

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.

Rhys Dore, BMBCh

Brighton and Sussex University Hospitals NHS Trust
Royal Sussex County Hospital
Brighton, United Kingdom

<https://doi.org/10.1016/j.jpeds.2020.05.058>

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, Almpantopoulos 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 Δ BMI 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 Δ BMI z-score which included hypertriglyceridemia, hypoalbuminemia, 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 Δ BMI z-score. Overall, we had similar results, particularly in the linear regression model for Δ triponderal, the coefficient obtained from the resistin/uric acid index was 0.58 (95% CI, 0.25-0.91), which was greater than those obtained Δ BMI 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.

Miguel Villasis-Keever, MD

Jessie Zurita-Cruz, MD, PhD

Medical Research Unit in Clinical Epidemiology
XXI Century National Medical Center
Mexican Institute of Social Security
Mexico City, Mexico

<https://doi.org/10.1016/j.jpeds.2020.05.059>

References

1. Menenakos E, Doulami G, Tzanetakou IP, Natoudi M, Kokoroskos N, Almpantopoulos 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, Doroş 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, Mouglin 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