

ERCAST Show Notes

Editor-in-Chief: Rob Orman, MD

Associate Editor: Melissa Orman, MD

COVID-19: Dimers, Clots, and DIC

Rob Orman, MD and Tom DeLoughery, MD

Hematologist Tom Deloughery gives a primer on COVID-19 cytokine storm, d-dimer, DIC that leans toward thrombus, why some clots break through heparin, utility of low molecular weight heparin, and using TPA for ARDS (don't get too excited on that one quite yet).

We discuss:

- Great advice from Loren Rauch: we should reframe social distancing and instead think of it as physical distancing and social connectedness [0:00];
- Cytokine storm and why it happens in COVID-19 [3:30];
- How DIC and prothrombotic state are connected to cytokine storm [6:12];
- Reasons why some COVID-19 patients have elevated D-dimer [8:43];
- The association between elevated D-dimer and increased mortality [9:08];
- The significance of an elevated LDH [14:47];
- Why a standard approach to using unfractionated heparin might not work in COVID-19 thromboses [15:27];
- Anti-Xa levels and why they might be more advantageous than following PTT [15:58];
- Tom's preference for low molecular weight heparin in COVID-related DVT and strategies for management if there are breakthrough clots [16:54];
- When to change from therapeutic to prophylactic anticoagulation [22:32];
- COVID-19 effects on lymphocytes and hemoglobin [23:20];
- Elevated D-dimer summary [26:47];
- Case report of 3 patients given TPA for severe ARDS [28:01].

References and other stuff mentioned in this episode:

1. PulmCrit analysis of elevated D-dimer [Link](#)
2. REBEL EM thrombosis page [Link](#)
3. Cui S, et al. Prevalence of venous thromboembolism in patients with severe novel coronavirus pneumonia. *J Thromb Haemost.* April 2020. PMID: [32271988](#)
4. Pulm crit wee on this paper [Link](#)
5. Wang, J., et al. (2020), Tissue Plasminogen Activator (tPA) Treatment for COVID-19 Associated Acute Respiratory Distress Syndrome (ARDS): A Case Series. *J Thromb Haemost.* Accepted Author Manuscript. PMID: [32267998](#).
6. Zhou, Fei, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study." *The Lancet* (2020). PMID: [32171076](#)