

that children hospitalized for anaphylaxis with a medical history of asthma were not more likely to have severe anaphylactic reactions compared with children without asthma. However, we noticed that asthma control status at the time of anaphylaxis was not determined in the study. As mentioned by the authors, a position paper from the European Academy of Allergy and Clinical Immunology identifies asthma as a risk factor for fatal anaphylaxis, but it does also specify that this mainly concerns “severe and uncontrolled asthma.”<sup>2</sup> Previous observations from independent series pointed out that asthma control status at the time of the event was of primary importance. A report on 1094 patients with an allergy to peanut or nuts showed that life-threatening bronchospasm was more likely in patients with severe asthma (relative risk 6.8 [4.1-11.3]) than in patients with milder asthma (relative risk 2.7 [1.7-4.0]).<sup>3</sup> Data on cases of fatal anaphylaxis in the United Kingdom between 1992 and 2006 suggested that overuse of salbutamol, lack of daily inhaled steroid, and asthma exacerbation were associated with fatal food reactions.<sup>4</sup> Therefore, suboptimal asthma control currently is recognized as a risk factor for severe and fatal anaphylaxis.<sup>5</sup> With this background, we suggest that clinicians should be cautious and continue to focus on the disease control status when approaching patients with asthma at risk for anaphylaxis. In clinical practice, it is well known that the anamnestic perception and recognition of good asthma control in a self-reporting adolescent may be vague and unreliable. Considering all patients with asthma history as not exposed to a greater risk of fatal anaphylaxis, regardless of their asthma control status, may mislead clinical decision-making.

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## Reply



### To the Editor:

We thank Grigoletto et al for their thoughtful letter regarding our report. We agree with the authors' conclusion that clinicians should consider history of asthma and asthma control status when managing children with anaphylaxis. In support of their conclusions, the authors cite a study evaluating anaphylactic reactions from peanuts and tree nuts in an outpatient allergy center.<sup>1</sup> In contrast to our report, this study includes limited allergens and may represent a more severe cohort of patients with a greater predilection for asthma and/or severe anaphylaxis based on their referral to an allergy center. Thus, it is difficult to compare their findings with our own, or generalize them to the care of children presenting to emergency departments (EDs) with anaphylaxis.

In our study, we accounted for potential differences in asthma severity and control status by performing a subanalysis to determine whether children with a history of asthma receiving inhaled corticosteroids were more likely to have severe anaphylactic reactions than children with a history of asthma not receiving inhaled corticosteroids (OR 1.14; 95% CI 0.68-1.94). We believe this was the best approach to evaluate the potential effect of asthma control on anaphylaxis severity within the limitations of our retrospective study design, in which we could not accurately assess the level of asthma control (eg, nighttime awakenings, interference with normal activity, frequency of use of short-acting inhaled beta agonists for symptom control) in the electronic health record.<sup>2</sup>

Based on the letter by Grigoletto et al, we performed an additional subanalysis to determine whether children with asthma with potential surrogates of asthma control status, including previous ED encounters for asthma exacerbations (n = 128), severe ED encounters for asthma exacerbations (defined as emergency severity index levels 1 and 2; n = 51), or previous intensive care unit admissions for asthma exacerbations (n = 12), were more likely to have severe anaphylactic reactions. Children with these asthma-specific covariates were not more likely to have severe anaphylactic reactions (52.3% vs 63.1% [*P* = .11];

51.0% vs 58.9% [ $P = .34$ ]; 75.0% vs 56.2% [ $P = .24$ ], respectively).

We believe that it is important to manage children with anaphylaxis based on the severity of symptoms and physical examination findings. Thus, it is imperative that clinicians recognize the early signs of severe and potentially fatal anaphylactic reactions (eg, upper airway obstruction, severe bronchospasm, cardiovascular collapse) and to initiate prompt treatment to prevent sequelae.<sup>3</sup> However, we also propose that for patients with anaphylaxis and a history of asthma who do not have severe reaction features, decision-making about the need for prolonged observation or hospitalization should not be made solely based on a history of asthma. Finally, we reinforce that before our findings can be applied in clinical care, they require further validation to accurately assess and account for clinical features that may affect anaphylaxis severity, including history of asthma and asthma control status.

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## Children of frontline coronavirus disease-2019 warriors: our observations



### To the Editor:

We read with interest the article by Jiao et al discussing the behavioral and emotional impact on children and adolescents imposed by the 2019 novel coronavirus disease (COVID-19) pandemic.<sup>1</sup> Here we intend to share our personal observations regarding the difficulties and challenges faced by the children whose parents are frontline “warriors” against COVID-19.

Apart from the effects of protracted school closure, sudden changes in their daily routine, and a sedentary lifestyle, similar to other children, children of frontline COVID-19 workers are going through unique experiences. The concept of nuclear families in recent decades already threatens the mental well-being of children, where parental duties in hospitals and subsequent quarantine of their parents make them feel deserted. Although doctors know that children are probably the least physically affected group, a fear of transmitting the virus to their children is lurking in their minds, which may prevent them from interacting with their children.<sup>2</sup> Children less than 3 years of age who are dependent on their mothers for breast milk and other activities of daily living pass their lives in torment. Although, as a positive effect of lockdown, most children are getting more time to mingle with their parents, the story of the children of frontline COVID-19 warriors is different.<sup>3</sup> Young children may not understand why their parents are not returning. Older children and adolescents with more mature thinking may offer respect toward their parents for being involved in the fight against the deadly COVID-19. Incidences of eviction from homes or discrimination against their medical professional parents<sup>4</sup> creates a sense of insecurity, fear, and vulnerability among children—this may lead to long-term consequences of anger, aggressiveness, and disrespect toward society at large.

Experts have recommended strategies to combat the psychological toll of COVID-19 among children in general.<sup>5-7</sup> In addition, we hope that government and society will be compassionate about the children of frontline workers at this critical period of time. Most important, we ourselves need to take care of our own children at this time.