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The management of venous thromboembolism in hospitalized patients with COVID-19

Alex C. Spyropoulos

Feinstein Institutes for Medical Research, The Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, New York, NY; and Anticoagulation and Clinical Thrombosis Services, Department of Medicine, Northwell Health at Lenox Hill Hospital, New York, NY

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Abstract

The high incidence of thromboembolic disease, and in particular venous thromboembolism (VTE), has emerged as an important consideration in hospitalized and critically ill patients with coronavirus disease 2019 (COVID-19). The coagulopathy of COVID-19 is postulated to result from interactions of the inflammatory and immune systems with the coagulation system, manifesting as a cytokine storm associated with hyperinflammation and coagulation and platelet activation. Unique characteristics of VTE in hospitalized and critically ill patients with COVID-19 include the high incidence of VTE (and especially pulmonary embolism) when compared with historical controls; the finding of in situ pulmonary embolism associated with microthrombi, which suggests a thrombotic microangiopathic process in addition to classic macrovessel disease; and, most important from a clinical perspective, the unusually high rate of VTE that has been reported despite standard thromboprophylaxis. This raises the possibility that intermediate or weight-based heparin dosing may be more effective than fixed dosing for thromboprophylaxis in high-risk subsets of patients hospitalized with COVID-19. There have been several guidance statements focusing on the management of VTE in hospitalized and critically ill patients with COVID-19, including the most recent statement by the Scientific and Standardization Committee of the International Society of Thrombosis and Haemostasis, which includes comprehensive guidance on the diagnosis, prevention, and treatment of VTE in this patient population. Ongoing randomized trials that address key clinical questions, especially more intense thromboprophylactic strategies and novel antithrombotic approaches, have the potential to reduce the morbidity and mortality from VTE in hospitalized and critically ill patients with COVID-19.

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The complete text of this *Blood Advances* Talk is available as a data supplement.

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ORCID profile: A.C.S., 0000-0002-3175-461X.

Correspondence: Alex C. Spyropoulos, Feinstein Institutes for Medical Research, Northwell Health at Lenox Hill Hospital, 130 E 77th St, New York, NY 10075; e-mail: aspyropoul@northwell.edu.