VTE Prophylaxis for Covid-19 positive inpatients on an adult medical ward (excluding pregnant patients) – Version 2, September 2021

This flowchart must be read in conjunction with the attached guidance notes. *__High flow oxygen__ is defined as: 'Patients requiring above 5 litres oxygen per minute **or** over 40% oxygen **or** patients being considered for respiratory support'.

Exclusion criteria:-

-Pregnancy (see separate guidance document)
-On anticoagulation for pre-existing condition
-On dual antiplatelet therapy (see guidance notes)
-Less than 16 years old
-ICU patient
-DVT or PE considered likely or confirmed on this admission
-Platelet count ≤ $30x10^9$/L
-Fibrinogen < 1.5g/L (see guidance notes and repeat test to monitor level)

Yes to any, exit this guideline

None

Complete Trust 'VTE Risk Assessment for hospitalised patients'- on page 2 of medicine kardex.

[Note in step 3- for Covid 19 positive patients the thrombocytopenia threshold is modified from <75 to ≤ 30]

Excess bleeding risk or contraindication to LMWH?

If yes, exit this guideline

No excess bleeding risk

Is patient on oxygen for management of acute Covid-19 infection?

Not on oxygen

Platelet count ≤ 30	Platelet count > 30
No LMWH. Consider TED stockings	LMWH as per dosing chart A

On oxygen (But **NOT** high flow* or CPAP/NIV)

Platelet count ≤ 30	Platelet count 31 – 100	Platelet count > 100
No LMWH. Consider TED stockings	LMWH as per dosing chart A	LMWH as per dosing chart B

On high flow oxygen* or CPAP/NIV

Platelet count ≤ 30	Platelet count > 30
No LMWH. Consider TED stockings	LMWH as per dosing chart A

Before prescribing see advice re. duration and de-escalation of LMWH in guidance notes

Guidance notes – COVID 19 inpatient thromboprophylaxis for patients treated in adult medical wards

This guidance applies only to patients aged 16 years and older receiving inpatient treatment for acute COVID 19 infection under the care of a Consultant Physician in a medical ward.

It does not apply to pregnant patients. Please see separate guidance document for thromboprophylaxis in pregnant patients with COVID 19 infection.

It does not apply to ICU patients or to patients receiving care in other environments.

This document is for guidance only. Individual clinical circumstances may necessitate an alternative approach at clinician discretion. These guidance notes must be read in conjunction with the attached flowchart and dosing charts.

Bleeding risk, thrombosis risk and low molecular weight heparin dose should be reviewed daily.

Background

Guidance on low molecular weight heparin (LMWH) dosing for thromboprophylaxis in COVID-19 infection from specialty societies and national guidance organisations has evolved rapidly over the course of the pandemic. This current guidance is based on recommendations from NICE - 'NICE Guideline NG 191 – COVID 19 rapid guideline: managing COVID 19' (published 2nd September 2021) and updates previous NICE guidance on this topic. It may be subject to further change as new evidence becomes available.

NICE now provide guidance on using two different dose levels of LMWH thromboprophylaxis – standard and therapeutic – depending on the clinical condition of the patient. Previous guidance also included intermediate level dosing and this has now been removed.

Standard thromboprophylaxis is that used currently and historically for many years for hospital inpatients. See attached dosing chart A.

Therapeutic thromboprophylaxis is usually 1mg/kg Enoxaparin twice daily (if eGFR equal to or above 30). See attached dosing chart B for exact doses based on body weight and renal function.

Standard thromboprophylaxis – Provided there is no contraindication, patients with COVID 19 infection commencing standard dose LMWH thromboprophylaxis should receive it for a minimum of 7 days, including after discharge if their admission is less than 7 days duration. Please see also advice below re. thromboprophylaxis after discharge.

Therapeutic level thromboprophylaxis - A significant change from previous practice is the NICE recommendation to consider therapeutic level dosing for patients with moderate COVID disease.

NICE define moderate COVID disease as a patient requiring oxygen but not high flow oxygen or NIV/CPAP.

High flow oxygen is defined as: 'Patients requiring above 5 litres oxygen per minute **or** over 40% oxygen **or** patients being considered for respiratory support.

Duration of this therapeutic level dosing is advised to be 14 days or until hospital discharge, whichever occurs first. After 14 days patients should reduce to standard dose LMWH thromboprophylaxis. Furthermore, some patients may require a reduction to standard dose or no LMWH before 14 days depending on changes in their clinical condition. It is therefore essential that all inpatients have their bleeding risk, thrombosis risk and LMWH dose reviewed daily.

LMWH thromboprophylaxis after hospital discharge

See also specific guidance in separate document for **pregnant and post-partum patients**

See also comments above in section – 'standard thromboprophylaxis'

There is no specific guidance for post discharge prophylaxis and a case by case decision will be required from a senior member of the treating medical team. For patients considered at high risk of venous thromboembolism and who have a low risk of bleeding, up to four weeks of standard dose (not therapeutic dose) LMWH thromboprophylaxis may be considered. Such patients would include those where prolonged immobility is anticipated after discharge.

Patients already on anticoagulation on hospital admission

For patients receiving anticoagulation for another medical condition when admitted to hospital with COVID 19 it is advised to continue their current anticoagulant unless it has become contraindicated in their current clinical state.

If these patients are on an anticoagulant other than LMWH and their clinical condition is deteriorating then consideration should be given to switching to LMWH.

Patients on dual antiplatelet therapy

Patients receiving two antiplatelet agents should avoid therapeutic level LMWH. Such patients can be considered for standard level LMWH.

Patients for whom pharmacological thromboprophylaxis is deemed unsuitable

Such patients should be considered for TED stockings, unless contraindicated.

Surgical patients

For patients requiring surgery or immediately post surgery standard dose thromboprophylaxis is advised.

Anti Xa level monitoring

This is not required for all patients. It is only indicated in a subset of patients considered at risk of LMWH accumulation. Please see dose chart B for advice on patients who require anti Xa monitoring.

Anti Xa samples should be taken 4 hours after Enoxaparin dose is administered. Further information on sample timing is provided in dose chart B. The sample is taken in a blue top (citrate/coagulation tube) and forwarded to the laboratory as soon as possible for analysis. Results will be available on the Trust laboratory system.

References

NICE Guideline NG 191 – COVID 19 rapid guideline: managing COVID 19 (Most recent update 2nd September 2021). www.nice.org.uk/guidance/ng191

REMAP CAP Anticoagulation Domain Specific Index. Version 3.0, 27th February 2021. Link via www.remapcap.org/protocol-documents

British Thoracic Society Guidance on venous thromboembolic disease in patients with COVID 19.Version 3.0, 8th February 2021. Link via www.brit-thoracic.org.uk/document-library

SHSCT Clinical Guideline Ref CG0202[4] – Anticoagulation: Enoxaparin Dosing – Quick Reference Guide.

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Dosing Chart A- Standard LMWH Thromboprophylaxis

	Enoxaparin dose	
Weight (kg)	**eGFR ≥ 30ml/min**	**eGFR < 30ml/min**
< 50	20mg once daily	20mg once daily
50 – 100	40mg once daily	20mg once daily
101 – 150	40mg twice daily	40mg once daily
> 150	60mg twice daily	60mg once daily

Dosing Chart B- 'Therapeutic Type' LMWH Thromboprophylaxis

	Enoxaparin dose	
Weight (kg)	**eGFR ≥ 30ml/min**	**eGFR < 30ml/min**
40 – 45	40mg twice daily	40mg once daily*see footnote
46 – 55	50mg twice daily	50mg once daily*see footnote
56 – 65	60mg twice daily	60mg once daily*see footnote
66 – 75	70mg twice daily	70mg once daily*see footnote
76 – 85	80mg twice daily	80mg once daily*see footnote
86 – 95	90mg twice daily	90mg once daily*see footnote
96 – 110	100mg twice daily	100mg once daily*see footnote
≥ 111	120mg twice daily	120mg once daily*see footnote

Patients with eGFR < 30 require Anti Xa monitoring.

Check Anti Xa level four hours after 3rd LMWH injection.

Target Anti Xa level ≤ 1.4 IU/mL

Anti Xa level (iu/ml)	Action
≤1.40	Continue current dose. Repeat Anti Xa after further 3 doses.
1.41 – 2.00	Reduce LMWH dose by 50%. Repeat Anti Xa after further 2 doses.
>2.00	Omit LMWH and recheck Anti Xa after 24 hours. When Anti Xa <1.0 restart LMWH at 50% of previous dose. Repeat Anti Xa after 3 doses.

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