

Perinatal Vertical Transmission of Coronavirus Disease 2019 (COVID-19); A Remarkable Challenge for Healthcare Systems

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Transmission of viral infections from mother to fetus is an important issue as it can affect both the maternal and neonatal pregnancy outcomes.

The world is currently struggling with COVID-19 which has affected all countries regardless of their economic status. There exist similarities between the genetics of COVID-19 and other members of Coronavirus family, including SARS and MERS (1); therefore, it has been supposed that similar to SARS and MERS (2), COVID-19 has no vertical transmission (3). However, two systematic review studies provided some evidence which pointed to the contrary (4, 5). In a meta-analysis conducted by Kotlyar and colleagues the risk of vertical transmission from the infected mother to her baby was reported to be about 3.2% (5). This report is very important to healthcare systems as certain protocols have to be considered in screening babies born of infected mothers. Furthermore, there are still many questionable issues surrounding the behavior of agile COVID-19.

Due to the scarcity of information, we are not sure about the congenital defect which may be caused by the vertical transmission of COVID-19 during weeks 3-8, which is the organogenesis time. Furthermore, the infected mothers may present a variety of manifestations from asymptomatic to very severe ones which require admission to intensive care unit (ICU). However, there is no robust evidence introducing a cut-off level for viral load; this raises suspicion as to the vertical transmission of the disease from infected mothers to their fetus. Besides, each virus can affect a specific organ, which should be screened more carefully by further measures such as ultrasonography.

One of the indications for caesarean section (C-section) is maternal infection with COVID-19 during delivery (6); some reports, however, showed infected mothers gave birth to their babies through

normal vaginal delivery (NVD) (4). It is highly important that healthcare systems be aware of risks of transmission from infected mothers to the baby while passing through the birth canal. In such cases, C-section could be considered for all mothers infected with COVID-19 at the time of delivery. The question remains as to whether we should test all mothers prior to delivery, while the real-time RT-PCR test cannot be considered as a golden diagnostic test (7) due to its considerable false positive and false negative results.

Another important issue is breast feeding. While the benefits of breastfeeding for both the mother and the child are undoubtable, some reports have mentioned the transmission of COVID-19 through breast milk. According to a meta-analysis conducted by Kotlyar and colleagues the risk of COVID-19 transmission from infected mother to the newborn through breast milk was 4.2% (5). Although, the risk is not high, it is considerable so, it is necessary to conduct more research on the duration of viral transmission and preventive measures in this regard.

In conclusion, researchers and health policymakers should be more cautious regarding predicting of the behavior of COVID-19 or human being will be always behind this agile tiny particle.

Conflict of interest

The authors declared no conflict of interest.

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