Memorandum

Date: May 8, 2020

To: All Physicians, Pharmacists and Nursing Staff

From: Dr. Elizabeth Mackay and Micheal Guirguis, on behalf of the AHS VTE Working Group

RE: VTE Prophylaxis for Admitted COVID-19 Patients

Recommendations:

- All admitted COVID-19 patients should be provided weight – based standard tinzaparin venous thromboembolism (VTE) prophylaxis, unless contraindicated (outlined in the AHS Formulary).
- At this time, there is insufficient evidence to recommend higher doses of tinzaparin for COVID-19 ICU patients to prevent VTE.

Background:
Patients with a severe COVID-19 infection may have a hypercoagulable state. Patients often have an elevated fibrinogen and D-dimer levels that correlate with other markers of inflammation (e.g., CRP, LDH, ferritin). There may be other signs of coagulopathy such as an elevated aPTT, INR or mild thrombocytopenia (platelet count > 100 x 10^9/L).

The incidence of acute VTE remains uncertain, although is likely to be higher than the general medical population. It is clear from the evolving evidence that **all admitted COVID-19 patients** should receive standard weight-adjusted VTE prophylaxis, unless contraindicated (outlined in the AHS Formulary).

D-dimer elevations are common (50-60%) in COVID-19 patients. Studies have shown that a markedly elevated D-Dimer is associated with mortality from COVID-19. This may be a reflection of either a pro-inflammatory or hypercoagulable state.

An elevated D-dimer alone does not warrant investigation for VTE. Pulmonary embolism should be considered for admitted patients with COVID-19 who have unexplained worsening respiratory status/hypoxia, unexplained hypotension or tachycardia, or signs of DVT. Patients with high D-dimer who are admitted to ICU should be followed closely for signs of VTE. Based upon the current evidence, there is insufficient data to recommend intensified empiric prophylaxis regimens outside of clinical trials.

COVID-19 patients should not receive therapeutic-dose anticoagulation empirically unless there is an indication for therapeutic-dose anticoagulation. In patients with physical findings consistent of thrombosis (e.g., central or arterial line or dialysis membrane clotting) consider therapeutic anticoagulation. There is currently no evidence for extended prophylaxis for patients post hospitalization for COVID-19 infections.

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