown to have a strong correlation with platelet count and hence adequate hemostasis in obstetric anesthesia.

In conclusion, TEG assesses hemostasis easily and rapidly in the delivery suite, is a useful screening device, and provides further information on overall clot formation in patients with reduced platelet counts or those at risk from platelet dysfunction.

**Key Points:**

1. TEG enables global assessment of hemostatic function.
2. TEG measures clotting in whole blood and the interaction between fibrinogen, platelets and the coagulation cascade.

**Key References:**