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A Systematic Approach for Managing Venous Thromboembolism in Patients with COVID-19: A Multinational Consensus Statement from the International Society on Thrombosis and Haemostasis (ISTH) on Behalf of the International Thrombosis Community

Introduction

With more than 6.7 million confirmed cases worldwide¹ and nearly 400,000 deaths to date (7th June 2020) during 2020,² the COVID-19 pandemic is one of the most significant healthcare crises of our time. The spread of COVID-19 has been varied, with some regions having sporadic transmission and relatively few hospitalized patients with COVID-19 pneumonia, and others where significant transmission has overwhelmed health services. While the disruption to health services continues, it is vital for the World Health Organization (WHO) to share the lessons of how best to prevent, diagnose, and treat patients with COVID-19 with health systems globally, and to learn about agreed clinical best practice approaches, which may improve patient outcomes.

The WHO should be congratulated on the publication of interim guidance on the Clinical Management of hospitalized patients with COVID-19³, the second iteration of which was published by the WHO in late May, which serves as a useful first step resource for health systems internationally. However, more must be done to meet the needs of front-line clinicians caring for patients with COVID-19 to ensure quality care, by addressing significant gaps in expert clinical guidance surrounding the prevention and management of venous thromboembolism (VTE) in COVID-19 patients.

COVID-19 and Venous Thromboembolism (VTE)

Venous thromboembolism (VTE) is a condition in which a blood clot forms most often in the deep veins of the leg, groin or arm (known as [deep vein thrombosis](#), DVT) and travels in the circulation, lodging in the lungs (known as [pulmonary embolism](#), PE). Together, DVT and PE are known as VTE - a dangerous, potentially deadly, medical condition.⁴ [Hospital-associated VTE](#) (describes VTE occurring in hospital and 90 days post discharge) accounts for 60% of all VTE.

Emerging research indicates that:

- **People with COVID-19, especially those hospitalized with the moderate (requiring supplementary oxygenation) and severe (requiring mechanical ventilation) COVID-19 pneumonia have a high incidence of VTE***
- **COVID-19 pneumonia is associated with a marked hypercoagulability, including high levels of fibrinogen and very high D-dimer levels;**
- **In patients with COVID-19 pneumonia, there is a major inflammatory response which can lead to micro-clots – immunothrombosis - within the lungs. This likely contributes to the high levels of mortality seen in patients with COVID-19 pneumonia;**