In-Hospital Respiratory Viral Infections for Patients with Established BPD in the SARS-CoV-2 Era

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Abstract

Objective Our objective was to test the hypothesis that in-hospital respiratory viral infections (RVI) would be significantly lower in a cohort of patients with established bronchopulmonary dysplasia in the SARS-CoV-2 era when compared to historical controls. Study Design On April 1, 2020, we implemented a universal infection prevention bundle to minimize the risk of nosocomial SARS-CoV-2 transmission in a dedicated BPD intensive care unit. We performed a retrospective cohort study and included patients with established BPD, as defined by the 2019 Neonatal Research Network criteria, admitted to our center who underwent real-time polymerase-chain-reaction RVI testing between January 1, 2015 and March 31, 2021. We excluded patients re-admitted from home. We compared to number of tests performed, the proportion of positive tests, and the distribution of viral respiratory pathogens in the pre- and post-SARS-CoV-2 eras. Results Among 176 patients included in the sudy, 663 RVI tests were performed and 172 (26%) tests were positive. The median number of tests performed, measured in tests per patient per month, in the SARS-CoV-2 era was not significantly different compared to the pre-SARS-CoV-2 era (0.45 vs 0.34 tests per patient per month, P = 0.07). The proportion of positive RVI tests was significantly lower in the SARS-CoV-2 era when compared to the pre-SARS-CoV-2 era (0.06 vs 0.30, P<0.0001). No patients tested positive for SARS-CoV-2 in the SARS-CoV-2 era. Conclusions Infection prevention measures developed in response to the SARS-CoV-2 pandemic may reduce the risk of RVIs in hospitalized patients with established BPD.

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