ABSTRACT

Current evidence suggests that coronavirus disease 2019 (COVID-19), caused by severe respiratory syndrome coronavirus 2 (SARS-CoV-2), is predominantly transmitted from human-to-human. However, evidence on vertical transmission and natural passive immunity among the newborns exposed to COVID-19 is scanty and varies. This poses a challenge on preventive interventions for the newborns. We conducted a systematic review to first, determine the likelihood of vertical transmission among COVID-19 exposed infants and second, determine whether antibodies against SARS-CoV-2 were generated among COVID-19 vertically exposed but negative infants. This review registered in PROSPERO searched evidence from PubMed/MEDLINE and Google Scholar, among others. About 517 studies were pooled, where 33 articles (5.8%) met the inclusion criteria such as infection prevention and control measures at birth. A total of 205 infants born to COVID-19 positive mothers were studied. Overall, 6.3% (13/205; 95% CI: 3.0%–9.7%) of the infants tested positive for COVID-19 virus at birth. Of 33 eligible studies, six studies (18.8%) reported about immunoglobulin G/M (IgG/IgM) against SARS-CoV-2. IgG/IgM were detected in 90% infants (10/11; 95% CI: 73.9%–107.9%) who tested negative for COVID-19 virus. The median antibody levels detected were 75.49 AU/ml (range, 7.25–140.32 AU/ml) and 3.79 AU/ml (range, 0.16–45.83 AU/ml), $p = .0041$ for IgG and IgM, respectively. In conclusion, the current evidence revealed a low possibility of vertical transmission of COVID-19 and antibodies against SARS-CoV-2 were detected among vertically exposed but negative infants. Further studies on transplacental transmission and the magnitude of natural passive immunity in infants born to mothers with COVID-19 are warranted. transmission and antibodies against COVID-19 are warranted.