

Post-COVID-19 condition: recommendations for pregnant individuals

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As novel mutations within the Omicron variant of the SARS-CoV-2 virus continue to drive COVID-19 cases globally, the prevalence of chronic complications following infection is likely to rise. Post-COVID-19 condition (or long COVID) is defined by WHO as new or persistent COVID-19 symptoms occurring three months after the onset of illness without an alternate diagnosis.¹ Commonly, these include fatigue, dyspnoea, chest pain, headache, memory loss, and neuropsychiatric features such as depression, and anxiety.²

Post-COVID-19 condition affects females more than males and can develop in about 10%–30% of people following acute infection during pregnancy.³ Currently, there are no guidelines for managing obstetric patients with post-COVID-19 condition. We propose an approach to individuals with post-COVID-19 condition who are planning to conceive or are already pregnant (Fig. 1).

Crucially, those with persistent dyspnoea or low oxygen saturations should be evaluated for chronic lung disease, cardiac dysfunction, and venous thromboembolism—sequelae which can occur after moderate-to-severe COVID-19 infection. Such patients must be monitored within a multi-disciplinary team for maternal deterioration with advancing gestation. Further, given that hypercoagulability can occur in post-COVID-19 condition owing to chronic endothelial inflammation, hyperactivated platelets, and fibrinolytic microclots, pregnancies should be assessed for fetal growth restriction from hypoxic placental insufficiency. While headache and chest discomfort are common in post-COVID-19 condition, worsening symptoms must be promptly assessed so as not to miss pregnancy-specific diagnoses such as pre-eclampsia.

In labour, early epidural analgesia and intravenous fluids could prevent autonomic instability in those with postural orthostatic tachycardia syndrome, while planned caesarean delivery might be necessary in individuals with severely reduced effort tolerance and fatigue. Additionally, prostaglandin F₂-alpha agonists (carboprost) should be avoided when managing postpartum haemorrhage in patients with significant pulmonary involvement in post-COVID-19 condition, given the drug-related risk of major bronchospasm. Although there are no interventions to prevent the development of post-COVID-19 condition, observational data suggest symptoms might improve following the SARS-CoV-2 vaccine⁴; in the context of pregnancy, we believe maternal vaccination, including booster doses, with the mRNA or protein subunit COVID-19 vaccine will similarly benefit the pregnant individual and the child.

Finally, we advocate for reporting pregnant individuals with post-COVID-19 condition to international registries and call on obstetric units to prospectively study the impact of post-COVID-19 condition on maternal and neonatal outcomes.⁵

Contributors

EM, GF, IB, PD, AP, and DB conceptualized the manuscript. EM, PD, and DB did the original draft. EM, GF, IB, PD, AP, and DB wrote the manuscript. EM, GF, IB, PD, AP, and DB reviewed and edited the manuscript.

Declaration of interests

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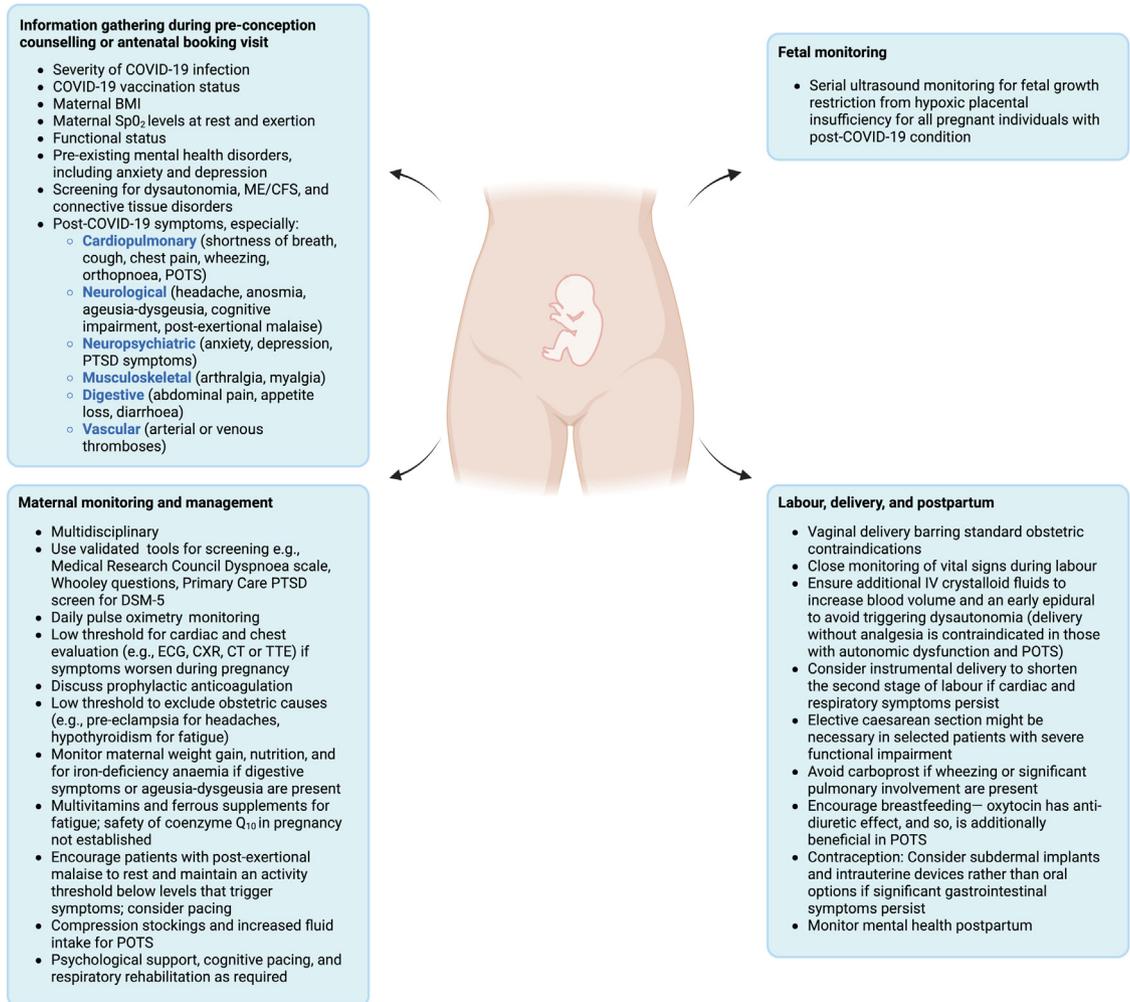


Fig. 1: Management of post-COVID-19 condition in pregnancy. The management of post-COVID-19 condition in pregnancy is adapted from that in non-pregnant adults.² BMI, body mass index; CT, computed tomography scan; CXR, chest x-ray; ECG, electrocardiogram; IV, intravenous; ME/CFS, myalgic encephalomyelitis/chronic fatigue syndrome; POTS, postural orthostatic tachycardia syndrome; PTSD, posttraumatic stress disorder; SpO₂, peripheral capillary oxygen saturation; TTE, transthoracic echocardiogram. Figure created by the authors with [BioRender.com](https://www.biorender.com) and exported with publication and licensing rights.

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