CLINICAL GUIDELINE

Venous Thromboembolism (VTE) Prophylaxis in COVID-19+ patients

(Age >6 months*)

Children's MINNESOTA

Aim: To standardize risk screening and prophylaxis for VTE in patients hospitalized with COVID-19.

Hospitalized (inpatient/ICU status) patient positive for COVID-19?

Yes → Age ≥ 12 years

Yes → Start pharmacologic thromboprophylaxis unless contraindicated (note 1 and 2). Baseline labs: PT/PTT/fibrinogen, BMP, CBC, d-dimer. Early ambulation.

No → Off-guideline

No → Assess risk factors

Lower Risk:
No additional risk factors
Not critically ill

- Early ambulation
- Mechanical prophylaxis (note 3)

Moderate Risk:
Any additional risk factors
Not critically ill

- Baseline labs: BMP, CBC, PT/PTT/fibrinogen, d-dimer.
- Early ambulation
- Mechanical prophylaxis with pneumatic compression device (note 3)
- Discuss with Hematology possible pharmacologic thromboprophylaxis

High Risk:
Critically ill OR,
Multi-system inflammatory syndrome OR,
Multiple risk factors OR,
Previous VTE or clot

- Baseline labs: PT/PTT/fibrinogen, BMP, CBC, d-dimer.
- Early ambulation
- Pharmacologic prophylaxis (notes 1 and 2) unless contraindicated (discuss with hematology)
- Mechanical prophylaxis (if pharmacologic is contraindicated): pneumatic compression device (note 3)

Risk Factors

Reassess Q 24-48 hr to determine need to start/continue or discontinue prophylaxis

Pre-existing conditions
1st degree relative with VTE (before 50 yr)
Inflammatory disease
Autoimmune disease
Nephrotic syndrome
Congenital heart disease (uncorrected)

Current Medical Problems
Malignancy
Co-infection (in addition to COVID-19)
Major surgery
Major trauma and/or burn
Immobility >3 days
Pregnancy
Obesity (BMI>30 or > 95%ile)
Smoker

Medications
Estrogen-containing medications
Asparaginase within 30 days
Prolonged steroids

Iatrogenic Issues
Shunt or stent or artificial valve
Central venous catheter/PICC

Lab Abnormalities
Elevated D-Dimer may indicate increased risk-Discuss with Hematology if no other risk factors to prompt prophylaxis

***EXCLUSION GUIDELINES**

Patients **excluded** from this guideline:

- Patients in OBSERVATION status with mild illness
- Patients with identified thrombus or VTE
- Young infants are also at risk for VTE, however, this is out of scope for guideline due to lack of studies on pharmacologic interventions

Note: Information on COVID-19 management is rapidly evolving. Please refer to www.CDC.gov, www.who.int. Due to the dynamic situation, this guideline was not reviewed by the Guideline Governance Council but is updated regularly by clinical leadership.

Reviewer: Workgroup
Revised 05/2020

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Note 1. Pharmacologic prophylaxis options:
LMWH-enoxaparin, or heparin, see hospital policy 322.

- < 60 kg: Enoxaparin 0.5 mg/kg/dose subQ q12 h. Pharmacy to titrate.
- ≥ 60 kg, give 30 mg subQ BID. No routine monitoring needed.
- >60 kg actual weight (not dosing weight) and BMI greater than 40, give 40 mg subQ Q12H
- Avoid LMWH-enoxaparin if creatinine clearance < 30, consider heparin.
- Patients with MIS-C may receive aspirin AND LMWH-enoxaparin. In other patients with COVID-19 recommend holding aspirin while giving chemical thromboprophylaxis.

Note 3. Contraindications to mechanical prophylaxis: Affected extremity has acute fracture or peripheral IV, or skin/other condition (dermatitis, burn, tumor), OR unable to achieve correct fit due to patient size, OR lower extremity peripheral arterial insufficiency.

References:
https://www.hematology.org/covid-19/covid-19-and-vte-anticoagulation
CHOP VTE-COVID Prophylaxis Pathway

Monitor for signs and symptoms of bleeding if on pharmacologic prophylaxis
Oozing at sites (IV, surgical wounds, etc.)
Gross hematuria
Severe epistaxis (requiring intervention)
Bleeding causing a drop in hgb by 2 g/dL
Lower GI bleeding (black tarry stools, frank blood)
Upper GI bleeding (hemoptysis)
Ecchymosis or petechiae

Note 2. Pharmacologic VTE Prophylaxis Contraindications
Discuss thromboprophylaxis with any involved surgical services.

Absolute contraindications:
Active hemorrhage
Diagnosed bleeding disorder, known or tendency
Thrombocytopenia (platelets < 25 k)
Neurosurgery, TBI, or major solid organ injury in last 72 hr
Recent intracranial hemorrhage or acute stroke
Thrombolytic therapy within last 24 hr
Epidural or paraspinal hematoma
Epidural catheter in place (may use heparin)
Lumbar puncture or epidural catheter removed in last 6 hr
Significant uncorrected coagulopathy (e.g. INR > 2 or fibrinogen < 100 or PTT> 40): *Consult hematology in this scenario*
Heparin-induced thrombocytopenia, or other hypersensitivity to heparin or LMWH-enoxaparin

Relative contraindications:
For LMWH-enoxaparin, renal dysfunction (may need dose adjustment)
Significant uncontrolled hypertension > 99%ile
Pelvic fracture in last 24–48 hr
Intracranial/spinal lesion at high risk of bleed
Anti-platelet therapy (discuss management with primary service, e.g. cardiology)
*For invasive procedures: hold heparin x 6 hours, hold LMWH-enoxaparin x 12-24 hours

Workgroup: Hester, Garland, Wise, Schwarze, Orioles, MacIver, Morhack, Lissick

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