

The association between history of Severe Acute Respiratory Coronavirus 2 infection and altered glucose metabolism in pregnancy

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Objective

Severe Acute Respiratory Coronavirus 2 (SARS-Cov-2) infection may negatively affect insulin secretion. This is particularly important for pregnant patients, as even physiologic pregnancy represents a metabolic stress situation associated with a higher degree of insulin resistance with possible implications for mothers and offspring health. This study aims to assess parameters of glucose metabolism, prevalence of Gestational Diabetes Mellitus (GDM) and perinatal outcome in women with history of COVID-19 during pregnancy or before conception.

Methods

This study is designed as an open, mono-centre study with two parallel groups. 65 patients with history of COVID-19 infection and 94 controls were retrospectively recruited among pregnant women, who attended the pregnancy outpatient department (Department of Obstetrics and Gynecology, Medical University of Vienna) between 01/2020 and 12/2021. Informations were assessed from the patient charts including glucose data from the oral glucose tolerance test (OGTT), GDM status and obstetric complications.

Results

A total of 15 (23.1%) women in the COVID-19 group and 18 (19.1%) women in the control group developed GDM ($p=0.549$). Moreover, the differences in glucose values were modest and did not reach significance at fasting state (mean difference: -0.72 , 95%CI -3.6 to 2.2 mg/dl, $p=0.624$), as well as after 60 min (mean difference: -0.73 , 95%CI -18.2 to 3.6 mg/dl, $p=0.190$) or 120 min during the OGTT (mean difference: -0.2 , 95%CI -7.9 to 7.4 mg/dl, $p=0.953$). After excluding 18 patients with twin pregnancies the rate of caesarean section (35% vs. 40%, $p=0.494$) as well as weight percentiles were comparable between the groups (59.8 ± 31 vs. 59.8 ± 29 , $p=0.99$).

Conclusion

With this study we could not identify a possible impact of history of SARS-Cov-2 infection on the prevalence of GDM or glucose values during the OGTT. Moreover, the rate of caesarean sections and birth weight percentiles were comparable to mothers without history of SARS-Cov-2 infection.