

Childhood asthma outcomes during the COVID-19 pandemic: Findings from the PeARL multi-national cohort

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Abstract

Background: The interplay between COVID-19 pandemic and asthma in children is still unclear. We evaluated the impact of COVID-19 on childhood asthma outcomes. Methods: The PeARL multinational cohort included 1,054 children with asthma and 505 non-asthmatic children aged between 4-18 years from 25 pediatric departments, from 15 countries globally. We compared the frequency of acute respiratory and febrile presentations during the first wave of the COVID-19 pandemic between groups and with data available from the previous year. In children with asthma, we also compared current and historical disease control. Results: During the pandemic, children with asthma experienced fewer upper respiratory tract infections, episodes of pyrexia, emergency visits, hospital admissions, asthma attacks and hospitalizations due to asthma, in comparison to the preceding year. Sixty-six percent of asthmatic children had improved asthma control while in 33% the improvement exceeded the minimal clinically important difference. Pre-bronchodilatation FEV1 and peak expiratory flow rate were improved during the pandemic. When compared to non-asthmatic controls, children with asthma were not at increased risk of LRTIs, episodes of pyrexia, emergency visits or hospitalizations during the pandemic. However, an increased risk of URTIs emerged. Conclusion: Childhood asthma outcomes, including control, were improved during the first wave of the COVID-19 pandemic, probably because of reduced exposure to asthma triggers and increased treatment adherence. The decreased frequency of acute episodes does not support the notion that childhood asthma may be a risk factor for COVID-19. Furthermore, the potential for improving childhood asthma outcomes through environmental control becomes apparent.

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