

A systematic evaluation of the mother-to-child transmission potential of SARS-CoV-2 infection during pregnancy

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August 27, 2020

Abstract

Objective This study aimed to comprehensively evaluate the clinical characteristics of COVID-19 in perinatal period, and systematically assess the mother-to-child transmission potential of SARS-CoV-2. **Design** A case retrospective study. **Setting and Population** We retrospectively analyzed the data of 23 pregnant patients in late pregnancy. **Methods** Maternal and neonatal throat swabs, vaginal secretions, placenta tissues, and breast milk, were collected for the nucleic acid test of the virus. Pregnancy outcomes and neonatal results were also analyzed. **Main Outcome Measures** The result of viral nucleic acid test and pregnancy outcomes. **Results** Overall, 10 patients (43.5%) had no symptoms and were found by routine chest CT. Complications appeared after COVID-19 onset included PROM (17.4%) and fetal distress (4.3%). Typical signs of viral pneumonia were recorded in chest CT of all patients. No patients developed severe pneumonia or died of COVID-19. All of 25 neonates were born alive. No severe asphyxia or neonatal death was observed. Although three neonates were tested transiently suspected positive for SARS-CoV-2 after being transferred to neonatology department, no newborns developed COVID-19. Only a rectal swab sample from one pregnant patient was tested positive for SARS-CoV-2, while all the other clinical specimens including first sample of newborn throat swabs were negative. Pathological examination found no obvious chorioamnionitis or clear virus inclusion body in placenta, and ACE2 (angiotension-converting enzyme 2) was expressed at a moderate level. **Conclusions** Asymptomatic patients were present in pregnant women. There is no confirmatory evidence for mother-to-child transmission in COVID-19 patients with late pregnancy.

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