St Helens and Knowsley Teaching Hospitals NHS Trust

VTE PROPHYLAXIS AND MANAGEMENT IN NON-PREGNANT ADULTS WITH SUSPECTED OR PROVEN COVID-19 GUIDELINE

EMERGENCY DEPARTMENT (ED) AND AMBULATORY CARE

Inflammatory parameters typically have increased levels in COVID-19 patients and these patients may also have reduced mobility, putting them at risk of VTE.

● Thromboprophylaxis should be considered in ambulatory COVID-19 patients who are high risk as below. This should be in the form of enoxaparin prophylaxis or prophylactic dose DOAC Apixaban 2.5mg BD or Rivaroxaban 10mg OD (unlicenced use)

☐ Active inflammatory disease
☐ Malignancy
☐ History of VTE
☐ Significantly reduced mobility

● A chest X-ray should be undertaken in patients with respiratory symptoms associated with COVID-19 infection. If a pulmonary embolism is suspected, a CT pulmonary angiogram should be considered. This decision should not be based on a D-dimer

THROMBOPROPHYLAXIS IN ADULT INPATIENTS

Patients admitted to hospital require a VTE risk assessment but **ALL** adult patients with confirmed or highly probable COVID-19 infection should receive pharmacological thromboprophylaxis ie low molecular weight heparin (LMWH) as dosed in the table below unless there is an absolute contraindication (mildly prolonged coagulation times is not a contraindication).

Thromboprophylaxis should be continued for the length of inpatient stay

Patients already on anticoagulation with a vitamin K antagonist or direct oral anticoagulant (DOAC) can either continue with current anticoagulation or switch to LMWH when there is a potential interaction of a COVID investigational therapy with a DOAC – use the following link for interations https://covid19-druginteractions.org/

ABSOLUTE CONTRAINDICATION

☐ Active Bleeding
☐ Significant risk of haemorrhage
☐ Platelet count <25

ENOXAPARIN DOSING

Standard prophylactic dose low molecular weight heparin (LMWH) is recommended for COVID-19 patients requiring ward-based care.

Patients with additional risk factors for VTE below should be considered to be on **Intermediate dose prophylaxis***

☐ Active inflammatory disease
☐ Malignancy
☐ Past or current history of VTE
☐ CPAP/NIV
☐ Critical Care admission

Standard prophylaxis		
Weight	**Enoxaparin Dose**	
	CrCl > 30 mL/min	**CrCl < 30 mL/min**
< 50 kg	40 mg OD	20 mg OD
50 – 100 kg	40 mg OD	20 mg OD
100 – 150 kg	40 mg BD	40 mg OD
> 150 kg	60 mg BD	60 mg OD

Intermediate dose Prophylaxis*		
Weight	**Enoxaparin Dose**	
	CrCl > 30 mL/min	**CrCl < 30 mL/min**
< 50 kg	20 mg BD	20 mg OD
50 – 100 kg	40 mg BD	40 mg OD
100 – 150 kg	60 mg BD	60 mg OD
> 150 kg	80 mg BD	80 mg OD

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EXTENDED THROMBOPROPHYLAXIS

There is currently no specific evidence on the use of thromboprophylaxis following discharge from hospital following COVID-19 infection.

Extended thromboprophylaxis may be considered on discharge in those patients who are high risk as detailed before, including those with a critical care admission or significantly reduced mobility. The decision needs to be made after assessing the bleeding risk. A Total duration of 14 to 28 days of thromboprophylaxis with LMWH may be considered in such patients.

This should be in the form of enoxaparin prophylaxis or prophylactic dose DOAC Apixaban 2.5mg BD or Rivaroxaban 10mg OD (unlicenced use)

INVESTIGATION OF VTE

Clinical suspicion of DVT should be treated with therapeutic LMWH and investigated with imaging regardless of Well's score and d-dimer as these have not been validated in a COVID-19 positive population.

Pulmonary Embolism should be considered if sudden worsening of hypoxaemia, blood pressure or tachycardia occurs, or if oxygen requirements are disproportionate to the severity of pneumonia on CXR – consider treatment dose LMWH and request CTPA (if there are no other contra-indications)

If a CTPA is indicated but not possible for medical reasons, please discuss with radiology/nuclear medicine if a scintigraphic perfusion or V/Q lung scan can be performed.

Echocardiography is recognised as a useful modality in the diagnosis of pulmonary embolism. However, it appears this may be of limited utility in the diagnosis of PE in COVID-19 given the frequent right ventricular (RV) dysfunction that is seen as part of the underlying condition in severe cases. However, when RV dysfunction is severe, the diagnosis of PE is important to consider.

MANAGEMENT OF VTE

Unconfirmed VTE

Where clinical suspicion is high and confirmatory imaging is not possible, therapeutic anticoagulation should be considered, with close assessment of bleeding risk and confirmation of diagnosis when feasible. An assessment of bleeding risk should be done.

Confirmed VTE

Patients with confirmed VTE should commence treatment dose LMWH, dosed appropriately for weight and renal function.

DOACs can be considered if patients are sufficiently well to take oral medication or may be switched to a DOAC as their condition improves, if no invasive procedures are anticipated and they are not on interacting medications.

Treatment should be for a minimum duration of three months. Longer durations may be required based on clinical assessment.

Role of thrombolysis

Patients with intermediate and high-risk confirmed PE and signs of haemodynamic instability may be suitable for intravenous thrombolysis. There is limited experience of the role of this in patients with COVID-19.

If using systemic thrombolysis, a 50% dose reduction can be considered based on standard systemic doses and repeated, if necessary, for patients who have haemodynamic compromise.

Discharge and follow up

Patients with confirmed DVT commenced on anticoagulation should be referred to and followed up by the anticoagulation team.

Patients with confirmed PE may be considered for multidisciplinary follow up, based on initial clinical findings and investigations. Those patients with intermediate and high-risk PE may require a repeat echocardiogram and lung function tests. Therefore they should be referred for physician led as well as anticoagulation team follow up.