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

**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

**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

*Disclaimer:* This guideline is designed for general use with most patients; each clinician should use his or her own independent judgment to meet the needs of each individual patient. This guideline is not a substitute for professional medical advice, diagnosis or treatment.
CLINICAL GUIDELINE

Venous Thromboembolism (VTE) Prophylaxis in COVID-19+ patients
(Age 6 months*)

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

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 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

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:
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

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

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 is not reviewed by the Guideline Governance Council but is updated regularly by clinical leadership.

Reviewer: Workgroup
Revised 05/2020

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