

Correspondence

Biomarkers in obese asthma: Age of asthma onset matters!

To the Editor:

With great interest we read the recently published article in the *Journal* by Lugogo et al.¹ They report poor predictive values of conventional type 2 biomarkers in obese patients with asthma. Receiver-operating characteristic–curve analysis is used to calculate biomarkers cutoff points for predicting 2% or more sputum eosinophils. For obese patients with asthma, these cutoff values are lower than for lean and overweight patients. The authors conclude that in obese asthma conventional biomarkers are poorly predictive of eosinophilic airway inflammation.

This conclusion contrasts with the findings of a previous study from our group.² Our study showed a fairly good predictive value of blood eosinophils as well as fraction of exhaled nitric oxide (FENO) to diagnose 3% or more sputum eosinophilia. Furthermore, we found no difference in receiver-operating characteristic area under the curves for obese and nonobese patients (eg, area under the curve for blood eosinophils, 0.82 vs 0.83; $P = .82$).² Only for IgE the predictive value was similarly poor as in the study by Lugogo et al.

We believe that this discrepancy can be explained by several factors. First, the 2 studies differ with respect to the characteristics of included patients. The study by Lugogo et al mainly included patients with childhood-onset atopic asthma (range, 4–25 years), whereas our study exclusively included adult-onset (>18 years) patients with asthma (53 ± 13 years) of whom 68% were nonatopic. From the literature it is well known that subjects with asthma are differentially affected by obesity based on whether they had asthma early (<12 years of age) or later in life,³ suggesting that these 2 groups of subjects represent 2 different obese asthma phenotypes. It is well conceivable that in the adult-onset obese patients with asthma, the relationship between FENO or blood eosinophils and sputum eosinophils is more clearcut than in a mixed group of obese patients with different ages of disease onset. Second, the patients in the study

by Lugogo et al showed relatively low levels of biomarkers and sputum eosinophils, whereas our study showed a wide range of both biomarkers and sputum eosinophils. Obviously, wide ranges enable more accurate analyses than do values with little spread. Third, the cutoff point used for sputum eosinophilia by Lugogo et al is 2% versus 3% in our study, probably because of the relatively low number of patients with 3% or more sputum eosinophilia in their study. This higher cutoff point could also have improved the diagnostic accuracy of the biomarkers in our study.

In conclusion, we agree with Lugogo et al that in obese patients with childhood-onset atopic asthma biomarkers should be used with caution to predict eosinophilic inflammation. However, in adult-onset obese patients with asthma, FENO and blood eosinophils seem to be well suited to predict eosinophilic or noneosinophilic asthma.

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Editor's note: The authors of the article in question elected not to reply to this correspondence.

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