



Pharmacovigilance Alert

BOP Pharmacovigilance Advisory Group



Date Prepared: 12/2/2020

Topic: COVID-19 and coagulopathy

Issue/Concern:

- Coagulopathy is one of the most significant prognostic factors in patients with COVID-19, and is associated with increased mortality and admission to higher levels of care¹. Clinicians are cautioned to be aware of subtle changes during POC anticoagulation testing.

Action/Response:

- What lab characteristics or monitoring parameters should be identified?
COVID-19 has the **potential to elevate coagulation studies**, particularly PT and aPTT². In the UK, it was reported that patients with COVID-19 yielded **supratherapeutic INR values**, with likely multifactorial causes³. COVID-19-associated coagulopathy tends to be characterized by increased D-dimer and fibrinogen levels.
- How does this factor into ambulatory care clinics?
Diarrhea is a potential condition that may be encountered in the clinic, which is likely to cause **supratherapeutic INR values** due to altered vitamin K intake and metabolism.^{1,4,5}
Consider converting eligible patients to a DOAC agent (i.e. apixaban), which reduces the need for frequent POC testing, clinical visits, and exposure to COVID-19 in the clinic setting.⁶
- How does this apply to non-critical (i.e. non-ICU) hospitalized care?
Should a patient need to be hospitalized or housed in acute care, shorter acting anticoagulants (i.e. LMWH) may be initiated in case of rapid clinical deterioration, changes in renal function, or need for invasive procedures⁶.
It is recommended that all non-critically ill hospitalized patients with confirmed or highly suspected COVID-19 receive standard doses of VTE prophylaxis (i.e. enoxaparin 40 mg daily)⁶.
Closely monitor patients with suspected coagulopathies complicated by COVID-19 via labs that evaluate hemostatic function, platelet counts, and abnormal coagulation¹.
- How should post-hospitalization care be approached?
Extended VTE prophylaxis is **not necessary** for all patients with COVID-19 who are discharged from the hospital, and should be determined on a case-by-case basis (e.g. low bleeding risk with ongoing VTE risk factors)⁶.
If indicated, enoxaparin 40 mg daily for 6 to 14 days can be the formulary option.

¹ DynaMed [Internet]. Ipswich (MA): EBSCO Information Services. 1995 - . Record No. T1579903929505, COVID-19 (Novel Coronavirus); [updated 2020 Jan 27, cited Nov 20, 2020]. Available from <https://www.dynamed.com/topics/dmp~AN~T1579903929505>. Registration and login required.

² Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Yi, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395:497–506

³ Medicines & Healthcare Products Regulatory Agency. Warfarin and other anticoagulants – monitoring of patients during the COVID-19 pandemic. GOV.UK. Published October 13, 2020. Accessed November 23, 2020. <https://www.gov.uk/government/publications/warfarin-and-other-anticoagulants-monitoring-of-patients-during-the-covid-19-pandemic/warfarin-and-other-anticoagulants-monitoring-of-patients-during-the-covid-19-pandemic>

⁴ Hull R, Garcia D, Vazquez S. UpToDate. UpToDate. Published September 17, 2019. Accessed November 23, 2020. <https://www.uptodate.com/contents/biology-of-warfarin-and-modulators-of-inr-control>

⁵ Lexicomp. Warfarin: Drug Information. UpToDate. Published 2020. Accessed November 23, 2020. <https://www.uptodate.com/contents/warfarin-drug-information>

⁶ Barnes, G.D., Burnett, A., Allen, A. et al. Thromboembolism and anticoagulant therapy during the COVID-19 pandemic: interim clinical guidance from the anticoagulation forum. *J Thromb Thrombolysis* **50**, 72–81 (2020). <https://doi.org/10.1007/s11239-020-02138-z>