Symptom Severity and Allergen-specific IgE in Allergic Rhinitis

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LETTER TO THE EDITOR
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We read with great interest the article of Yadzir et al.1 We would like to underline some adjunctive topics in favor of serum allergen-specific IgE (sIgE) assessment in AR patients management.

Component resolved diagnostics (CRD) is particularly useful in AR management to correctly define real allergy, so to prescribe the causal allergen for AIT. We would like to remark another important consideration: polysensitization should not be an obstacle for AIT prescription. There is a belief that AIT is contraindicated in polysensitized patients, but a series of studies evidenced that AIT (with 1-2 allergen extracts) may be effective in polysensitized patients.2 The reason is that thorough allergy work-up, including sIgE assay, usually allows the causal allergen(s) to be defined.

Another important topic concerns the predictive value of sIgE in detecting AIT responders before AIT starting. As AIT is a prolonged and expensive treatment, a predictive biomarker of responsiveness could be useful. A first study, conducted by Di Lorenzo et al., demonstrated that the ratio of total IgE/sIgE could predict successful AIT.3 Later, two studies confirmed this hypothesis both in allergic children4 and adults.5 These studies defined a cut-off value of sIgE able to predict AIT responders.

We would like to discuss a final aspect about the clinical relevance of sIgE assessment: the correlation between sIgE and symptom severity. This topic was addressed by several studies, but rarely using CRD.6-9 A recent study reported that Bet v 1 allergic patients with pollen-food syndrome had higher sIgE levels than patients without it.10 This outcome suggested that sIgE might be correlated with allergy severity.

On the basis of this background, we would like to stimulate the discussion on this issue reporting our experience that aimed at correlating serum specific-IgE levels with symptom severity perception assessed by visual analogue scale (VAS) in a group of AR patients with Bet v 1 allergy.

We retrospectively evaluated file records of 115 AR patients (53 males and 62 females; median age: 40.9 years). Serum levels of allergen-specific IgE to Bet v 1 were detected by the Fluoroenzymeimmunoassay (ImmunoCAP Thermo Fisher Scientific, Italy) in peripheral blood samples and expressed as kUA/L. Symptom severity was assessed by AR patients using VAS. The VAS was a segment of 10 cm, where the patient indicated the perception of AR symptoms by marking a point: 0 implied the absence of symptoms while 10 corresponded to the worst perception. The cut-off 6 could remark mild to moderate-severe symptoms. The patients were visited in the autumn before AIT prescription and the VAS assessment concerned the symptoms perceived in the past pollen season. Patients gave a written informed consent and the procedure was approved by the Review Board.

The statistical analysis was performed using box and whisker plot and Pearson's test. Data were reported as median and interquartile range (IQR) and analyzed using Stata statistical package version 13.1 (Stata Corp, College Station, TX). We found no significant correlation between the symptom severity assessed by VAS and the serum levels of Bet v 1 specific-IgE.

Keywords: Allergic rhinitis; Allergen-specific IgE; Serum, Symptoms; Visual analog scale

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There was a moderate correlation (r=0.48; p<0.0001) between serum IgE levels and VAS scores (Figure 1A). Patients with VAS scores >6 had significantly higher (p<0.0001) serum IgE levels (md=23.0; IQR=25.8) than patients with VAS scores <6 (md=6.4; IQR=9.1), as shown in Figure 1B.

The main finding of our experience is that the presence of elevated levels of sIgE is associated with severe AR symptoms and there is a moderate correlation between sIgE and VAS.

Therefore, these findings show that serum sIgE level might be a reliable biomarker also for suggesting more severe symptoms in AR patients. This outcome might be clinically relevant, particularly in candidates for immunotherapy. In fact, AIT usually is considered in patients with moderate-severe AR and refractory to medications.

In conclusion, we believe that sIgE assessment, mainly concerning CRD, should be included in a careful allergy work-up.

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REFERENCES

7. Sunyer J, Anto JM, Sabria J, Roca J, Morell F,