Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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CORRESPONDENCE

Thrombocytopenia in pregnant patients with mild COVID-19

Since its emergence in December 2019, the outbreak of novel coronavirus disease 2019 (COVID-19) has infected over 2 626 321 people globally.[1] COVID-19 is associated with wide variability in disease severity, ranging from asymptomatic to severe critical presentations. In initial data from China, mild thrombocytopenia was found to occur in just over a third of non-pregnant patients admitted to hospital with COVID-19. A more recent meta-analysis found that thrombocytopenia is associated with a three-fold greater risk of severe COVID-19.[2] However, thrombocytopenia has not been reported in paucisymptomatic patients. Data from pregnant women with COVID-19 remain scarce.

We wish to describe three pregnant patients, each presenting with a mild form of COVID-19 in which thrombocytopenia was observed. The patients presented to the emergency department during pregnancy because of fever and dry cough. Two were diagnosed with COVID-19 using reverse transcription-polymerase chain reaction (PCR) assay on nasopharyngeal swab. The PCR was negative in the third patient, but her chest computed tomography scan showed pulmonary lesions that were strongly linked to COVID-19.[3] The first patient presented at 40 weeks' gestation and had a platelet count nadir of 94×10^9/L. The second patient presented at 31 weeks' gestation and had a platelet count nadir of 79×10^9/L. Both these patients had a normal prothrombin time (PT), activated partial thromboplastin time (aPTT) and plasma fibrinogen concentration. The third patient, at a gestation of 37 weeks, had a lowest platelet count of 40×10^9/L and a prolonged aPTT, but normal values of Factors VIII, IX and XI. The hematological and liver function test results are shown in Table 1.

The first patient presented at term in spontaneous labor and had a cesarean delivery due to a non-reassuring fetal heart rate, with a conversion of labor epidural analgesia to surgical anesthesia. Delivery of the fetus was immediately followed by a 1000 mL postpartum hemorrhage due to uterine atony, which was successfully treated with sulprostone 500 μg infused over 60 min and tranexamic acid 1 g given intravenously. The second patient had an uneventful cesarean delivery under general anesthesia because of an increasing oxygen requirement two days after hospital admission. The third patient also underwent uneventful cesarean delivery under general anesthesia because of concerns about the severe thrombocytopenia. None of the patients received a platelet transfusion, and none subsequently developed a severe COVID-19 infection requiring intensive care.

To our knowledge, these are the first reports of thrombocytopenia during pregnancy related to mild COVID-19. Thrombocytopenia during pregnancy is quite common, with as many as 5–10% of patients being affected.[4] The major cause in late pregnancy is gestational thrombocytopenia, which mainly arises during the third trimester of pregnancy and is moderate. Two of the three patients we described were in the third trimester of pregnancy, but the platelet count was as low as 40×10^9/L in one case, making the diagnosis of late pregnancy thrombocytopenia unlikely. Another frequent cause of thrombocytopenia in pregnancy is pre-eclampsia but none of the patients had clinical features supporting this diagnosis. One patient did have mildly elevated liver transaminases, but this was attributed to COVID-19. None of our cohort developed severe COVID-19. In the only patient who required oxygen, this was started two days after the diagnosis of thrombocytopenia. These three cases are therefore at odds with the literature reporting thrombocytopenia in COVID-19, mostly as a marker of the severity of the disease.[2]

There is a paucity of data about pregnant patients during the COVID-19 pandemic. Epidural analgesia has been recommended in pregnant COVID-19 patients in labor in order to reduce the need for general anesthesia in the event of emergency cesarean delivery; general anesthesia is an aerosol-generating procedure associated with a higher risk of contamination of healthcare workers.[5] We suggest that, even in patients with mild

Table 1 Nadir of the platelet count and associated biological parameters for the three COVID-positive pregnant patients

Patient parameters	Normal values	1	2	3
Platelets ($\times 10^9$/L)	150–400	94	79	40
Prothrombin time (s)	12.9	13.2	11.9	12.2
Activated partial thromboplastin time (ratio)	<1.2	1.12	0.92	1.27
Plasma fibrinogen third trimester (g/L)	3.7–6.2	4.2	4.3	6.2
Serum transaminases: AST/ALT (IU/L)	<35	NA	27/16	46/37

NA: not available.

COVID-19, it is essential to have a recent platelet count on which to guide decision-making before insertion of an epidural catheter.

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