ROBERT WOOD JOHNSON UNIVERSITY HOSPITAL

COVID-19 Inpatient Anticoagulation Recommendations (April 9, 2020):

Screening:

Is patient currently on therapeutic anticoagulation or antiplatelet medications at home?

Does patient have history of HIT or heparin allergy?

Does patient or anyone in their family have a history of bleeding disorder?

Has patient had recent bleeding symptoms or surgeries/procedures?

If yes to any of these questions please review additional considerations section prior to deciding on AC dose.

All patients should have the following collected prior to any anticoagulation initiation: CBC, CMP, PT/INR/PTT, Fibrinogen, D-dimer

All hospitalized COVID patients should receive DVT prophylaxis with **intermediate-dose Enoxaparin 40 mg SC twice daily unless**:

Kidney Function		**Platelet Count**		**Fibrinogen**
For patients receiving ANY dialysis	For CrCl less than 30 mL/minute	Platelet count 25-40K	Platelet count less than 25	For Fibrinogen less than 150
Heparin 5000 units Q8 hours vs heparin 7500 units Q12 hours	**DECREASE dose** to Enoxaparin 40 mg SC once daily	**DECREASE dose** of Enoxaparin to 40 mg SC once daily	**HOLD** anticoagulation and initiate SCDs.	**HOLD anticoagulation** and initiate SCDs. **Consider hematology consult**

If patients are unable to maintain peripheral SaO2 of ≥ 94% on 6 LPM nasal cannula, we recommend **full-dose anticoagulation** with **Enoxaparin 1 mg/kg SC twice daily unless:**

Kidney Function	**Platelet Count**	**Fibrinogen**	**PT/INR**	**PTT**
For CrCl less than 30 mL/minute **OR** decompensating kidney function	Platelet less than 100K	For Fibrinogen less than 200	If PT>3 sec above normal or INR >2	If PTT >5 sec above normal
DECREASE dose to 0.5 mg/kg SC twice daily and **call hematology for anti-Xa monitoring recommendations**	**Consult hematology for consideration of decreased AC dose.**	**Consult hematology for consideration of decreased AC dose.**	**Consult hematology for consideration of decreased AC dose.**	**Consult hematology for consideration of decreased AC dose.**

All patients should have the following labs rechecked prior to increasing anticoagulation:

CBC, CMP, PT/INR/PTT, Fibrinogen, D-dimer

Once patients are escalated to full-dose anticoagulation, we recommend continuation of this dose for the duration of the hospitalization unless change in clinical status.

Pearls for Lovenox dosing:

- Dose capping should be AVOIDED
- Use TOTAL body weight for weight-based dosing calculations

Additional considerations:

- If patient on therapeutic anticoagulation at home that is not lovenox (ex. Warfarin, DOAC) would recommend changing to treatment dose lovenox (1mg/kg BID) for the duration of their hospitalization unless CrCl <30 mL/min (dose adjust), history of HIT, or fibrinogen <200. Can consider Hematology consult at that time for additional guidance.
- If patient on ANY antiplatelet therapy would recommend standard dose DVT prophylaxis with Lovenox 40mg daily rather than intermediate dose.
- If patient with history of HIT would consider fondaparinux but recommend hematology consult prior to initiation.
- If patient with personal or family history of bleeding disorder, recent surgery/procedure, or recent bleeding symptoms please consult with hematology before starting anticoagulation
- Consider hematology consult if concern for DIC or COVID coagulopathy (as demonstrated by platelets <100, fibrinogen <150, prolonged PT/INR/PTT)
- If patient is on device where parenteral AC may be preferred (ex. ECMO, LVAD, CVVHD), ok to change to desired AC and can consider hematology consult if needed.
- We recommend all patients who cannot tolerate anticoagulation should have SCDs for mechanical thromboprophylaxis.
- Patients with a BMI of < 18 kg/m^2 consult hematology.
- Patients with a BMI of ≥40 kg/m^2 will also receive Lovenox 40mg SC BID.

COVID-19 Anticoagulation Recommendations: Discharge Planning

For patients on prophylactic anticoagulation (Lovenox 40mg daily or BID):

- Recommend to continue prophylactic AC with lovenox 40mg daily or Eliquis 2.5mg BID for 2 weeks post discharge

For patients started on therapeutic anticoagulation with no known VTE:

- Recommend to continue therapeutic anticoagulation with lovenox (at current inpatient dose) or Eliquis 5mg BID for 1 month unless persistent VTE symptoms (ex LE pain, swelling, dyspnea) as assessed by their PMD (For patients on hemodialysis contact hematology)

For patients started on therapeutic anticoagulation and known VTE:

- Continue therapeutic anticoagulation with either lovenox (at current inpatient dose) or Eliquis 5mg BID for at least 3-6 months
- Xarelto 20mg daily can be considered if above options not available to patient and CrCl >30ml/min

For patients with CrCL < 30 mL/min and on hemodialysis contact hematology for AC recs prior to discharge.

DOACS SHOULD BE AVOIDED ON DISCHARGE IF CHILD-PUGH CLASS B OR C

References:

1. Thachil J, Tang N, Gando S, Falanga A, Cattaneo M, Levi M, Clark C, Iba T. ISTH interim guidance on recognition and management of coagulopathy in COVID-19. Available from: https://onlinelibrary.wiley.com/doi/epdf/10.1111/jth.14810. Accessed April 3, 2020.
2. Hunt B, Retter A, McClintock C. Practical guidance for the prevention of thrombosis and management of coagulopathy and disseminated intravascular coagulation of patients infection with COVID-19. Available from: https://thrombosisuk.org/downloads/T&H%20and%20COVID.pdf. Accessed April 3, 2020.
3. Tang N, Bai H, Chen X, Gong J, Li D, Sun Z. Anticoagulant treatment is associated with decreased mortaligy in severe coronavirus disease 2019 patients with coagulopathy. Available from ISTH Academy. Sun Z. March 23, 2020.
4. Eck R, Bult W, Wetterslev J, Gans R, Meijer K, Keus F, van der Horst I. Intermediate Dose Low-Molecular-Weight Heparin for Thrombosis Prophylaxis: Systemic Review with Meta-Analysis and Trial Sequential Analysis. Semin Thromb Hemos; 45(08): 810-824; 2019.