# Isolation of antibodies from breast milk as a cure to Covid-19

Omer Ahmed Shaikh,[1] Gulrukh Shaikh,[2] Rameel Muhammad Aftab[3]

Madam, the current Coronavirus disease (COVID-19) was first identified around the end of 2019 in Wuhan, China and was declared a global pandemic by WHO a few months after, in March 2020. Since then, the Coronavirus caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is of great concern to human life, affecting around 24.8 million people worldwide and causing 5.3 million lives to succumb to it as of 15th December'2021.[1] Even though vaccines against the virus have readily been made available to the population, with new strains of the virus coming to light every few months, the end still seems bleak. As part of the body's innate mechanism, antibodies develop against a pathogen after one's been exposed to it. Antibodies also make up a considerable composition of breast milk that provide immune protection to the neonates against diseases such as gastrointestinal tract infections, respiratory infections and middle ear infections.[2]

COVID-19 targets individuals of all age groups, however in neonates the positivity ratio is considerably lower. While vertical transmission of COVID-19 has been a topic of much debate, there has been no definitive evidence to prove the phenomenon.[3] Currently studies state that there is no concrete proof confirming the association of COVID-19 and its spread via breast milk.[3]

In a recent study by Rebecca Powell, strong associations were made between antibodies present in breast milk and COVID-19. After taking and assessing donated milk samples of eight COVID-19 recovered and seven COVID-19 suspected lactating females, it was found that milk from all COVID-19 recovered individuals showed notable SARS-CoV-2 specific IgA reactivity, suggesting that breast milk may contain immunoglobulins protective against the novel Coronavirus.[4] In another study, it was found that a woman who tested positive for COVID-19 had discoverable IgG and IgA in breast milk. Her newborn infant tested negative for the Virus at birth but showed an elevated IgG in serum,[5] re-establishing our prior argument about the presence of COVID-19 antibodies in breast milk.

Though, yet not fully researched, this discovery could possibly be a revolutionary step towards formulating a preventive measure to the Virus, thus helping eradicate the pandemic. The severity of neonatal complications arising with the malady may be drastically reduced. A more scientific research and thorough analysis to this finding is required to prove a causal relationship between the disease and antibodies present in breast milk.

**Disclaimer:** None to declare.

**Conflict of Interest:** None to declare.

**Funding Sources:** None to declare.

## References

1. COVID Live count from the WHO Coronavirus (COVID-19) Dashboard. [Online] [Cited 2021 December 15]. Available from: URL: https://covid19.who.int.
2. Van de Perre P. Transfer of antibody via mother's milk. Vaccine. 2003; 21:3374-6.
3. Neef V, Buxmann H, Rabenau HF, Zacharowski K, Raimann FJ. Characterization of neonates born to mothers with SARS-CoV-2 infection: Review and meta-analysis. Pediatr Neonatol. 2021; 62:11-20.
4. Fox A, Marino J, Amanat F, Krammer F, Hahn-Holbrook J, Zolla-Pazner S. Robust and Specific Secretory IgA Against SARS-CoV-2 Detected in Human Milk. iScience. 2020; 23:101735.
5. Dong Y, Chi X, Hai H, Sun L, Zhang M, Xie WF. Antibodies in the breast milk of a maternal woman with COVID-19. Emerg Microbes Infect. 2020; 9:1467-9.

[1,3]4th Year MBBS Student, Ziauddin Medical University, Karachi, [2]5th Year MBBS Student, Liaquat National Hospital & Medical College, Karachi, Pakistan.
**Correspondence:** Omer Ahmed Shaikh. Email: omerahmedshaikh@gmail.com

**DOI: https://doi.org/10.47391/JPMA.6204**