



COVID-19 Infection in Newborn Infants

Dwayne Mascarenhas¹ · Medha Goyal¹ · Nitu Mundhra¹ · Anitha Haribalakrishna¹ · Ruchi Nanavati¹ · Gita Nataraj²

Received: 21 August 2020 / Accepted: 20 November 2020 / Published online: 27 November 2020
© Dr. K C Chaudhuri Foundation 2020

To the Editor: Coronavirus disease 2019 (COVID-19) is an ongoing pandemic with over forty million cases and one million deaths globally (October 2020) [1]. The disease has shown considerable morbidity and mortality, but there is paucity of neonatal literature [2–4]. We herein describe the clinical course of three COVID-19 positive neonates adding to the growing body of evidence.

Case 1: Term male, weighing 3142 g tested COVID-19 positive on day seven of life. He was evaluated using a nasopharyngeal swab by reverse transcriptase polymerase, following maternal detection of COVID-19 on post-partum day three, as she had developed fever with cough. The neonate had a dry cough and multiple episodes of vomiting after feeding. His laboratory parameters showed elevated lactate dehydrogenase (1496 U/L) and creatine kinase (336.8 U/L). He also developed IgM antibodies on day 12, though IgG remained negative. The neonate clinically improved, but his repeat swabs on day 12, 16, and 22 remained positive.

Case 2: Term male, weighing 3714 g whose mother developed fever on post-partum day seven and tested positive for COVID-19. The neonate's nasopharyngeal swab done on day nine was positive. He remained asymptomatic and his investigations were normal, but repeat swabs on day 12, 16, and 23 were positive.

Case 3: Term female, weighing 3560 g whose nasopharyngeal swab done at 35 h of life was positive. Her mother had fever and tested COVID-19 positive on post-partum day one. The neonate had a dry cough and raised lactate dehydrogenase

(1569 U/L) and creatine kinase (551 U/L). There was clinical improvement, but positive swabs on day 6 and 19 were noted in the neonate.

All cases were managed with supportive care and discharged after explaining precautions.

As all neonates were roomed-in and exclusively breastfed, horizontal transmission from infected mothers appears probable. Persistence of positive swab could be due to variation in neonatal immunological response. Delayed appearance of symptoms in neonates, highlights the need of close monitoring. Elevation of laboratory parameters was also noted by Wang et al, suggesting a sub-clinical multisystemic involvement [2]. Neonatal COVID-19 appears to have a varied presentation, with most reports describing a mild nature of disease [2–4].

Acknowledgements The authors thank Dr. Hemant Deshmukh, Dean, Seth GS Medical College and KEM Hospital, Mumbai for granting permission for publication.

Compliance with Ethical Standards

Conflict of Interest None.

References

1. World meter D. COVID-19 coronavirus pandemic. Available at: <https://www.worldometers.info/coronavirus>. Accessed 22 Oct 2020.
2. Wang S, Guo L, Chen L, et al. A case report of neonatal 2019 coronavirus disease in China. *Clin Infect Dis*. 2020;71(15):853–7.
3. Zeng L, Xia S, Yuan W, et al. Neonatal early-onset infection with SARS-CoV-2 in 33 neonates born to mothers with COVID-19 in Wuhan, China. *JAMA Pediatr*. 2020;174(7):722–5.
4. Zhang ZJ, Yu XJ, Fu T, et al. Novel coronavirus infection in newborn babies aged <28 days in China. *Eur Respir J*. 2020;55(6):2000697.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Dwayne Mascarenhas
drdwaynem@gmail.com

¹ Department of Neonatology, Seth GS Medical College and King Edward Memorial Hospital, Parel, Mumbai, Maharashtra 400 012, India

² Department of Microbiology, Seth GS Medical College and King Edward Memorial Hospital, Mumbai, Maharashtra, India