COVID-19 Testing in Unprovoked VTE

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COVID-19 Epidemiology:
- During the COVID-19 pandemic there were nearly 14,000 confirmed cases of the virus in the state of Connecticut¹
- There were a total of 4,492 deaths¹
- Likely many more subclinical infections and deaths than documented²

Hypercoagulability in COVID-19
- Well-established connection between the COVID-19 virus and endothelial injury
- Hypercoagulable state was defined by a combination of endothelial injury and thrombosis
- VTE are particularly common within the pulmonary vasculature
- Histopathologic examination at the time of autopsy shows alveolar microthrombi and angiogenesis³

Current Guidelines
American Society of Hematology:
- Don’t test for thrombophilia in adult patients with venous thromboembolism in the setting of major transient risk factors
- All patients with COVID-19 who are started on empiric therapeutic anticoagulation for presumed or documented PE should be given a minimum course of 3 months of the therapeutic regimen

American College of Chest Physicians:
- First episode of provoked VTE should receive anticoagulation for a minimum of three months
- Consider lifelong anticoagulation therapy in patients with unprovoked VTE

The Case
- 40-year-old with no past medical history
- Presented with several days of SOB and DOE w/remote history flu-like symptoms several weeks prior to presentation
- Found to have extensive pulmonary emboli in all lobar, interlobar, segmental, and many subsegmental pulmonary arteries requiring suction thrombectomy
- COVID-19 antibodies tested: negative
- Due to testing limitations at the start of the COVID-19 pandemic, it is unclear what percentage of the population had subclinical infection
- Because there is a well-documented association between COVID-19 infection and the resulting hypercoagulable state, we propose covid antibody testing in patients with otherwise unprovoked VTE to determine duration of anticoagulation therapy and avoid thrombophilia workup.

Case Resolution
- Discharged to start on a life-long DOAC
- Follow up in hematology clinic
- Due to the significant clot burden he underwent hypercoagulability testing that was entirely negative
- APC resistance, antithrombin activity, protein C activity, protein S activity, DRV Normalized ratio, SCT normalized ratio, Lupus Anticoagulant

The Cost
- 1-year supply of Apixaban: $5,700
- Laboratory testing for hypercoagulability: $500
- Additional visit with benign hematology
- Complications from lifelong anticoagulation therapy
- COVID Antibody test: $42.13

Next Steps
- Due to testing limitations at the start of the COVID-19 pandemic, it is unclear what percentage of the population had subclinical infection
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References