

# Clinical features of asthmatics with high serum total IgE

M. Sciolla<sup>1</sup>, A. Sprio<sup>1</sup>, A. Baroso<sup>1</sup>, G. Orpheu<sup>1</sup>, C. La Sala<sup>1</sup>, A. Di Stefano<sup>2</sup>, F. L. M. Ricciardolo<sup>3</sup>

<sup>1</sup>Department of Clinical and Biological Sciences, University of Torino - Orbassano (Italy), <sup>2</sup>Divisione di Pneumologia e Laboratorio di Citoimmunologia dell'Apparato Cardio Respiratorio, Istituti Clinici Maugeri, IRCCS - Veruno (Italy), <sup>3</sup>Severe Asthma and Rare Lung Disease Unit, San Luigi Gonzaga University Hospital; Department of Clinical and Biological Sciences, University of Torino - Orbassano (Italy)

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## BACKGROUND

Total serum IgE evaluation is currently not a reliable biomarker for discriminating T2 inflammation. Indeed, IgE concentrations can be altered in other inflammatory states due to tobacco and alcohol exposure, ageing, autoimmunity, parasitic infections, or metabolic syndromes.

## AIMS AND OBJECTIVES

The study aims to analyze the peculiarities of asthmatics with high serum IgE in the absence of other T2 markers.

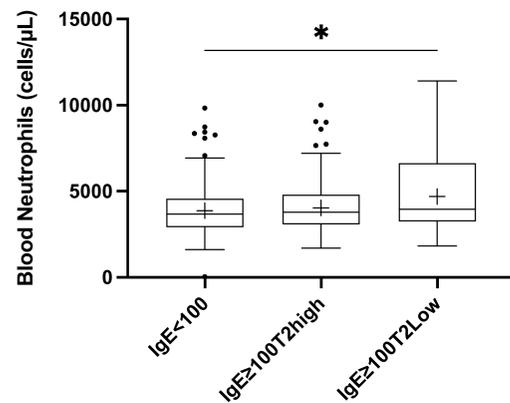


FIGURE 1

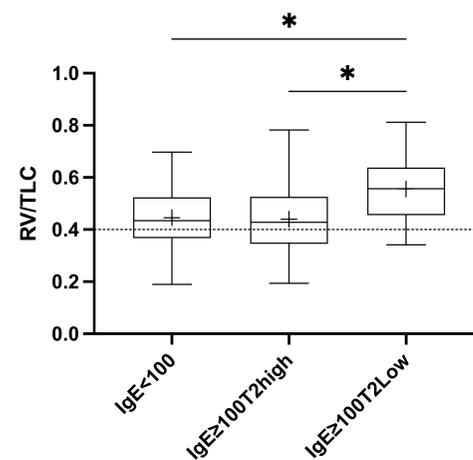


FIGURE 2

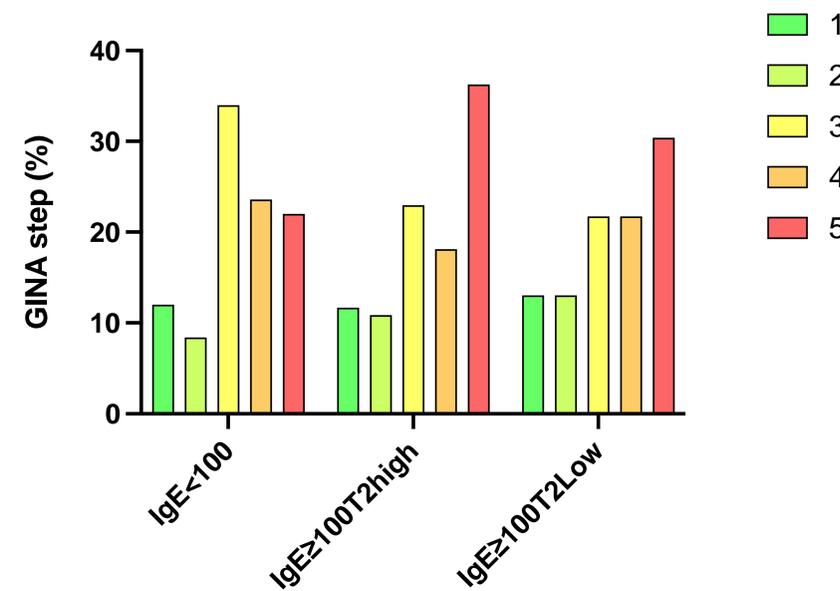


FIGURE 4

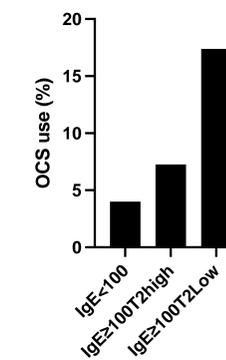


FIGURE 3

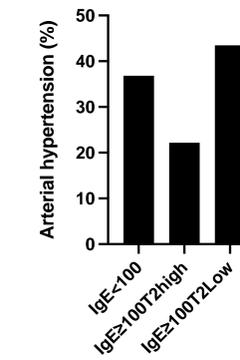


FIGURE 5

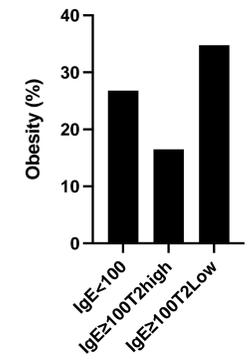


FIGURE 6

## METHODS

Demographic, clinical, and functional characteristics of 521 asthmatic subjects were extrapolated from chart data and stratified according to serum total IgE concentrations and T2 inflammation:

- IgEL: IgE<100 IU/mL;
- IgEH/T2L: IgE≥100IU/mL;
- IgEH/T2H: IgE≥100IU/mL+T2 inflammation

## RESULTS

IgEH/T2L is a rare asthmatic subgroup in the whole population (4.4%) characterised by higher blood neutrophilia (p<0.05) (FIGURE 1), air trapping (reduced FVC, p<0.05, and increased RV/TLC, p<0.05 (FIGURE 2)), greater use of OCS (p<0.05) (FIGURE 3), and low FeNO concentrations (p<0.01). IgEH/T2L patients shared features with IgEH/T2H, such as asthma severity (GINA steps, FIGURE 4), the prevalence of frequent exacerbators and a higher male frequency (approximately 45%). However, IgEH/T2L differ from IgEH/T2H for the older age (p<0.05) and for lower blood eosinophilia (p<0.001).

Concerning comorbidities, IgEH/T2L more frequently have GERD (p<0.05), hypertension (p<0.001) (FIGURE 5), obesity (p<0.01) (FIGURE 6), but less rhinitis (p<0.001) than IgEH/T2H.

## CONCLUSIONS

The peculiar inflammation and comorbidity pattern in the group of asthmatics with high serum total IgE and T2 low phenotype further contributes to ruling out serum total IgE from the definition of T2 inflammation. However, it remains a marker of asthma severity, frequent exacerbation, and reduced lung function.

