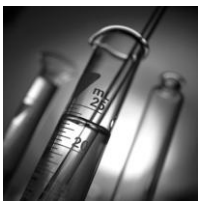
pathlab



December 2011

Change of APTT Therapeutic Range for IV Heparin

Introduction:

The APTT is routinely used to monitor and adjust dosage of IV UFH heparin infusion.

The performance of the APTT test is highly dependent on the reagent and laboratory method used, so published protocols have to be verified with the locally used reagent and method [1,2].

Every batch of reagent has to be evaluated and an APTT range set for heparin monitoring[3].

Current situation:

We are due to change a batch of APTT reagent. (routine annual occurrence.) During our evaluation of the new batch of reagent, a significant difference in performance has been identified. The new reagent is less sensitive to heparin. (Detailed information is available on request). This has prompted us to review the protocols that are being used. At some hospital sites, ranges have been adopted which are based on published guidelines and do not take into account currently used reagents and methods. We recommend that the protocols are changed, as the new reagent is significantly less sensitive to heparin and may lead to over-dosage with the currently used protocols.

Recommendation:

- **The change of APTT range is incorporated in to the heparin dosing protocol which will happen Mid January 2012, when the previous batch runs out.**

1. We also Recommend the adoption of a weight based Heparin dosing protocol, utilising locally derived information:

	Weight Based heparin nomogram			
APTT Ratio	APTT (Actin FSL)	Dose Change Units/kg/hr	Additional action	Next APTT
< 1.2	< 35 (1.2 x mean normal)	4	Rebolus with 80 IU/kg	6
1.2 - 1.5	36 to 41 (1.2 to 1.5 x mean normal)	2	Rebolus with 40 IU/kg	6
1.6 - 2.3	42 to 62 (1.5 to 2.3 x mean normal)	0	------	6 §
2.4 - 3.0	63 to 80 (2.3 to 3.0 x mean normal)	-2	------	6
> 3.0	> 80 (> 3 x mean normal)	-3	Stop infusion 1 hour	6

http://www.globalrph.com/heparin.htm

*Initial dosing: loading, 80 IU/kg; maintenance infusion: 18 IU/kg/h (APTT in 6 hours).

§Repeat APTT every 6 h during the first 24 h; thereafter, monitor APTT once every morning, unless it is outside therapeutic range.

Summary:

APTT significant reduced sensitivity to heparin, especially at supra-therapeutic levels.

Protocols used to dose adjust IV UFH heparin MUST be reviewed /amended ASAP

If you have any comments or queries in relation to the above, please contact:

Dr Stephen May, Consultant Haematologist

Alan Neal, Charge Scientist Haematology.

CLINICAL UPDATE

References:

1. Parental Anticoagulants: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). Chest 2008; 133; 141s-159s. **http://chestjournal.chestpubs.org/content/133/6_suppl/141S.full.pdf+html**

2. Heparin and Low-Molecular weight heparin: The seventh ACCP conference on Antithrombotic and Thrombolytic therapy. Chest 2004; 126; 188s-203s. http://chestjournal.chestpubs.org/content/126/3_suppl/188S.full.pdf

3. Information from Dade Behring (Siemens) – APTT reagent manufacturer