

TWO PATIENTS WITH HEREDITARY ANGIOEDEMA TYPE 1 INFECTED WITH SARS-COV-2 DURING PREGNANCY

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Background: Hereditary angioedema (HAE) and Covid-19 have pathophysiologic overlap via the activation of complement, contact, and coagulation systems, and production of proinflammatory cytokines. Common pathway blockade through C1 esterase inhibitor (C1-INH) may dampen inflammation and improve outcomes. We describe two unvaccinated patients with HAE type 1 and Covid-19 during pregnancy.

Materials/Methods: SERPING1 sanger sequencing by GeneDx and PCR screening for Covid-19 by Texas Children's Hospital Laboratory.

Results: The 1st patient, a 20-year-old female with known HAE type 1 (SERPING1 c.707 T>C), presented at 22-weeks' gestation with abdominal pain and extremity swelling. She was maintained on subcutaneous C1-INH with disease control prior to presentation. She later reported loss of taste and smell. Intravenous C1-INH was administered with resolution of HAE flare symptoms. No fetal distress occurred. Her pregnancy progressed to 36 weeks, and she delivered a healthy newborn. The 2nd patient is a 24-year-old female with history of obesity (BMI 44), seizure disorder, and HAE type 1 (SERPING1 c.666_667delTC). She was on subcutaneous C1-INH with prior control. She developed respiratory symptoms at 27-weeks' gestation prompting hospitalization. She required supplemental oxygen by nasal cannula to maintain saturations. Rocephin and azithromycin were given for secondary bacterial pneumonia in the setting of Covid-19 infection, and remdesivir, dexamethasone, and baricitinib for her oxygen requirements. Notably, she lacked HAE flare symptoms and fetal distress. She was maintained on her home regimen of C1-INH. She discharged at 29 weeks and recently delivered a healthy newborn as well.

Conclusions: Pregnancy is an independent risk factor for severe disease in both Covid-19 and HAE. Pregnant women with Covid-19 have higher rates of hospitalizations, intensive care unit admissions, and greater requirements for mechanical ventilation. Despite having two independent risk factors for poor outcomes, our patients fared well. Obesity has also been linked to impaired immunity, a pro-inflammatory state, and severe illness with Covid-19. Their mild clinical course might be attributed to C1-INH therapy moderation of the Covid-19 inflammatory response. Studies are currently being conducted to investigate the effectiveness of C1-INH in decreasing severe inflammation associated with Covid-19, however our case highlights the importance of maintaining adequate therapy in HAE patients, particularly during pregnancy.

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