

Is there a place for bronchiolitis in the COVID-19 era? Lack of hospitalizations due to common respiratory viruses during the 2020 winter

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Keywords: COVID-19; Coronavirus infections; Pandemics; Bronchiolitis

Conflict of interest: No conflict of interest to declare

Abbreviated title: **No place for bronchiolitis in the COVID-19 era**

Abstract

It was recently reported that due to the COVID-19 pandemic, in the northern hemisphere (Europe) winter 2020-2021, bronchiolitis had practically disappeared. But early reports from the southern hemisphere (Australia) raised concerns about a late spring/summer peak.

After a full winter season and now ending the summer, we report that there was no peak of common respiratory viruses in late spring/summer in South America.

Acute lower respiratory infections (ALRI), including bronchiolitis are a major cause of disease and hospitalizations in children across the world. In countries with a temperate climate ALRI shows an epidemic progress, with an explosive increase in cases in the cold months of the year (autumn-winter). The most frequent viruses causing ALRI included respiratory syncytial virus (RSV), influenza A and B, parainfluenza, adenovirus, human metapneumovirus and rhinovirus. The pandemic caused by SARS-Cov-2 had a very significant impact on the health of the world population. It directly resulted in millions of hospitalizations and deaths, and indirectly jeopardized health in many ways, including delaying the diagnosis and treatment of other diseases, worsening chronic conditions, increasing mental health problems, threatening children development, interfering with immunization schedules, etc.

Recently, Van Brusselen et al. reported that in the 2020-2021 European winter bronchiolitis and particularly its main responsible (RSV) had practically disappeared by the time its usual annual peak was expected, just when the second wave of the pandemic began (1). But, since the season is not completely over, they acknowledge the concern for a late spring/summer peak. This is supported by some reports from the southern hemisphere, in Australia, where an increase in cases of bronchiolitis was observed in such period (2). However, the pandemic hit Australia much more gently than many European countries, particularly the UK, so the behavior of the usual ALRI-causing viruses may be different in that scenario.

Argentina usually has a seasonal development of ALRI in childhood similar to that of many European countries, and the COVID-19 pandemic has hit it in a similar way in terms of cases and deaths. It also completed a full winter, allowing to assess the impact of the presence of SARS-Cov-2 on the circulation of common respiratory viruses.

Our hospital systematically screens for respiratory viruses (RSV, Flu A, Flu B, parainfluenza, adenovirus, metapneumovirus) in all children hospitalized for ALRI, reaching about 500 cases each year, beginning in mid-autumn and ending before the end of winter. In the 5 years prior to the pandemic (2015-2019), the peak of respiratory viruses (mostly RSV) was reached around week 26 (Fig. 1).

In 2020, our hospital practically did not identify respiratory viruses in any hospitalized patient (only 3 cases), but received more than 500 hospitalizations for SARS-Cov-2 (3). Remarkably, the temporal distribution of cases hospitalized for SARS-Cov2 was similar to that in previous years due to classical respiratory viruses (Fig. 1).

Explaining the phenomenon is not so simple. It is very likely that non-pharmacological measures to mitigate the effects of the pandemic (lock-down, school closure, etc.) have a lot to do with the absence of circulation of respiratory viruses; in Argentina the lockdown was massive and prolonged (4). On the other hand, the search and trace strategy used in our city could have contributed to reaching such a high number of pediatric hospitalizations for COVID-19, since most of our patients were asymptomatic or mild (5).

Regardless of the reason behind our findings, it is important to point out that, at least in our country, late IRAB peaks have not appeared in either spring or summer. The arrival of our next winter, with schools now fully open, will show us whether or not this pandemic surprises us again.

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