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SARS-CoV-2 causing septic shock in pregnancy

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Introduction

As we learn more about the paradigm of disease with SARS-CoV-2 infection, we are discovering severe multisystem involvement at an early stage, including sepsis and septic shock.[1]

Case report

In March 2020, a normally fit 39-year-old Asian woman of 37 weeks' gestation (G2P1) presented to the emergency department (ED) with a two-day history of fever, cough, dyspnoea, myalgia, headache and vomiting. She was pyrexial, tachypnoeic and tachycardic, but normotensive, alert and orientated, with oxygen saturations of 99% on air.

Blood tests showed a normal serum lactate, a lymphopenia of 0.2 x 10 /L, WCC 6 x 10 /L, CRP 34 mg/L and D-dimer of 609 ng/ml. Her urine contained ++ of ketones. A chest radiograph showed mild bi-basal infiltrates. Intravenous fluids and co-amoxiclav were commenced. The fetal heart rate in ED was normal. She was admitted with a persistent tachycardia and pyrexia.

The next day she had a syncopal collapse with severe hypotension. She regained consciousness on correction of her blood pressure with a fluid bolus and peripheral vasopressors. The fetal heart rate remained normal. She proceeded to develop visual hallucinations, fluctuating confusion, drowsiness and hypotension with transient response to fluids. Intravenous ceftriaxone and acyclovir cover for meningitis was started on microbiology advice.

We proceeded with an emergency caesarean section under general anaesthesia with peripheral vasopressor support and fluid resuscitation. A healthy baby was delivered, and postoperatively the woman was extubated successfully without an oxygen or vasopressor requirement.

Case report

Overnight post delivery, she became hypotensive, tachycardic and drowsy. A non-contrast CT brain was normal and a CT pulmonary angiogram (CTPA) showed bilateral peripheral opacification and ground glass halo. Troponin T, BNP and a transthoracic echocardiogram performed the next day were normal. Cerebrospinal fluid from a lumbar puncture showed only a slightly raised glucose. Her lymphocyte count remained low. On day two postoperatively she started requiring supplemental oxygen and her platelet count dropped from 102 to 88x10 /L. A repeat CTPA showed moderate to severe COVID-19 infection. Her PCR swab from admission was returned as positive for SARS-CoV-2 and all blood cultures came back as negative.

The diagnosis was confirmed as COVID-19 pneumonia with encephalopathy and thrombocytopenia. She made a complete recovery after three days on oxygen, and seven days in hospital.

Discussion

Whilst the risk of severe COVID-19 in healthy young adults is low, pregnancy is associated with an increased relative risk of severe disease, including the need for ICU admission.[2] Risk factors in pregnancy are high body mass index, chronic hypertension, pre-existing diabetes and age over 35 years.[2] Awareness of sepsis with COVID-19 is crucial to ensure early presentation and appropriate escalation in order to reduce morbidity and mortality.

References

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2. Allotey J, Stallings E, Bonet M, et al. Clinical Manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta -analysis. *BMJ* 2020; 370:m3320