For symptomatic COVID-19 patients admitted to medicine, ICU or OB

Labs for patients with symptomatic COVID-19

On admission: D-dimer, reticulocyte count, PT/INR, aPTT, fibrinogen, Antithrombin, ferritin, LDH, CMP and CBC with differential

Daily (consider in patients admitted for COVID): D-dimer, reticulocyte count, PT/INR, aPTT, fibrinogen and CBC with differential

For asymptomatic patients admitted to OB with new COVID (2 weeks) prophylactic anticoagulation for prolonged antepartum, postpartum and on discharge

PROPHYLACTIC DOSING

D-dimer < 4.0 µg/mL

AND NO other Risk Factors[$]

eGFR* >/= 30 mL/min

- BMI > 40 kg/m²: **Enoxaparin 40 mg SQ BID**
- BMI 18-40 kg/m²: **Enoxaparin 40 mg SQ Q24 Hrs**
- BMI < 18 kg/m²: **Enoxaparin 30 mg SQ Q24 Hrs**
- *Enoxaparin anti-Xa goal = 0.3-0.5. Testing only recommended if concern for under or over-treatment.*

eGFR* < 30 mL/min OR high risk for delivery

Heparin 5,000 units SQ Q 8 Hours

If pharmacologic prophylaxis contraindicated (active bleeding, PLT < 30,000): Apply SCDs

INTERMEDIATE DOSING

D-dimer ≥ 4.0 µg/mL

AND/OR in the ICU, active cancer or history of VTE

eGFR* >/= 30 mL/min

- **Enoxaparin 0.5 mg/kg SQ BID** (Max dose = 90 mg)

Check Enoxaparin anti-Xa on any dose > 80 mg

Target Enoxaparin anti-Xa (4 hrs after 4th dose) = 0.4-0.7.

eGFR* < 30 mL/min OR high risk for delivery

- **Heparin 7500 units SQ Q 8 Hours**

Heparin anti-Xa goal – 0.25-0.5

If pharmacologic prophylaxis contraindicated (active bleeding, PLT < 30,000): Apply SCDs

Post-Hospitalization VTE Prophylaxis

- **All patients to be educated about the symptoms of DVT (swelling, pain, redness, warmth) and PE (SOB, CP, tachycardia, cough/hemoptysis)**
- **If admitted for COVID prophylactic enoxaparin (or heparin) for 30 days and until the patient is mobile**
- **If admitted to OB with a diagnosis of COVID within the last 2 weeks (asymptomatic) and being discharged postpartum, consider 6 weeks of prophylactic anticoagulation if no contraindication, especially if additional risk factor (cesarean, obesity, VTE history, thrombophilia)**

Post-Hospitalization VTE Management

- **Follow standard for full anticoagulation treatment**

[$]Risk factors = Critically ill/in ICU, active cancer or history of thromboembolism.

*eGFR and Creatinine Clearance can be used interchangeably to estimate renal function

Dosing weight for PREGNANT patients is actual body weight and POST-PARTUM dosing should be pre-pregnancy weight

For additional information, refer to "Thromboprophylaxis VTE Guidance—COVID-19" created by the Acute Medicine Clinical Practice Council, available on the COVID-19 Provider site: https://northmemorial.com/healthcare-providers-coronavirus-covid-19/#treatment

References:

1. This document is modified from the UNC, Yale and M Health Fairview Protocols.
2. Lemos ACB, et al. Therapeutic versus prophylactic anticoagulation for severe COVID-19: A randomized phase II clinical trial (HESACOVID). Thromb Res. 2020.
3. Flumignan R, et al. Prophylactic anticoagulants for people hospitalized with COVID-19. Cochrane Systematic Review. 2020.
4. Sadeghipour P, et al. Effect of Intermediate dose vs standard dose prophylactic anticoagulation on thrombotic events, extracorporeal membrane oxygenation treatment, or mortality among patients with COVID-19 admitted to the intensive care unit. The INSPIRATION randomized Clinical Trial. JAMA. 2021.
5. Chan W-S, et al. D-dimer testing in pregnant patients: towards determining the next 'level' in the diagnosis of deep vein thrombosis. J Thromb Haemost. 2010. 8: 1004-11.

COVID-19 WORKGROUP FOR THE OB/GYNCLINICAL PRACTICE COUNCIL

This team represents expertise in Obstetrics. If you would like further information, please contact the work group lead, Todd Stanhope, MD - Todd.Stanhope@NorthMemorial.com

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Revision History

This document is active and further recommendations are forthcoming. It will be updated as additions develop.

Revision	Description of Changes	Approvals	Date
1.0	Initial Document	OB/GYN Clinical Practice Council	12-11-2020
2.0	Removed therapeutic dosing, Adjusted D-dimer thresholds, Adjusted verbiage in lower red box, Reformatted	OB/GYN Clinical Practice Council	06-11-2021
2.1	Converted d-dimer measurement from d-dimer units (DDU) to fibrinogen equivalent units (FEU)	OB/GYN Clinical Practice Council	01-07-2022