BRIGHAM HEALTH
BRIGHAM AND WOMEN'S HOSPITAL

Clinical Considerations for Pregnant Patients with COVID-19

Order	Recommended Patients	Clinical Rationale
Diagnostic Studies		
CBC and differential	All patients	Leukopenia common
Basic metabolic panel	All patients	Ensure adequate renal function
LFTs	All patients	Evaluate for transaminitis
Procalcitonin	Admitted patients	Trend to heighten concern for bacterial pneumonia
Troponin	Admitted patients	Evaluate baseline cardiac status (CK secreted by placenta, not reliable)
Ferritin	Admitted patients	Helpful for prognosis and trend
PT-INR, PTT, Fibrinogen	Admitted patients, patients with transaminitis	Evaluate for coagulopathy (normal fibrinogen can be first sign of DIC in pregnancy)
CRP	Consider in admitted patients	Can be elevated in pregnancy, more useful as trend
Urinalysis +/- Culture	Admitted febrile patients	Evaluate for alternate explanation for fever or superimposed infection
Blood Cultures	Admitted febrile patients	Evaluate for alternate explanation for fever or superimposed infection
Chest X-Ray	Admitted patients Low threshold for all patients	Helpful as trend and as potential triage tool for admission; evaluate for bacterial pneumonia
EKG	Admitted patients Patients with tachycardia	Obtain baseline for comparison, confirm sinus tachycardia
Transthoracic Echocardiogram (TTE)	Patients with subjective cardiac complaints or objective evidence of cardiovascular insult (hypotension, refractory tachycardia, troponinemia)	Evaluate for myocardial damage secondary to COVID or raise concern for cardiogenic pulmonary edema or cardiogenic shock related to COVID, pregnancy, or both
Chest CT	Clinical scenario where results may change management (e.g. concern for pulmonary embolism)	Chest CT safe in pregnancy but challenging in COVID patients due to exposure, may be technically limited in cases of tachypnea
Supportive Care		
Supplemental Oxygen via Nasal Cannula or Nonrebreather	Patients with O_2 < 95% on room air	Avoid High-Flow Nasal Cannula or BiPap due to provider exposure to aerosolization and likely chronicity of hypoxemia. Low threshold for elective intubation with increasing oxygen requirement or work of breathing

Lactated Ringers	Patients with clinical evidence of hypovolemia	Give in bolus doses of 250-500 ccs to assess clinical response (avoid maintenance IV fluids)
Dextrose-Containing Fluid	Patients kept NPO due to risk of intubation	Provide as maintenance fluids to avoid ketosis and subsequent metabolic acidosis
Medications		
Betamethasone	Consider for patients <34 weeks with high likelihood of delivery in 7 days	Gestational-age fetal risk must be balanced with theoretic potential for worsening maternal oxygenation in viral pneumonia
Subcutaneous Unfractionated Heparin	All admitted patients	Routine prophylaxis for venous thromboembolism with requirement to wait 4-6 hours before neuraxial analgesia
Insulin Sliding Scale	All patients with evidence of stress hyperglycemia on routine fingersticks	Maintain euglycemia
Hydroxychloroquine	Mild to moderate disease	Reassuring safety profile with minimal harm, likely works best if started early
Remdesivir	Severe disease	Antiviral available for compassionate use in pregnancy, animal models suggest safety, limited pregnancy data; theoretical efficacy to limit viral replication and ensuing immune response supporting early use
Tocilizumab	Refractory disease	IL-6 inhibitor with limited pregnancy safety data; likely blunts immune response
Azithromycin	Consider in mild to moderate disease or with concern for superimposed pneumonia	Anti-inflammatory effect may be useful to blunt response in COVID, treatment of atypical bacteria in community-acquired pneumonia (avoid doxycycline in pregnancy)
Ceftriaxone	Concern for superimposed pneumonia	Treatment of community acquired bacterial pathogens for pneumonia (avoid fluoroquinolones in pregnancy)
Monitoring		
Continuous Pulse Oximetry	All admitted patients	Provides real time assessment of pulmonary status with changes prompting clinical evaluation
Cardiac Telemetry	In cases of tachycardia or with concern for cardiac injury	Monitor for worsening cardiac status and evidence of arrhythmia
Nonstress Test	Daily for all admitted patients > 24 weeks	Reassurance of fetal status and potential to optimize maternal hemodynamics

Continuous Fetal Monitoring	Patients at gestational age where delivery may be considered or to obtain baseline in critically ill patients	Fetal monitoring plan individualized based on gestational age and maternal status
Obstetric Ultrasound	Consider for admitted patients	Assessment of fluid, cervical length (when appropriate) and fetal weight to complete fetal assessment and inform counseling
Consultations		
Maternal-Fetal Medicine or Obstetrics	All patients	Provide input on issues above including medication safety, hemodynamic parameters, fetal testing, mode and timing of delivery, and plan for follow up.
Infectious Disease	All admitted patients	Input on appropriate therapy and role of antibiotics for bacterial pneumonia
Cardiology	Patients admitted to floor with abnormal TTE, arrhythmias, or up trending cardiac biomarkers	Input on therapy (i.e. antiarrhythmics, diuresis) and monitoring
Anesthesiology	Patients at risk for spontaneous or indicated delivery or requiring 6 or more liters nasal cannula	Consideration of early neuraxial analgesia for possible delivery or early elective intubation in respiratory failure
Neonatology	Patients at risk for spontaneous or indicated delivery or requiring ICU-level care	Counseling for patients about neonatal outcomes and situational awareness of pregnant COVID patient
Intensive Care	Patients requiring 6 or more liters nasal cannula, fluid-refractory hypotension, or evidence of end-organ failure	Discussion of early transfer to critical care environment for close observation for patients at risk of rapid decompensation