

TEG demonstrates that tinzaparin 4500 units has no detectable anticoagulant activity after caesarean section

**S. Griffiths, C. Woo, V. Mansoubi, A. Riccoboni, A. Sabharwal, S. Napier,
M. Columb^{*}, M. Laffan[†], G. Stocks**

Department of Anaesthesia, Queen Charlotte's & Chelsea Hospital, London

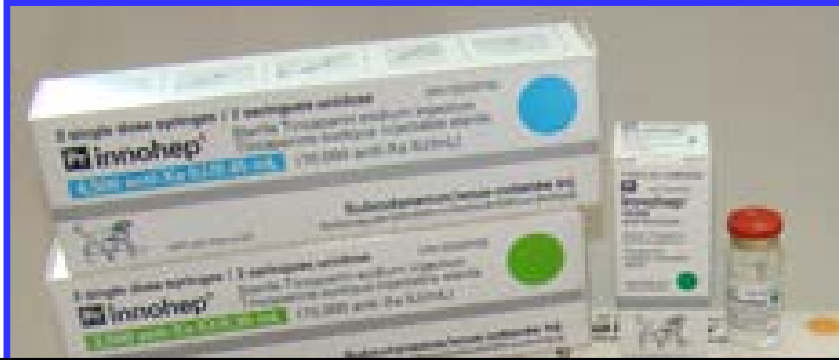
^{*}Department of Anaesthesia, University Hospital of South Manchester

[†]Department of Haematology, Imperial College Healthcare NHS Trust

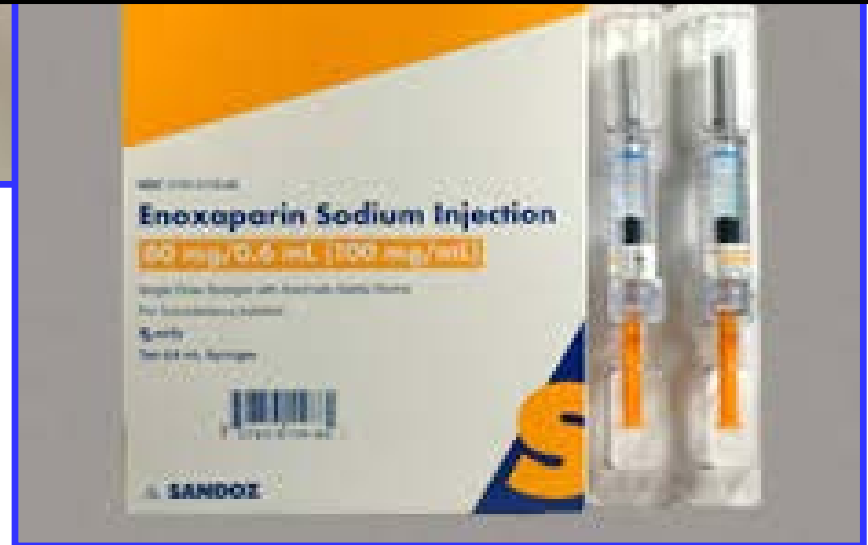
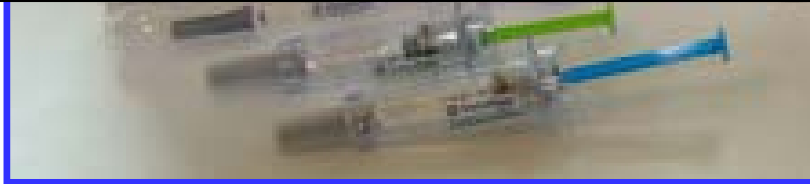
Background



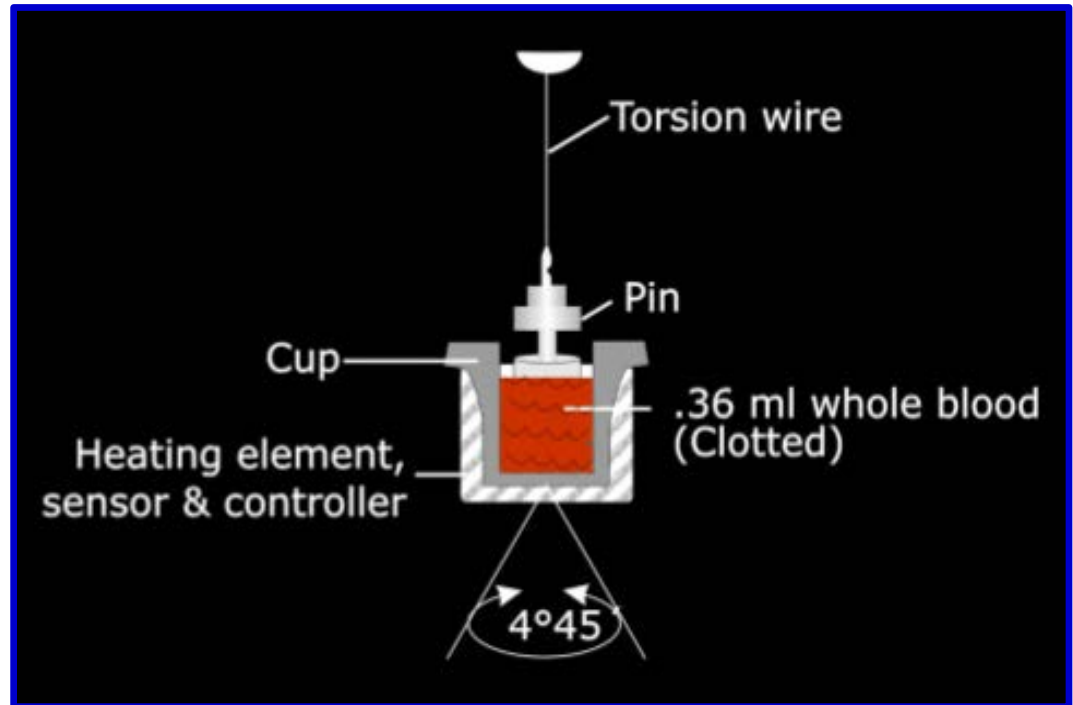
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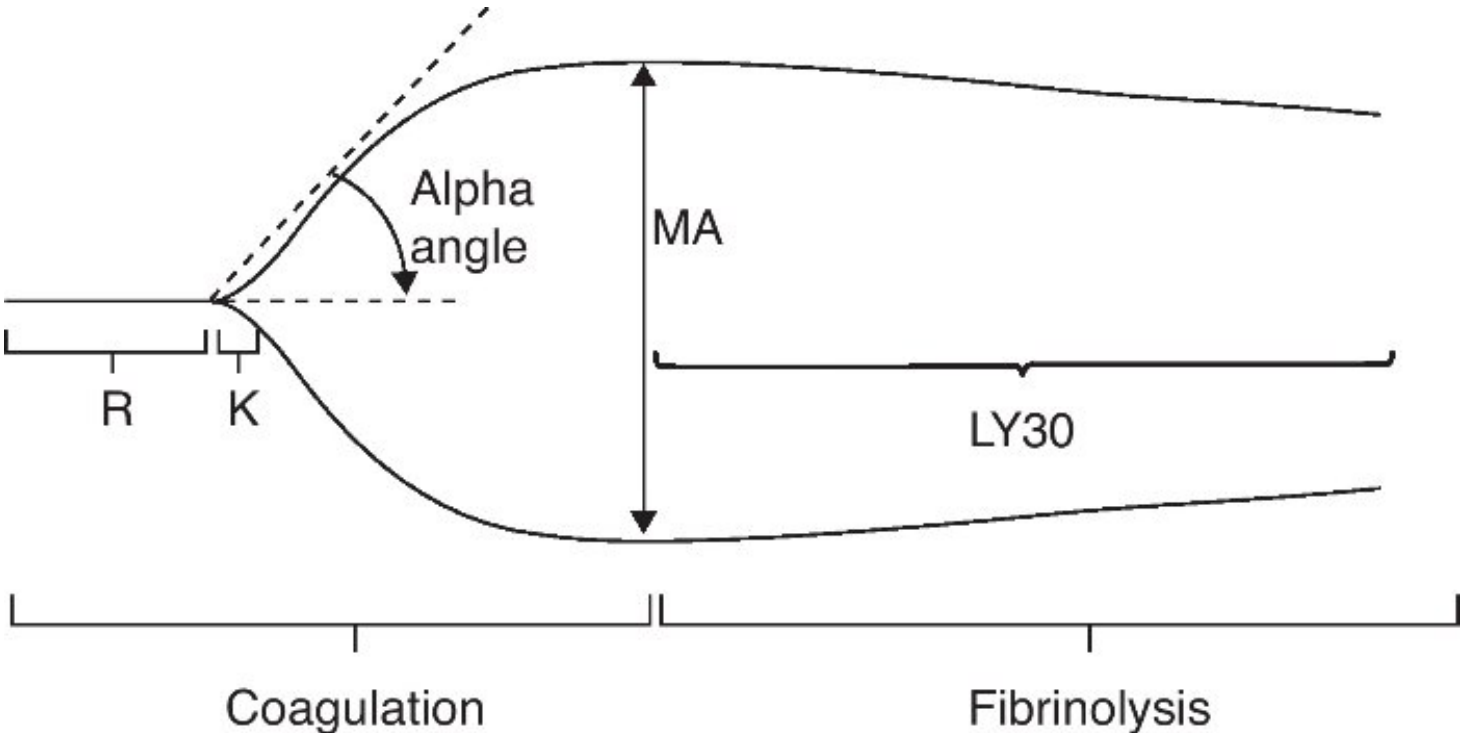
“Neuraxial blockade should not be performed until 10-12 hours after a thromboprophylactic dose of low molecular weight heparin”



Background

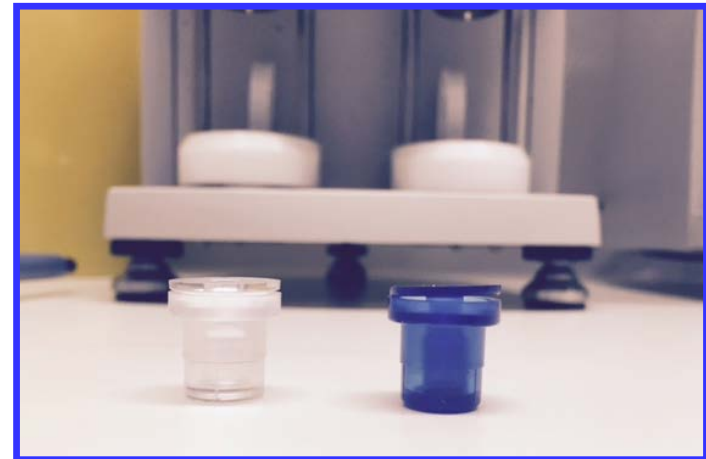


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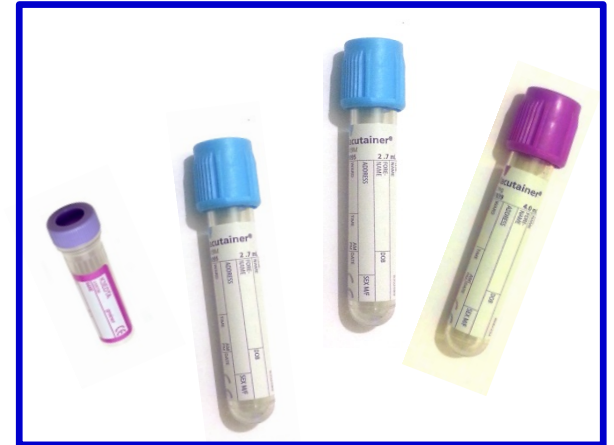


Hypotheses

- 1. TEG will detect the effect of a thromboprophylactic dose of tinzaparin**
- 2. Peak effect on r time prolongation will occur at 4 hours post dose**
- 3. Tinzaparin will no longer be detected by TEG at 10 hours post dose**



Methods



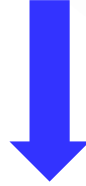
**Blood sampling pre-dose & at
4, 8 & 10 hrs post tinzaparin**



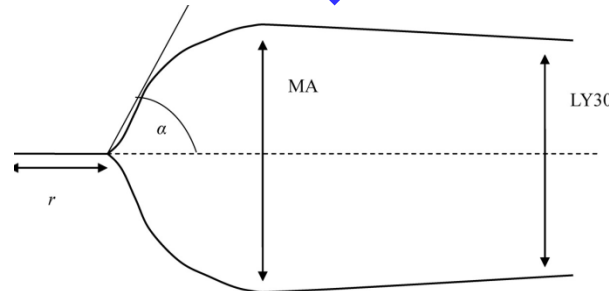
Methods



**Kaolin activated
sample inverted 5 x**

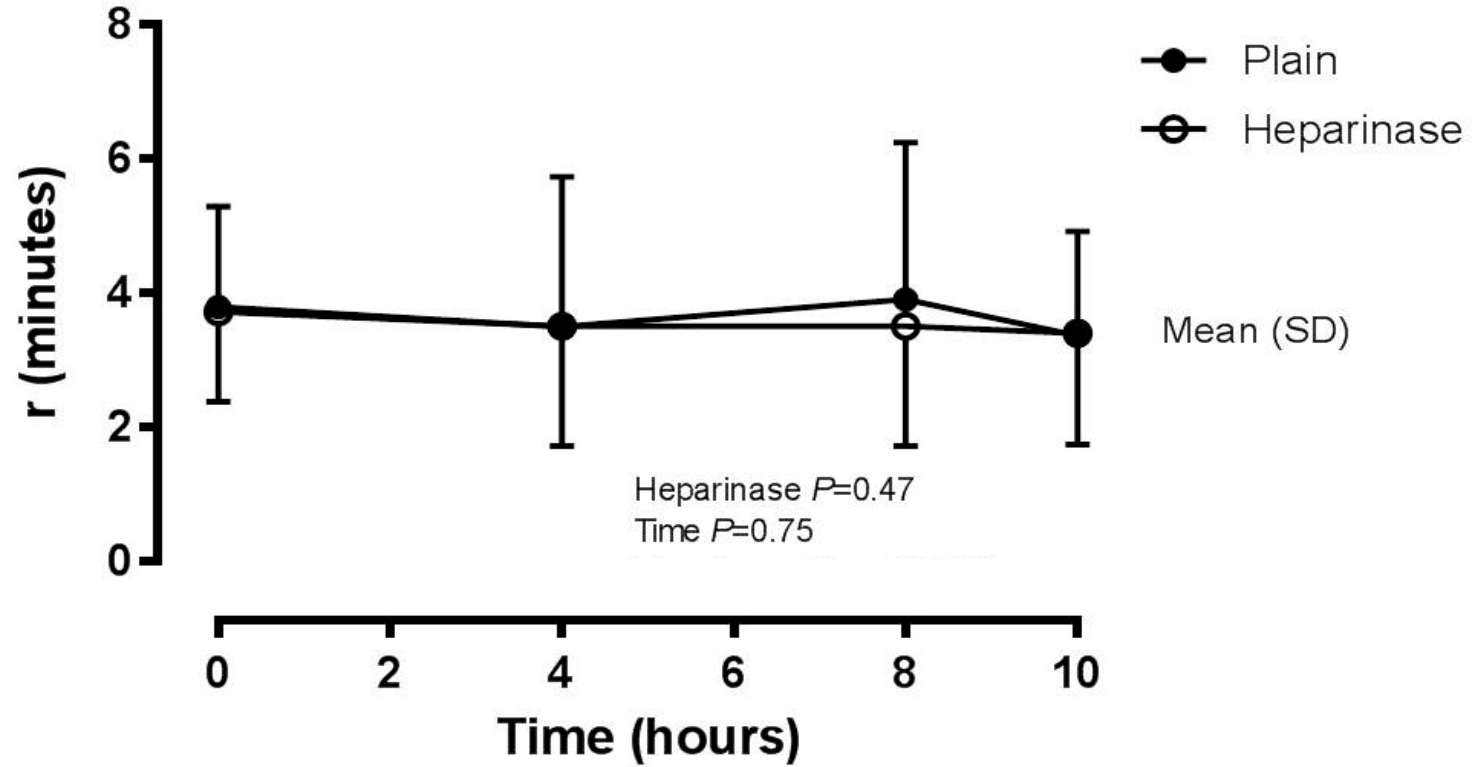


**Paired plain & heparinase
samples pre-dose &
at 4, 8 & 10 hrs post
tinzaparin**

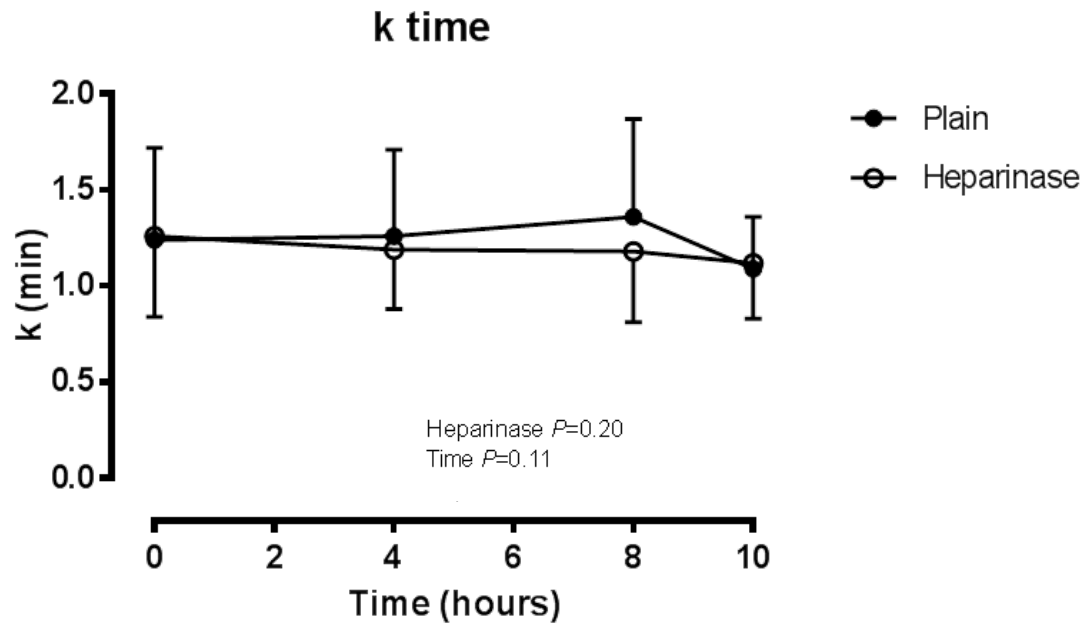
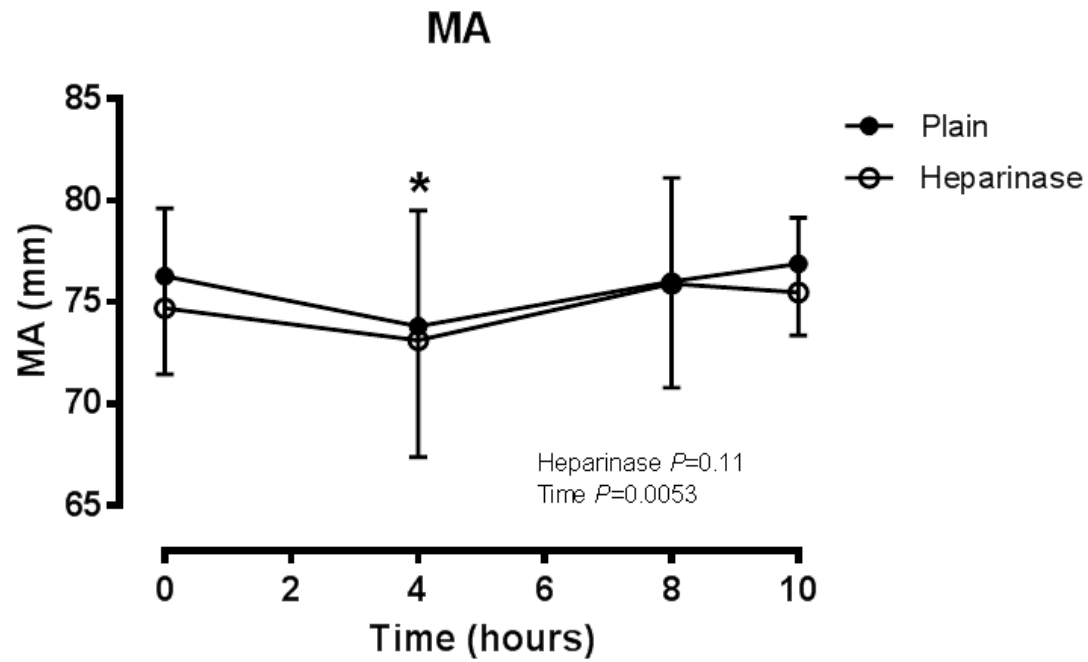


**Standard TEG
values recorded**

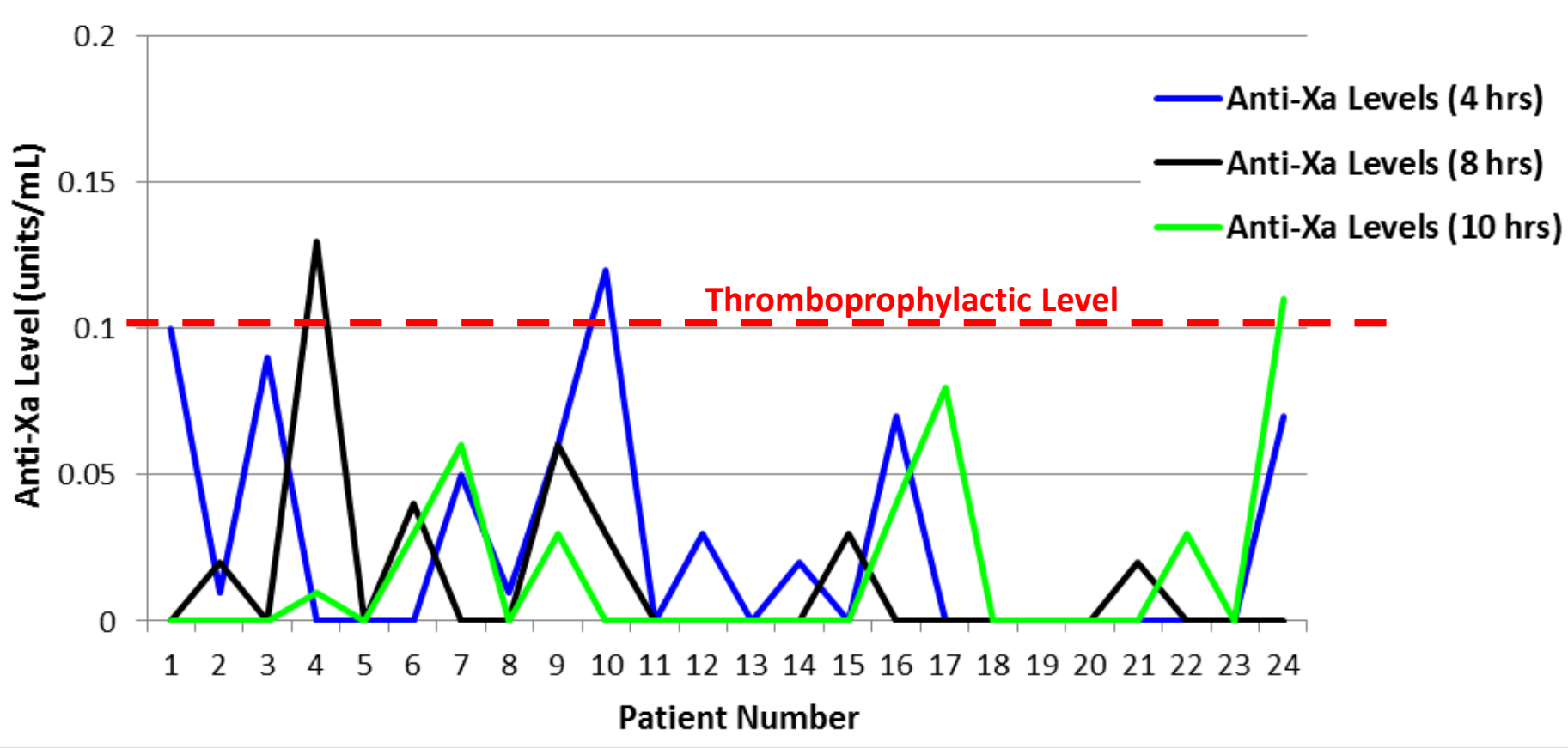
Results



Results



Results



Conclusions

1. TEG did not detect the effect of tinzaparin on anticoagulation at any time point

and ...

2. Tinzaparin was also not detectable in this group of patients by anti-Xa assay

Macafee B, Campbell JP, Ashpole K, Cox M, Matthey F, Acton L, Yentis SM

Reference ranges for thromboelastography (TEG) and traditional coagulation tests in term parturients undergoing caesarean section under spinal anaesthesia

***Anaesthesia* 2012; 67: 741-747**

Why?

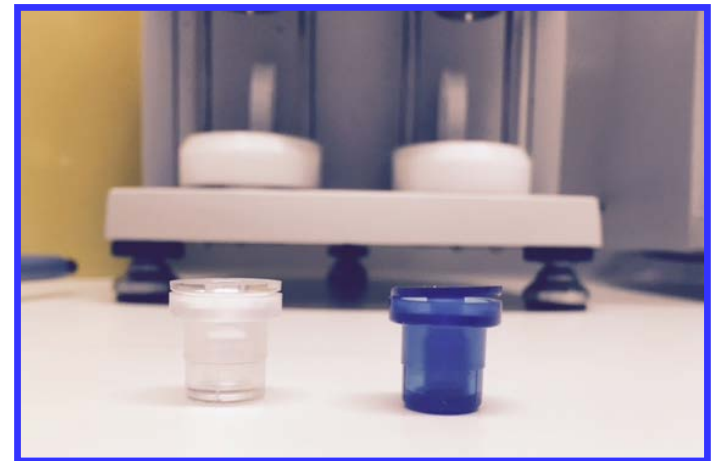
- Difference in anti-Xa activity between different types of low molecular weight heparin

Product	Xa: IIa ratio	Mol. Wt.
Heparin		11,400
Ardeparin	1.9: 1	6000
Dalteparin	2.7: 1	5819
Enoxaparin	3.8: 1	4371
Nadroparin	3.6: 1	4855
Reviparin	3.5: 1	4653
Tinzaparin	1.9: 1	4500

Why?

- **TEG not sensitive enough to detect a tinzaparin effect**
- unlikely

- **Under dosing of tinzaparin for this population**



Summary

- **Tinzaparin 4500 units has no detectable effect on anticoagulant activity after caesarean section as assessed by TEG or anti-Xa levels**
- **These findings support consensus guidelines which state that it is acceptable to perform neuraxial block insertion at 10-12 hrs post thromboprophylactic tinzaparin**