Prevention of thrombosis in COVID-19 +ve‡ adult inpatients not receiving renal replacement therapy (RRT) on Critical Care Wards‡‡

NHS Greater Glasgow and Clyde

‡Patients are classified as COVID-19 +ve if they have clinical features of COVID-19 infection and/or test positive for COVID-19

‡‡Includes COVID-19 +ve inpatients in Critical Care wards (High Dependency or Intensive Care)

- There is anecdotal and post mortem evidence that patients who are COVID +ve are at increased risk of venous thrombosis, particularly those who are most unwell
- It is possible that standard prophylactic doses of LMWH are less effective in COVID +ve patients
- Increasing the frequency +/- duration of prophylactic doses of LMWH may reduce the risk of venous thrombosis
- Clinicians involved in the development of this guideline have thoroughly considered the pros and cons of moving away from standard thromboprophylaxis doses

Recommendation

- **Prescribe enoxaparin SC 40mg twice daily*** for every COVID +ve inpatient on Critical Care who has no contraindications. Please note dose adjustments and monitoring requirements below.

- ***Dose adjustments** (CrCl calculator available here)
  - Reduce enoxaparin dose to SC 20mg twice daily if CrCl 15-29ml/min or weight <50kg
  - Increase enoxaparin dose to SC 60mg twice daily if weight >120kg (see below for additional monitoring if CrCl <30 ml/min)
  - Change to unfractionated heparin (UFH) SC 5000 units twice daily if CrCl <15ml/min *[recommended preparation: heparin sodium 5000 units in 0.2mL ampoules]*
  - For pregnant women weighing >90kg, specialist advice should be sought from obstetrics/haematology

- **Monitoring requirements**
  AntiXa monitoring is recommended in the following patient groups:
  - **CrCl <30 ml/min:** check antiXa 4 hours post dose after 10 doses
  - **Weight <50kg:** check antiXa 4 hours post dose after 10 doses
  - **Weight >120kg:** check antiXa 4 hours post dose after 3 doses, repeat after 10 doses if CrCl <30ml/min

  Target antiXa: 0.1-0.4 units/ml. If out with target, please seek advice from consultant haematologist.

- **Contraindications against thromboprophylaxis with UFH or LMWH**
  - Platelet count ≤ 50 $x10^9$/l
  - Receiving anticoagulation for another reason
  - Patient considered to be at high bleeding risk e.g. recent intracranial haemorrhage, untreated inherited/acquired bleeding disorders
  - Trauma with high bleeding risk
  - Active bleeding
  - Heparin induced thrombocytopaenia – see details in page 2
  - Acute stroke (use IPC if immobile & contact stroke team for guidance)
  - Within 12 hours of procedures e.g. surgery, lumbar puncture
  - Acute bacterial endocarditis
  - Persistent hypertension (BP ≥230/120)
  - Liver failure and INR>2

Patients with contraindication for thromboprophylaxis should be considered for mechanical thromboprophylaxis with intermittent pneumatic compression (IPC).

When clinical condition improves and patient is moved to a downstream ward, standard prophylactic LMWH should be prescribed until discharge as per COVID Thromboprophylaxis Guideline.

Remember

- Patients with COVID-19 can develop abnormal coagulation and thrombocytopaenia **BUT** this is not common, and bleeding symptoms are rare
- Prolonged PT, APTT and TCT are not a contraindication to administering thromboprophylaxis as long as fibrinogen is ≥1.0 (this is measured automatically by the lab if TCT ≥18secs)

Heparin induced thrombocytopaenia

If platelet count falls by more than 50% baseline, or there are any other indications to suggest the development of Heparin induced thrombocytopaenia (HIT), calculate HIT score (using this link) and discuss urgently with consultant haematologist.

PLEASE BE AWARE:

There is currently limited evidence to inform best practice in thromboprophylaxis in COVID 19 patients. Enoxaparin dosing recommendations included in this guideline are off label. Critical care areas using this guideline are requested to monitor major bleeding events[1] and thrombotic events to allow for an ongoing evaluation of the recommendation within this guideline.

[1] Major bleeding is defined by ISTH as:

a. Fatal bleeding, and/or
b. Symptomatic bleeding in a critical area or organ, such as intracranial, intraspinal, intraocular, retroperitoneal, intraarticular or pericardial, or intramuscular with compartment syndrome, and/or
c. Bleeding causing a fall in hemoglobin level of 20 g L)1 (1.24 mmol L)1) or more, or leading to transfusion of two or more units of whole blood or red cells.