Maternal and perinatal outcomes associated with SARS-CoV-2 infection during pregnancy, Florida, 2020–2021: A retrospective cohort study

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Abstract

Objective: To estimate risk of SARS-CoV-2 infection in pregnancy and assess adverse maternal and perinatal outcomes. Design: A population-based, retrospective cohort. Setting: Florida, USA. Population: All pregnancies with a live birth or fetal death from March 1, 2020 to April 30, 2021. Methods: COVID-19 case reports were matched to vital registries. Modified Poisson and multinomial logistic regression models were used to derive relative risk estimates. Main Outcome Measures: Infection in pregnancy, preterm birth, maternal or neonatal admission to and intensive care unit (ICU), fetal death. Results: Of 234,492 women with a live birth or fetal death during the study period, 12,976 (5.5%) were identified with COVID-19 during pregnancy. Risk factors for COVID-19 in pregnancy included Hispanic ethnicity (relative risk [RR]=1.89), Black race (RR=1.34), being unmarried (RR=1.04), and being overweight or obese pre-pregnancy (RR=1.08-1.32). COVID-19 during pregnancy was associated with preterm birth (RR=1.31), Cesarean delivery (RR=1.04), and neonatal (RR=1.17) and maternal (RR=3.10) ICU admission, but no association was found with increased risk of perinatal (RR=0.72) or fetal death (RR=0.86). Women infected during any trimester showed increased risk of preterm birth compared to women without COVID-19. Thirteen maternal deaths were identified among COVID-19 cases; of those who died, 11 were obese. The death rate was 20.53 per 10,000 among obese and 1.22 per 10,000 among non-obese gravida with COVID-19 during pregnancy (RR=16.88, P=0.001). Conclusions: Obesity is a risk factor for SARS-CoV-2 infection in pregnancy and for more severe COVID-19 illness among pregnant women. SARS-CoV-2 infection is associated with preterm birth.

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Premature birth		Trimester	n	aRR	Lower 95%	Upper 95%	P-value	
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		Т3	17	0.4515	0.2664	0.7650	0.0031	└── →