within children. This has been found to be most notable within teenage boys who, perhaps coincidentally, are the subgroup for whom the resistin/uric acid index has been found to be most useful within this study.[3] It would be beneficial to see further studies or analyses confirming efficacy of this measure using triponderal mass index or waist-to-height ratio.

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References

1. Zurita-Cruz J, Villasis-Keever M, Manuel-Apolinar L, Damasio-Santana L, Wakida-Kusunoki GH, Padilla-Rojas M, et al. Resistin/uric acid index as a prognostic factor in adolescents with obesity after lifestyle intervention. J Pediatr 2020;219:38-42.
2. Menenakos C, Doulami G, Tzanetakou IP, Natoudi M, Kokoroskos N, Almpanopoulos K, et al. The use of serum uric acid concentration as an indicator of laparoscopic sleeve gastrectomy success. Int Surg 2015;100:173-9.
3. Peterson C, Su H, Thomas DM, Heo M, Golnabi AH, Pietrobelli A, et al. Tri-ponderal mass index vs body mass index in estimating body fat during adolescence. JAMA Pediatr 2017;171:629-36.

Reply

To the Editor:

We appreciate Dr Dore's comments regarding our study on the usefulness of the resistin/uric acid index to predict weight loss in adolescents with overweight or obesity.

First, we agree that in the group where there was a decrease in body mass index (BMI), both uric acid and the resistin/uric acid index had different values than those in the group with no BMI reduction. However, we clarify that, in the first group, uric acid levels were higher (6.3 ± 1.7 vs 5.3 ± 0.7), but it was the opposite for resistin/uric acid index (2.7 ± 0.6 vs 3.0 ± 0.4) (see Table II).

Unlike previous studies, we observed that there was an inverse correlation of high levels of uric acid with decrease of ΔBMI z-score, in contrast, the resistin/uric acid index values were associated with reduced BMI and weight loss (see Figure 1 and Table III). These discrepancies may be due to the study design. Menekos et al reported that higher uric acid levels were found in adults who lost more weight after bariatric surgery, but these patients were only evaluated in the first month after the surgical event.[1] In our study, adolescents with overweight or obesity were evaluated for one year, under supervised lifestyle interventions.

Regarding leptin levels, because we did not find them associated with changes in BMI or weight, our results seem to confirm that at the time of measurement, serum leptin levels are correlated with adiposity values.[2,3] For resistin levels, they could be considered as a predictor of long-term outcomes, as already described.[4,5]

In contrast, the effect of the comorbidities associated with obesity was analyzed. In the linear regression model of ΔBMI z-score which included hypertriglyceridemia, hypoalphalipoproteinemia, and high levels of low-density lipoprotein cholesterol, the coefficients for resistin/uric acid index (0.17) and males (0.15) were similar to those described in Table V. Of note, in this analysis none of the relationships with these three comorbidities was statistically significantly ($P = .795$, $P = .839$, and $P = .734$, respectively).

Last, the comment on triponderal mass index is very interesting, so we proceeded to carry out the same analyses used for the ΔBMI z-score. Overall, we had similar results, particularly in the linear regression model for Δtriponderal, the coefficient obtained from the resistin/uric acid index was 0.58 (95% CI, 0.25-0.91), which was greater than those obtained ΔBMI z-score.

We agree it is important to do more research to validate our findings, before they are used as part of the routine screening of adolescents with overweight or obesity.

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References

1. Menenakos E, Doulami G, Tzanetakou IP, Natoudi M, Kokoroskos N, Almpanopoulos K, et al. The use of serum uric acid concentration as an indicator of laparoscopic sleeve gastrectomy success. Int Surg 2015;100:1739.
2. Zguira MS, Slimani M, Bragazzi NL, Khrouf M, Chaieb F, Saïag B, et al. Effect of an 8-week individualized training program on blood biomarkers, adipokines and endothelial function in obese young adolescents with and without metabolic syndrome. Int J Environ Res Public Health 2019;16.
3. Stroescu RF, Mărginean O, Bizerea T, Gafencu M, Voicu A, Doroș G. Adiponectin, leptin and high sensitivity C-reactive protein values in obese children - important markers for metabolic syndrome? J Pediatr Endocrinol Metab 2019;32:27-31.
4. Perovic E, Mrdjen A, Harapin M, Tesija Kuna ASA. Diagnostic and prognostic role of resistin and copeptin in acute ischemic stroke. Top Stroke Rehabil 2017;24:614-8.
5. Gueugnon C, Mougin F, Simon-Rigaud ML, Regnard J, Nègre VDG. Effects of an in-patient treatment program based on regular exercise and a balanced diet on high molecular weight adiponectin, resistin levels, and insulin resistance in adolescents with severe obesity. Appl Physiol Nutr Metab 2012;37:672-9.

Poor asthma control remains a risk factor for severe anaphylaxis

To the Editor:

We have read with interest the report by Dribin et al investigating the association between history of asthma and anaphylaxis severity in children.[1] The authors concluded

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."[2] 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]).[3] 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.[4] Therefore, suboptimal asthma control currently is recognized as a risk factor for severe and fatal anaphylaxis.[5] 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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References

1. Dribin TE, Michelson KA, Zhang Y, Schnadower D, Neuman MI. Are children with a history of asthma more likely to have severe anaphylactic reactions? A retrospective cohort study. J Pediatr 2020;220:159-64.
2. Muraro A, Roberts G, Worm M, Bilo MB, Brockow K, Fernandez Rivas M, et al. Anaphylaxis: guidelines from the European Academy of Allergy and Clinical Immunology. Allergy 2014;69:1026-45.
3. Summers CW, Pumphrey RS, Woods CN, McDowell G, Pemberton PW, Arkwright PD. Factors predicting anaphylaxis to peanuts and tree nuts in patients referred to a specialist center. J Allergy Clin Immunol 2008;121:632-8.
4. Pumphrey RS, Gowland MH. Further fatal allergic reactions to food in the United Kingdom, 1999-2006. J Allergy Clin Immunol 2007;119:1018-9.
5. Turner PJ, Baumert JL, Beyer K, Boyle RJ, Chan CH, Clark AT, et al. Can we identify patients at risk of life-threatening allergic reactions to food? Allergy 2016;71:1241-55.

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.[1] 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.[2]

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];