Thromboprophylaxis Guidelines for Adult Patients hospitalised with confirmed or suspected COVID-19 infection

(Version 1)

- Patients are at **high risk** for VTE[1] as they have:
  1. Acute infection/inflammatory disorder
  2. Immobility expected for at least 3 days
- They require pharmacological thromboprophylaxis unless they have a risk factor for bleeding:
  1. Active bleeding
  2. Platelets <50
  3. Acquired bleeding disorder (e.g. liver disease)
  4. Untreated Inherited bleeding disorder (e.g. haemophilia/von Willebrand Disease)
  5. Lumbar puncture/epidural/spinal anaesthesia expected within the next 12 hours, or epidural catheter removed within last 4 hours
  6. Acute stroke
  7. Uncontrolled systolic hypertension (230/120 mmHg or higher)

If no contraindication to pharmacological thromboprophylaxis, prescribe Tinzaparin as outlined in this table.

Actual body weight (kg)	Tinzaparin [2]	Anti-Xa monitoring
Creatinine clearance >20ml/min		No need for anti-Xa monitoring
<50 kg	3500 units OD	
50-90 kg	4500 units OD	
91-130 kg	8000 units OD	
131-170 kg	12000 units OD	
>170 kg	75 units/kg OD	
Creatinine clearance <20ml/min[3,4]		Check anti-Xa level after 3-5 days to ensure not accumulating. Sample needs to be taken 4 hours post dose. Please perform **Monday-Friday**. Liaise with Coagulation laboratory prior to sending. Anti-Xa target 0.2-0.5IU/ml[2]
<50 kg	2500 units OD	
50-90 kg	3500 units OD	
91-130 kg	4500 units OD	
131-170 kg	8000 units OD	
>170 kg	12000 units OD	

Current Anticoagulation

If a patient is **already on** anticoagulation:

1. Atrial fibrillation or VTE >90days ago – no change in anticoagulation strategy
2. VTE <90 days ago – change to Tinzaparin 175units/kg OD

Mechanical Thromboprophylaxis

1. If no contraindications, patients should wear graduated compression stockings
2. Completely immobilised patients would benefit from intermittent pneumatic compression in addition to pharmacological thromboprophylaxis

Note

- Patients with COVID-19 can develop abnormal coagulation but bleeding is rare. Prolongation of PT/APTT is not a contraindication to thromboprophylaxis as long as fibrinogen ≥ 1g/L
- **Venous thromboembolic events can occur despite thromboprophylaxis and should be considered in the deteriorating patient**

References:

1. Klok FA et al. Incidence of thrombotic complications in critically ill ICU patients with COVID-19. *Thrombosis Research* (2020), https://doi.org/10.1016/j.thromres.2020.04.013
2. Freeman et al. Prevention of venous thromboembolism in obesity. Expert Rev Cardiovasc Ther. 2010 Dec; 8(12): 1711–1721.
3. Hainer et al. Intravenous and subcutaneous weight-based dosing of the low molecular weight heparin tinzaparin (Innohep) in end-stage renal disease patients undergoing chronic hemodialysis. Am J Kidney Dis. 2002 Sep;40(3):531-8.
4. Projean et al. Study of the bioaccumulation of tinzaparin in renally impaired patients when given at prophylactic doses - The STRIP study Thromb Res. 2019 Feb;174:48-50.

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