The Obstetric Patient on Enoxaparin: Thromboelastography Does Not Differentiate Between Therapeutic and Subtherapeutic Anti Xa Levels

Abstract Type: Case Report/Case Series
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The incidence of neuraxial hematoma in patients treated with low molecular weight heparins (LMWHs) may be as high as 1 in 3,000 (1), yet our current guidelines for safe neuraxial technique in these patients remain limited. Current recommendations are to wait 10-12 hours after prophylactic dose LMWH and 24 hours after therapeutic dose LMWH, and recommend against checking anti Xa levels (1). Recent acknowledgement that obstetric patients are often sub-therapeutic on LMWH therapy has resulted in higher dosing among pregnant women (2). TEG has been used to demonstrate heparin activity even 24 hours after LMWH therapy (3). We present a case in which thromboelastography (TEG) was used to assess coagulation status in a patient on recent enoxaparin therapy.

Case Report: A 44-year-old G2P1 woman, 5'8" tall, weighing 234 pounds and 37 1/7 weeks pregnant, presented 2 days prior to an elective cesarean delivery for in-house management of anticoagulation. Her medical history was significant for Factor V Leiden, DVT/PE in 2007 while on clomiphene, and DVT in 2009 while pregnant despite therapy with enoxaparin 80 mg sc QD. During the current pregnancy she was started on enoxaparin and the dose was titrated to 120mg sc BID with therapeutic anti Xa levels. Past medical and surgical history were otherwise noncontributory. Allergies included sulfa and erythromycin.

There was lack of consensus among obstetric anesthesia providers regarding the required time off enoxaparin prior to safe neuraxial placement in this patient. To assess her bleeding risk, routine coagulation tests as well as TEG was performed at two time points prior to her surgery.

With normal coagulation tests and TEG, the patient underwent spinal anesthesia for an uneventful cesarean delivery. There were no bleeding complications.

Results are shown in table 1. TEG parameters did not correlate with time off enoxaparin or anti Xa levels.

Conclusion: In this case, TEG was not sensitive to detect coagulation changes in a patient who was on enoxaparin therapy with therapeutic anti Xa levels, compared to a later time point when anti Xa levels were sub-therapeutic. The TEG values in this patient were within normal limits at both time points. Clinical judgment in conjunction with existing ASRA guidelines may be adequate to assess patient risk in these situations.

1. Horlocker TT, RAPM 2010 35(1):64
2. Friedrich E, J Perinatol 2010 30(4)

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<th>Time off enoxaparin (h)</th>
<th>anti Xa (U/mL)</th>
<th>INRPT(s)</th>
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