

Coronavirus disease 2019 in pregnancy: consider thromboembolic disorders and thromboprophylaxis



TO THE EDITORS: Coronavirus disease 2019 (COVID-19) is caused by severe acute respiratory distress syndrome coronavirus 2. This syndrome generally begins with respiratory symptoms that may progress to single-organ dysfunction (ie, respiratory failure) and then to multiorgan failure and death. In nonpregnant patients admitted to the intensive care unit with COVID-19 pneumonia, the frequency of venous thromboembolic disorders is 25% (20 of 81) detected by ultrasound examination of the lower extremities.¹ In another series of 184 patients with confirmed COVID-19 pneumonia, 31% of patients had venous or arterial thromboembolism (defined as acute pulmonary embolism, ischemic stroke, deep vein thrombosis, or myocardial infarction).² The mechanism whereby viral infection causes multiorgan dysfunction is believed to involve the release of inflammatory cytokines³ that induce the production of tissue factor and activate thrombin. Elevated concentration of D-dimer (>1 µg/mL) is considered indirect evidence of increased thrombin generation and is associated with an increased risk of death (odds ratio, 18.4; 95% confidence interval, 2.6–128).⁴ Anticoagulant treatment with low-molecular-weight heparin has been associated with improved prognosis in patients with severe COVID-19 infection, stratified by sepsis-induced coagulopathy score or D-dimer results.⁵

The optimal management of pregnant women with COVID-19 poses multiple challenges, ranging from screening for the virus on admission to labor and delivery, to management of the acutely ill parturient, anesthesia, and protection of healthcare personnel.⁶ Although it was originally thought that pregnant women with COVID-19 were no more likely to develop severe morbidity or die, recent reports suggest that a subset may develop multiorgan failure and even die. Given that healthy pregnant women have evidence of increased generation of thrombin and a prothrombotic state, as well as increased intravascular inflammation that is exaggerated in the context of infection, such patients may be at an increased risk for thrombosis when affected by COVID-19. The International Society of Thrombosis and Haemostasis has generated a simple algorithm for the management of COVID-19 coagulopathy.⁷ The recommendation has been made that low-molecular-weight heparin be considered in all such patients. This body of evidence should be considered by obstetricians caring for pregnant women with COVID-19. A coagulation profile to detect the presence of subclinical disseminated intravascular coagulation and the use of

low-molecular-weight heparin for the prevention of thromboembolic disorders should be considered and discussed with physicians and patients. ■

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Preeclampsia—a disorder of uterine “stretch?”



TO THE EDITORS: In 1953, Sophian reported experiments inflating balloons in rabbit uteri and watching their kidneys turn white; he released the stretch, and renal blood flow was

promptly restored.¹ Dividing the uterorenal nerves abolished the reflex. He proposed that activating uterorenal nerves (cf, cardiorenal, hepatorenal, lienorenal, etc) was the mechanism