Prophylactic Anticoagulation Treatment in COVID-19 Patients Complicated with Retroperitoneal Hemorrhage

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- Three COVID cases in our facility were admitted and managed, ultimately resulting in a retroperitoneal hemorrhage.
- This complication is secondary to prophylactic treatment for venous thromboembolism (VTE) in hypercoagulable patients.

**Background**

- Infection from COVID-19 increases a patient’s risk of becoming hypercoagulable.
- Recent research hypothesizes a relationship between inflammation and thrombosis, and cytokine storm.1,2
- Studies report elevated incidence of VTE compared to arterial.2
- Unfractionated heparin and LMWH have been most common used as prophylaxis due to anti-inflammatory and antiviral effects.3
- Figure below shows the bidirectional crosstalk between inflammation and thrombosis, and cytokine storm.

**Results (cont.)**

- Rate of VTE for intermediate versus therapeutic dosing were similar, suggesting little added benefit.6
- Incidence of major hemorrhage among patients receiving therapeutic dosing was found to be greater than 6%.5
- Compared to prophylactic dosing, therapeutic dosing has a decreased incidence of minor and major thrombosis.5
- INSPIRATION trial found that escalating to intermediate dose did not improve the outcome of thrombosis or mortality.4
  - Intermediate dosing was trending towards increased bleeding but did not reach statistical significance.6

**References**