How has the SARS-CoV-2 pandemic changed the epidemiology and management of acute bronchiolitis?

Giacomo Brisca[1], Marcello Mariani[1], Silvia Buratti[1], Marta Ferretti[1], Daniela Pirlo[1], Isabella Buffoni[1], Marisa Mallamaci[1], Pietro Salvati[1], Giulia Tagliarini[2], Emanuela Piccotti[1], Oliviero Sacco[1], Elio Castagnola[1], and Andrea Moscatelli[1]

[1]Istituto Giannina Gaslini
[2]Universita degli Studi di Genova Dipartimento di Neuroscienze Riabilitazione Oftalmologia Genetica e Scienze Materno-Infantili

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Abstract

Objective: SARS-COV-2 pandemic had a profound impact on acute bronchiolitis epidemiology, especially in RSV diffusion and the burden of disease with implications on the management of prophylaxis and health resources. We aimed to compare clinical and epidemiological characteristics of bronchiolitis before and during the SARS-CoV-2 pandemic. **Methods**: We conducted an observational study involving children aged 0-2 years with bronchiolitis admitted to a tertiary children's hospital during the last 5 years. Demographic, clinical, microbiological, and outcome data were collected. Comparison between pre- and post-pandemic period, RSV positive versus non-RSV patients, and SARS-CoV-2 positive vs negative patients were carried out. **Results**: A total of 647 patients admitted for bronchiolitis were included (264 female,40.8%, median age 78 days). Molecular diagnostic tests were performed in 617 patients (95.4%) with RSV detected in 62.5% of patients. SARS-CoV-2 was found in 3.9% of hospitalized bronchiolitis (3.9%). We observed a progressive increase in bronchiolitis admissions and a statistically significant increase over the years in the need for respiratory support. Conversely, this was not true for mechanical ventilation, duration of respiratory support, ICU admission, and length of stay. During the pandemic period children with prematurity increased, although only 1 child had an indication for prophylaxis. **Discussion**: We confirm the stronger impact of bronchiolitis in the 2021-22 season, which is likely explained by the higher prevalence of RSV and the immunity debt theory. However, our findings were conflicting in terms of worsening clinical severity. The increase of children with prematurity and the inter-seasonal spread of RSV highlight the importance of epidemiological surveillance systems that monitor RSV circulation.

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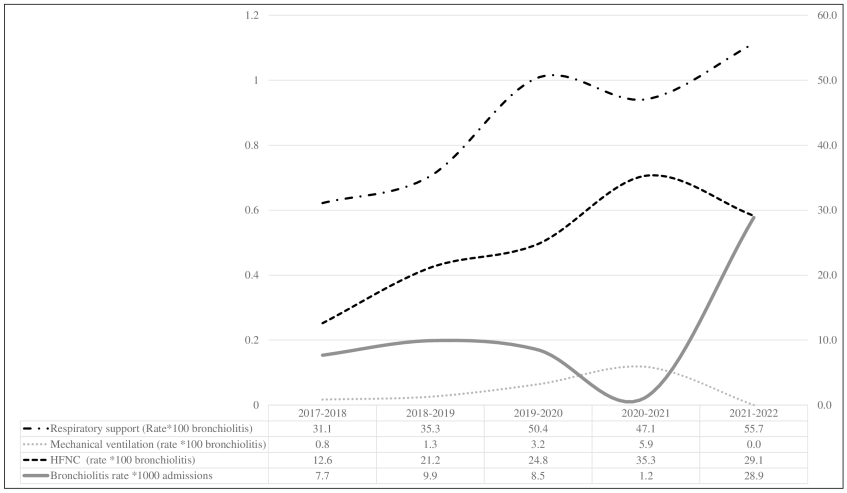
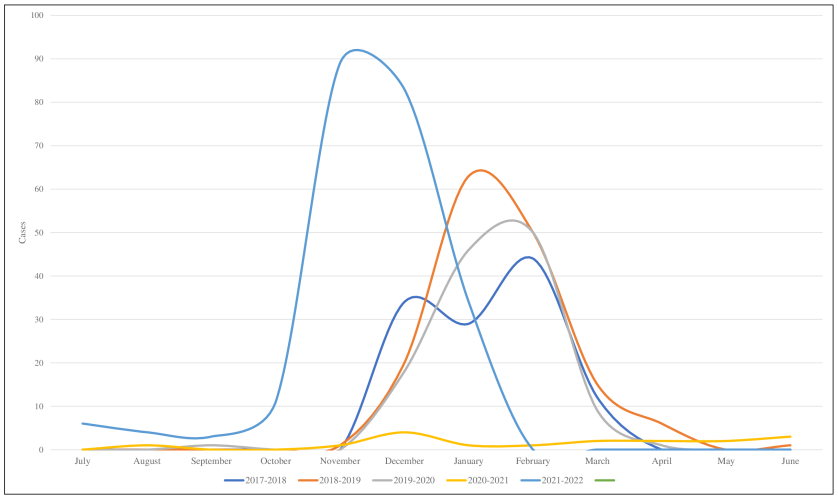


	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Respiratory support (Rate*100 bronchiolitis)	31.1	35.3	50.4	47.1	55.7
Mechanical ventilation (rate *100 bronchiolitis)	0.8	1.3	3.2	5.9	0.0
HFNC (rate *100 bronchiolitis)	12.6	21.2	24.8	35.3	29.1
Bronchiolitis rate *1000 admissions	7.7	9.9	8.5	1.2	28.9



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