COVID-19 and Thromboprophylaxis in the Community in Myanmar (August 2021)

Patients with COVID-19 infection of severe and critical cases have increased risk of thrombosis.

Studies confirmed that thromboprophylaxis is associated with improved mortality in patients admitted with COVID-19**.**

The incidence of Venous Thrombo-embolism (VTE) in COVID-19 patients varies depending on the patient population. Reports have ranged from 1.1% in hospital wards to 69% in ICU patients screened with lower extremity ultrasound.

The risk for venous thromboembolism (VTE) was markedly increased, especially during the early stages of the pandemic in patients in the intensive care unit (ICU), with early case series reporting prevalences of 25 to 43 percent in ICU patients, often despite prophylactic-dose anticoagulation. Later studies have reported risks in the range of 5 to 10 percent in ICU patients and <5 percent in hospitalized medical patients.

Risk factors:

- more severe Covid disease high risk than mild disease
- additional risk factors (e.g., older, male, obesity, active cancer, history of VTE, comorbid diseases, ICU care, pregnancy)
- Immobility

COVID-19 is also associated with in-situ “immunothrombosis” in smaller pulmonary arteries and capillaries which has been postulated to be related to a distinct COVID-19 pulmonary intravascular coagulopathy.

Indication for thromboprophylaxis

- All hospitalized adults with COVID-19 unless the risk of bleeding outweighs the risk of thrombosis (low-molecular-weight heparin (LMWH) is recommended over unfractionated heparin (UFH) to reduce contact. In the setting of heparin-induced thrombocytopenia, fondaparinux is recommended).

Post-discharge thromboprophylaxis

- The ASH (American Society of Haematology) guidelines panel recently updated recommendations to suggest patients should not receive thromboprophylaxis after hospital discharge for COVID-19 in the absence of other indications.

Which dose is the most appropriate for thromboprophylaxis?

Use standard thromboprophylaxis dose for severe and critical patients.

Intermediate dose can be considered in higher risk patients.

Disease Severity and Thromboprophylaxis Guide

Non-severe	Severe	Critical
• Absence of signs of severe or critical disease	• SPO2 < 90% on room air • Respiratory rate >30 in adult • Signs of severe respiratory distress	• Requires life sustaining treatment • Acute respiratory distress syndrome • Sepsis • Septic shock
No routine thromboprophylaxis	**Use standard thromboprophylaxis** • Clexane 40 mg once a day • Unfractionated heparin (UFH) 5000 units twice a day • Can also use oral DOACs Rivaroxaban 10 mg OD Apixaban 2.5 mg BD	**Standard dose (as in severe)** **or intermediate dose** • Clexane 40 mg BD • UFH 5000 units 8 hourly

Caution

* Assess Bleeding risk

- Dose of anticoagulation may need to be reduced in renal dysfunction (e.g., eGFR <30 ml/min) or low platelet count 30-50 x 10^9/l
- Do not give thromboprophylaxis if patient has active bleeding, recent bleeding, or platelet count <30

* Check if patient is already on anticoagulation.

  Bleeding risk increased if taking anti-platelet drugs also.

* Pregnancy: do not use DOACs

* Risk of heparin-induced thrombocytopenia after the use of unfractionated heparin

* LMWH dose adjustment

Weight (kg)	<50kg	50-99kg	100-150kg
• ENOXAPARIN (Clexane) sub-cutaneous	• 40mg once daily	• 40mg once daily (non-critical care) • 40mg twice daily (Critical care ICU)	• 40mg twice daily (All hospital patients)
• Renal dose	• If eGFR <30mls/min, reduce dose by 50%		

How long should thromboprophylaxis be given?

In severe COVID-19, thromboprophylaxis to be given 14 days, may extend up to 4 weeks if multiple risk factors for VTE.

Patients who were given LMWH can be switched to DOAC.

Confirmation of VTE

D-dimers are likely to be elevated in severe COVID-19 due to inflammatory response.

Current data do not support the routine use of high D-Dimer levels in isolation to guide decisions regarding investigation and anticoagulation.

If patient has clinical signs of venous thrombosis, and investigations are available, consider US of limbs for DVT or CT/ CTPA for PE.

Suspect possible VTE in the following situations (not exclusive):

- Unilateral limb swelling
- Sudden deterioration of oxygenation/respiratory distress
- Hypoxia out of keeping with CXR findings
- Reduced blood pressure
- New onset tachycardia
- An upward step in d-dimer level

How to treat suspected or confirmed VTE?

Use established guidelines to treat if VTE is confirmed. If anticoagulation commenced for suspected VTE, organise scan to confirm the diagnosis if possible.

- LMWH ideal choice as less drug-interaction with other medications (such as antiviral, immunomodulatory therapies)

  e.g., Clexane (enoxaparin) 1.5 mg/kg/day, check renal function and platelets

- Can change to DOAC (e.g., Rivaroxaban, Apixaban) or warfarin on discharge

- The duration of treatment: at least 3 months

References

- Alex C. Spyropoulos, et al. Scientific and Standardization Committee Communication: Clinical guidance on the diagnosis, prevention, and treatment of venous thromboembolism in hospitalised patients with COVID-19. Journal of thrombosis and haemostasis. 2020; vol 18, issue 8: 1859-1865.
- British Thoracic Society Guidance on venous thromboembolic disease in patients with COVID-19. Feb 2021.
- Beverley hunt, et al. Prophylactic anticoagulation for patients in hospital with COVID-19: Risk –benefit balance may depend on illness severity. BMJ. 487 February 2021.
- West Suffolk NHS Foundation Trust: Thromboprophylaxis, coagulopathy management and thrombosis in COVID-19 infection. Version 4 Updated 10 March 2021
- UpToDate – August 2021
- American Society of Hematology Guidelines