



VERTICAL TRANSMISSION OF SARS-COV DURING PREGNANCY ; A REVIEW

Gynaecology

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KEYWORDS

Background:

Since early December 2019, the Coronavirus Disease 19 (COVID-19) infection has been prevalent in China and eventually spread to other countries and became a pandemic. Although few articles have been published regarding the cases of COVID-19 occurring during pregnancy and there can be the possibility of mother to fetal vertical transmission. However, there are still concerns that the fetuses may be at risk of congenital Coronavirus infection.

Methods:

We reviewed the risk of vertical transmission of COVID-19 to the fetus of infected mothers by using data of 65 published articles, case reports, case series or official websites.

Results:

Out of total of 65 articles reviewed with a total of approximately 500 infected pregnant mothers with COVID-19 were reported. No COVID-19 infection was detected in their neonates or placentas by rt-PCR.

Conclusions:

Currently, based on limited data, there is no evidence for intrauterine transmission of COVID-19 from infected pregnant women to their fetuses. Mothers may be at increased risk for more severe respiratory complications.

REFERENCES

- Rasmussen SA, Smulian JC, Lednicki JA, Wen TS, Jamieson DJ. Coronavirus Disease 2019 (COVID-19) and pregnancy: what obstetricians need to know. *Am J Obstet Gynecol*. 2020. pii: S0002-9378(20)30197-6. doi: 10.1016/j.ajog.2020.02.017. [Epub ahead of print]. - DOI - PMC - PubMed
- Working Group for the Prevention and Control of Neonatal 2019-nCoV Infection in the Perinatal Period of the Editorial Committee of Chinese Journal of Contemporary Pediatrics [Perinatal and neonatal management plan for prevention and control of 2019 novel coronavirus infection (1st Edition)]. *Zhongguo Dang Dai Er Ke Za Zhi*. 2020;22:87-90. - PubMed
- Schwartz DA, Graham AL. Potential maternal and infant outcomes from (Wuhan) Coronavirus 2019-nCoV infecting pregnant women: lessons from SARS, MERS, and other human coronavirus infections. *Viruses*. 2020;12(2):194. doi:10.3390/v12020. - DOI - PMC - PubMed
- Ma K, Chen T, Han MF, Guo W, Ning Q. [Management and clinical thinking of Coronavirus Disease 2019]. *Zhonghua Gan Zang Bing Za Zhi*. 2020;28:E002. doi:10.3760/cma.j.issn.1007-3418.2020.0002. - DOI - PubMed
- World Health Organization Coronavirus disease (COVID-19) outbreak; n.d. [accessed 2020 Mar 4]. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.
- Gorbalenya AE. Severe acute respiratory syndrome-related coronavirus—the species and its viruses, a statement of the Coronavirus Study Group. *BioRxiv*. 2020:2020.02.07.937862. doi:10.1101/2020.02.07.937862. - DOI
- Zhu ZB, Zhong CK, Zhang KX, Dong C, Peng H, Xu T, Wang AL, Guo ZR, Zhang YH. [Epidemic trend of corona virus disease 2019 (COVID-19) in mainland China]. *Zhonghua Yu Fang Yi Xue Za Zhi*. 2020;54:E022. doi:10.3760/cma.j.cn112150-20200222-00163. - DOI - PubMed
- Yang HY, Duan GC. [Analysis on the epidemic factors for the corona virus disease]. *Zhonghua Yu Fang Yi Xue Za Zhi*. 2020;54:E021. doi:10.3760/cma.j.cn112150-20200227-00196. - DOI - PubMed
- Berkowitz K, LaSala A. Risk factors associated with the increasing prevalence of pneumonia during pregnancy. *Am J Obstet Gynecol*. 1990;163:981-5. doi:10.1016/0002-9378(90)91109-p. - DOI - PubMed
- Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases. Interim infection prevention and control recommendations for patients with confirmed 2019 novel coronavirus (2019-nCoV) or patients under investigation for 2019-nCoV in healthcare settings. Centers for Disease Control and Prevention; 2020 Feb 28 [accessed 2020 Mar 4]. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html>.
- Tasnim Agency. Birth of a neonate from infected mother COVID-19 in Babol city; 2020 Mar 3 [Accessed 2020 Mar 4]. <https://www.tasnimnews.com/fa/news/1398/12/14/2216407/>.
- Chen S, Huang B, Luo DJ, Li X, Yang F, Zhao Y, Nie X, Huang BX. [Pregnant women with new coronavirus infection: a clinical characteristics and placental pathological analysis of three cases]. *Zhonghua Bing Li Xue Za Zhi*. 2020;49:E005. doi:10.3760/cma.j.cn112151-20200225-00138. - DOI - PubMed
- Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, Li J, Zhao D, Xu D, Gong Q, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *Lancet*. 2020;395(10226):809-15. doi:10.1016/S0140-6736(20)30360-3. - DOI - PMC - PubMed
- Zhang L, Jiang Y, Wei M, Cheng BH, Zhou XC, Li J, Tian JH, Dong L, Hu RH. [Analysis of the pregnancy outcomes in pregnant women with COVID-19 in Hubei Province]. *Zhonghua Fu Chan Ke Za Zhi*. 2020;55(0):E009. doi:10.3760/cma.j.cn112141-20200218-00111. - DOI - PubMed
- Lam CM, Wong SF, Leung TN, Chow KM, Yu WC, Wong TY, Lai ST, Ho LC. A case-controlled study comparing clinical course and outcomes of pregnant and non-pregnant women with severe acute respiratory syndrome. *BJOG*. 2004;111:771-4. doi:10.1111/j.1471-0528.2004.00199.x. - DOI - PMC - PubMed
- Robertson CA, Lowther SA, Birch T, Tan C, Sorhage F, Stockman L, McDonald C, Lingappa JR, Bresnitz E. SARS and pregnancy: a case report. *Emerg Infect Dis*. 2004;10:345-8. doi:10.3201/eid1002.030736. - DOI - PMC - PubMed
- Yudin MH, Steele DM, Sgro MD, Read SE, Kopplin P, Gough KA. Severe acute respiratory syndrome in pregnancy. *Obstet Gynecol*. 2005;105:124-7. doi:10.1097/01.AOG.0000151598.49129.de. - DOI - PubMed
- Maxwell C, McGeer A, Tai KFY, Sermer M. No. 225-Management guidelines for obstetric patients and neonates born to mothers with suspected or probable severe acute respiratory syndrome (SARS). *J Obstet Gynaecol Can*. 2017;39:e130-7. doi:10.1016/j.jogc.2017.04.024. - DOI - PMC - PubMed
- Ng PC, Leung CW, Chiu WK, Wong SF, Hon E. SARS in newborns and children. *Biol Neonate*. 2004;85:293-8. doi:10.1159/000078174. - DOI - PubMed
- An Analysis of 38 Pregnant Women With COVID-19, Their Newborn Infants, and Maternal-Fetal Transmission of SARS-CoV-2: Maternal Coronavirus Infections and Pregnancy Outcomes. David A Schwartz, PMID: 32180426. DOI: 10.5858/arpa.2020-0901-SA
- Vertical Transmission of Coronavirus Disease 19 (COVID- From Infected Pregnant Mothers to Neonates: A Review Mojgan Karimi-Zarchi 1 2, Hossein Neamatzadeh 3 4, Seyed Alireza Dastgheib 5, Hajar Abbasi 6, Seyed Reza Mirjalili 4 7, Athena Behforouz 6, Farzad Ferdosian 7 8, Reza Bahrami 9