

COVID 19 and the impact on the beginning of life

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ABSTRACT

COVID 19 is a pandemic that has crippled the world. The disease process started in the Hubei province of China, but has been successfully confirmed in 181 countries at the time of this article. Much of the data and literature have centered around the adult population and there have been few reports pertaining to COVID 19 and pregnancy. There have been even fewer studies addressing breastfeeding in postpartum mothers affected with COVID 19.

The purpose of our study was to review and compile the literature addressing whether breastfeeding was a safe and viable option following delivery in COVID 19 mothers.

Methods:

We searched PubMed, Medline, Google Scholar, Scopus, Embase to find potential studies. Data mining was focused around COVID 19 positive pregnancies with subsequent breastfeeding

Results:

We found 12 studies that were pertinent to our topic. Delivery methods were varied, with most studies calling for vaginal delivery, unless established criteria were met for a caesarean section. Breastfeeding was recommended in both studies and ultimately citing human milk was not a vector in viral transmission.¹³

Discussion:

There is sparse literature studying the effects of breastfeeding on infants born to mothers who have tested positive for COVID 19. The benefits of breastfeeding are clearly significant,

however the disease is known to carry significant mortality for the immune compromised and the immune naïve patient population.

Key Words: COVID 19, pandemic, pregnancy, breastfeeding, immune compromised, newborns, infants,

COVID 19 is a pandemic that has crippled the world. First described in the Hubei province of China in late 2019, the virus has since been confirmed in 181 countries. COVID 19 is caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Corona Virus). Multiple sources have cited significant mortality, with the Johns Hopkins University Coronavirus Resource Center reporting 1.2 million cases, and 64,606 deaths.¹

While there has been significant data and literature encompassing the spread, virology, diagnosis and treatment of the disease entity in adults, there has been little addressing pregnancy. Furthermore, post partum, the question of breast feeding has remained almost unanswered with very little data in the literature. The question of vertical transmission has yet to be firmly answered. The disease is spread via droplets, and possibly aerosolized during certain procedures, however, the question remains if the virus is transmitted via breast milk, and are the transitive protective properties of breast milk transcended by the morbidity and mortality of the virus.

The purpose of this paper was to investigate the literature and determine if breastfeeding was safe post partum in COVID 19 mothers.

We searched PubMed, Medline, Google Scholar, Scopus, Embase to find potential studies. Data mining was focused around COVID 19 positive pregnancies with subsequent breastfeeding.

We found 12 studies that were pertinent to our topic.²⁻¹³ Only 2 of the 10 looked at breastfeeding in the postpartum COVID 19 patient cohort.^{12,13} Diagnosis of the pregnant patients was established using real time reverse transcriptase polymerase chain reaction, RT-PCR and diagnostic imaging, CT Chest. There was a single study that reported vertical transmission at 14.2%, however this was not substantiated by other data.⁵ Two studies tested the products of conception for presence of SAR-CoV-2 and none was reported, 0%.^{10,11} Delivery methods were varied, with most studies calling for vaginal delivery, unless established criteria were met for a caesarean section, however there was an outlier study, citing caesarean section for 84.3% patients.^{5,6,8,12} Breastfeeding was recommended in both studies and ultimately citing human milk was not a vector in viral transmission.¹³

COVID 19 in a novel disease process. Much of the literature is centered around the patients affected and thus the pregnancy population comprises only a small subset. The breastfeeding contingent is further smaller in number. The gravid patient population did exhibit the same clinical symptoms as the remaining COVID 19 population, consisting of fever, cough and fatigue.⁵ Diagnosis was established using laboratory testing and diagnostic imaging. The CT chest depicted the classic findings described in COVID 19. Ground glass opacities in the peripheral lung parenchyma in the setting of clinical symptoms have a sensitivity and specificity

upwards of 90%.^{5,14,15,16} RT-PCR was used to confirm the diagnosis from sputum and nasopharyngeal swabs.^{4,7}

The benefit of breastfeeding has long been established. The transmission of important immunological factors along with the psychosocial aspects of bonding are not being questioned or challenged. The question of COVID 19 spread to an immune naïve newborn, however, have yet to be answered. Data from Italy conferred that direct breastfeeding was allowable under “strict measures of infectious control” thus implying that the transmission was not spread via milk bodily fluids.¹² The second study, much larger, from the United Kingdom also concurred with these findings.¹³ However the total number of patients studied was insufficient to arrive at a definitive conclusion. Although the disease process is not thought to spread via vertical transmission, save one publication, the continual close proximity of the affected mother and newborn do raise some concerns. Even the single case of reported vertical transmission could have been attributed to post partum care, rather than antepartum spread. Until more data and studies are available, we recommend a cautious approach to breast feeding. Furthermore, we recommend a baseline RT-PCR on the newborn, and should the baby exhibit any signs of fever, decreased appetite or a change in clinical condition, we recommend cessation of breast feeding and repeat testing for COVID 19. The benefit of breast feeding, although crucial and beneficial, is yet to be accurately weight against the paramount devastation of this novel virus.

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