

## Critical Care VTE prophylaxis protocol

**Indications: All patients on the unit EXCEPT NEURO PATIENTS- SEE BOX BELOW**

- In critical care use subcutaneous dalteparin for VTE prophylaxis at doses below.
- All patients should have a LMW (low molecular weight) Heparin level measured after 7 days if CrCl <30mls/min.
- All patients should have a LMW Heparin level after 3 days if they are in both extreme range of weight and have renal impairment (CrCl<10 or requiring CVVHD renal replacement therapy). See table and groups highlighted in red.
- All patients with CrCl<30mls/min requiring an invasive procedure/intervention e.g. biopsy/surgery: withhold s/c dalteparin the evening before the procedure, and take a “trough” LMW Heparin level to ensure there is no accumulation (level should be less than 0.1 antiXa units/ml).
- To check an anti Xa level see guidance below.
- For patients with CrCl <30 mls/min who may require surgery within 24 hours (elective or emergency), use unfractionated heparin 5000units sc twice daily. Includes all Transplant patients in the first 24hours. Discuss with relevant specialties thereafter.

### Guidance on LMWH-Heparin (anti-factor Xa) monitoring for *prophylactic* doses of LMWH

- Order as “LMW Heparin assay” on TRAK (search for “heparin” and you will get 5 choices – choose “LMW Heparin assay”; automated test done at RIE site, available 24 hours a day, please inform haematology laboratory staff if request is urgent; courier to RIE lab if at other sites
- Use a green-top citrated tube; ensure sample is filled to the “level” marked on the side of the tube as the lab cannot assay the sample if underfilled.
- Level must be checked 3-4 hours post administration of the dose of LMWH.
- Target “peak” range is 0.1-0.4 units/ml.
- Check a one-off level and thereafter as required.

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## Critical Care Guidelines

### Pharmacological thromboprophylaxis

CrCl mls/min	<50kg	50-100kg	100-150kg	>150kg
>30	2500 units daily	5000 units daily	5000 units twice daily	7500 units twice daily
10-30	*2500 units daily (with caution)	**5000 units daily	**5000 units twice daily	*7500 units twice daily
<10 or CVVHD	*2500 units daily (with caution)	**5000 units daily	**5000 units daily	*7500 units daily

\*Check anti-Xa level after 3 days in extreme range of weight and renal impairment

\*\*For these groups check at 7 days

### Enhanced Pharmacological thromboprophylaxis for Covid 19 (+)ve patients

CrCl mls/min	<50kg	50-100kg	100-150kg	>150kg
>30	2500 units twice daily	5000 units twice daily	7500 units twice daily	10,000 units twice daily
10-30	2500 units twice daily (with caution)	5000 units twice daily	7500 units twice daily	10,000 units twice daily
<10 or CVVHD	2500 units once daily (with caution)	5000 units once daily	7500 units once daily	10,000 units once daily

Check anti-Xa levels, 3-4 hours after 1<sup>st</sup> dose and discuss with Haematology.

Note Covid-19 patients on CVVHD might require full anticoagulation with unfractionated heparin.

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### Cautions and contraindications:

- potentially bleeding lesions (e.g. varices, active peptic ulcer in last 3 months)
- advanced liver disease
- severe uncontrolled arterial hypertension
- uncorrected bleeding disorders (e.g. haemophilias)
- active bleeding of any sort
- platelet count  $<50 \times 10^9/L$  \* **for Covid -19 (+)ve patients PLT count  $<30 \times 10^9/L$**
- acquired coagulopathy i.e. APTT  $\geq 1.5$  or INR  $\geq 1.5$
- previous history of HIT

### Mechanical thromboprophylaxis

1. All patients will wear graduated elastic compression stockings (TEDS).
2. Intermittent pneumatic compression devices (IPCD) should be used if pharmacological prophylaxis contraindicated.

### Mechanical thromboprophylaxis should NOT be used if patients have any of the following:

- a stroke where IPCD should be used alone
- massive leg oedema
- severe peripheral artery disease
- severe peripheral neuropathy
- major leg deformity
- dermatitis
- an existing DVT in a leg

### NEURO PATIENTS-mechanical thromboprophylaxis as above.

**Subarachnoid haemorrhage:** once aneurysm is secured (e.g. coiled or clipped), dalteparin as above.

**Intracerebral haemorrhage:** use of pharmacological thromboprophylaxis should be discussed with the referring neurosurgeon initially and at 14 days.

**Traumatic head injury:** should not receive pharmacological thromboprophylaxis initially. Dalteparin should be discussed with neurosurgeons 10-12 days post injury.

**Elective neurosurgery:** All patients should receive dalteparin.

**Spinal cord injury:** All patients should receive dalteparin unless incomplete SCI associated with suspected or proven spinal haematoma.

**Haemorrhagic stroke:** Use of aspirin and heparin should be discussed with the stroke team initially and at 14 days.

**Cerebral infarction:** If no thrombolysis given, aspirin 300mg should be considered immediately, then continued (300mg daily) for 2 weeks. If thrombolysis has been given, withhold aspirin for 24 hours. Discuss dalteparin with stroke team at 24 hours post event for all stroke patients.

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## References

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