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MSHS COVID ANTICOAGULATION PROTOCOL

The Mount Sinai Health System has developed and refined a protocol for anticoagulant therapy for patients with Severe Acute Respiratory Distress Syndrome Coronavirus (SARS-CoV-2) disease (COVID-19).

Rationale

Non-critically Ill Hospitalized Patients

The MSHS COVID Anticoagulation workgroup has reviewed the most recent data. Several studies published since the prior version of the MSHS COVID AC protocol found improved outcomes, such as decreased organ support-free days, with treatment dose anticoagulation compared to prophylaxis-dose anticoagulation. Based on these studies, the NIH guideline recommended treatment dose anticoagulation for non-critically patients hospitalized for COVID-19. This recommendation was given a "C" strength, which is an "optional recommendation." However, the majority of studies found that treatment dose anticoagulation did not reduce mortality and increased bleeding. In addition, all studies were done before Omicron became the predominant variant. Omicron is less virulent and associated with a lower mortality rate than prior variants. Based on the available evidence and the decrease in the COVID mortality rate, the workgroup determined that prophylaxis-dose anticoagulation remains the standard approach for non-critically ill hospitalized patients. The workgroup considered the optimal prophylaxis agent and dose. MSHS has been using a prophylaxis regimen traditionally used for orthopedic surgery (enoxaparin 30mg SC q 12 hours), as it has proven to be effective and safe in that high-risk setting. Given the successful experience at MSHS and lack of a proven superior alternative, the current regimen remains unchanged.

Critically Ill Patients

The data and guidelines continue to support prophylaxis-dose anticoagulation for critically ill patients with COVID-19.

All admitted patients with COVID:

- All admitted patients should be assessed for VTE risk factors, signs or symptoms of DVT and PE, and bleeding risk.
- Increased risk for bleeding includes active bleeding, PLT <50K, or INR >1.8.
- All patients should receive VTE prophylaxis as follows, unless they have a contraindication to anticoagulation:
    - BMI <40
        - CrCl >30: Enoxaparin 30 mg SQ Q12H
        - CrCl ≤30: Enoxaparin 30 mg SQ daily; Alternative - heparin 5,000 units SQ Q8hrs
    - BMI ≥40
        - CrCl >30: Enoxaparin 40 mg SQ Q12H
        - CrCl ≤30: Enoxaparin 40 mg SQ daily; Alternative - heparin 7,500 units SQ Q8hrs
    - If anticoagulant prophylaxis is contraindicated, apply sequential compression device (SCD) per standard MSHS VTE prophylaxis protocol. SCD should not be placed if a DVT is present or there are signs/symptoms of DVT (i.e., unilateral leg swelling and pain).

Confirmed VTE, based on positive diagnostic test (e.g., LE ultrasound, CTA) or high clinical suspicion in patients who cannot undergo diagnostic testing due to clinical instability.

- Treatment dose anticoagulation – Treat as per standard treatment for acute VTE.
    - Can initiate treatment-dose apixaban or rivaroxaban to avoid need to transition from LMWH to oral agent.
        - Apixaban dose: 10mg PO BID for 7 days then 5mg PO BID.
        - Rivaroxaban dose: 15mg PO BID for 21 days then 20mg daily.
    - CrCl <30, including RRT
        - No adjustment for apixaban is needed
        - Avoid rivaroxaban if CrCl <30
        - IV heparin and warfarin is a reasonable alternative to use of apixaban.
- Duration – Minimum of 3 months. Total duration should be determined based on an individualized assessment of the patient's risk of recurrent VTE and bleeding.

Post-hospitalization

- Prophylactic anticoagulation is not recommended after discharge.
- Patients who were anticoagulated for an established VTE or other indication (e.g., atrial fibrillation) should continue to receive the anticoagulation regimen and duration as recommended for that indication.

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