EDITORIAL (for December 2021 issue of JTH)

COVID-19 — two years in

The clinical impact of COVID-19 infection will remain in all our minds forever, and as members of the global scientific and clinical hemostasis community this pandemic has had an even greater impact than for many other biomedical disciplines.

The first report hinting at an association of the coronavirus infection with a coagulopathy was a manuscript received by JTH in mid-February 2020. In this report of a small cohort of severely ill patients from Wuhan, features suggestive of disseminated intravascular coagulation were described within just a few weeks of the initial recognition of this novel infectious disease. Subsequent experience with the hemostatic complications of COVID soon revealed a distinct pathophysiology marked by a profound prothrombotic tendency with evidence of both venous and arterial thrombotic events, and a marked increase in the development of in-situ pulmonary thrombosis.

During the rapid evolution of the clinical management of the COVID coagulopathy, marked elevation of D-dimer levels was soon recognized as an indicator of poor clinical outcome, and groups around the world responded quickly with the generation of many clinical trials evaluating different prophylactic schedules of antithrombotic therapies. While many of these trials focused on different dosing schedules of heparin, trials have also been undertaken evaluating the safety and efficacy of oral anticoagulants, anti-platelet agents, fibrinolytic therapies and the benefits of pre-hospitalization treatment with various forms of antithrombotic interventions.

The speed with which the clinical community reacted to the thrombotic dangers of COVID has been truly impressive, and coincident with these rapid management advances we have also

seen a dramatic increase in scientific reporting, with >1,500 COVID-related articles submitted to JTH alone. During this time, many observational studies have been published, and in recent months we have started to see the completion and reporting of large, randomized trials of antithrombotic treatments, whose relevance and application remain very timely as we continue to see many new cases of COVID-19. At the same time, we have seen a proliferation of basic science studies probing the mechanisms underlying COVID-19 induced coagulopathy. These studies have the potential to greatly increase our knowledge of how infection by SARS-CoV-2 and other viruses can wreak havoc with the host blood clotting system.

In 2021, a new clinical focus emerged: the complications reported following COVID vaccination. The vaccine induced thrombocytopenia and thrombosis syndrome reported as a rare event following one of the inactivated adenoviral vector-based vaccines has caught the attention of scientists, clinicians and the public. Once again, the rapidity of response to this critical pathophysiology has been unprecedented, with the development of diagnostic and treatment guidelines very quickly disseminated to the global population.

There is no doubt that the response of the hemostasis community to the COVID pandemic has been spectacular. The combined efforts of scientists and clinicians around the world have likely saved the lives of many thousands of patients who would otherwise have succumbed to the thrombotic complications of this infection. While the overall outcome of the pandemic will inevitably be catastrophic, we will all look for elements of good that might derive from these two years of madness. In this respect, the international hemostasis community can take immense credit for rising to this challenge with all the scientific and clinical knowledge available to its global membership.

Hopefully, 2022 will at last see some return to normality to our lives, but in the meantime, the pandemic has taught us a great deal about the implementation of effective translational science at a time of urgent necessity.

Wishing all our readership a happy and healthy end to 2021 and looking forward to a much better 2022.

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