

CORRESPONDENCE

The possible relevance of visual analogue scale in allergic patients

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Visual analogue scale (VAS) represents a simple quantitative measure commonly employed in assessing the perception of symptoms. VAS was deeply investigated and validated in allergic rhinitis (AR) and shown to significantly correlate with severity of rhinitis and quality of life [1].

In their observational prospective study, Demoly et al. provided evidence that VAS is a practical, sensitive, and valid tool to monitor the burden of AR in clinical practice [2]. In particular they suggested that changes in VAS >2 cm after treatment should be considered of clinical importance, highlighting the usefulness of measuring VAS in clinical practice for assessing AR symptom severity.

We completely agree with the authors about these conclusions that confirm the role of VAS in the management of allergic patients with respiratory symptoms, involving the upper but often also the lower airways. Indeed, previous studies have demonstrated that: (1) VAS assessment of nasal obstruction perception significantly may correlate with the nasal airflow in AR patients [3]; (2) VAS may identify patients that may qualify for allergen immunotherapy (AIT), prescription as it was reported that severe symptoms represent a relevant indication to AIT [4]; (3) VAS may be usefully assessed for identifying patients who are responder to AIT [5]; (4) VAS may predict the response to nasal decongestion test, an interesting information well associated with rhinitis duration and possible bronchial impairment [6]; (5) VAS can be significantly associated with bronchial hyperreactivity [7]; (6) VAS may easily indicate AR patients candidate to perform lung function test: this issue has to be considered crucial for precociously detect subjects developing asthma [8]. In addition to represent a fruitful tool in the management of AR patients, VAS assessment of breathlessness is also important in patients with asthma. In this regard, it has been reported that VAS significantly correlates with lung function, mainly concerning FEV₁ [9] and with the response to bronchodilation testing, confirming its role in quantitatively measuring the perception of breathlessness [10].

On the basis of these considerations and that allergic patients with AR often have symptoms, involving

the lower airways, we have recently evaluated a cohort of children with both AR and intermittent asthma to compare VAS assessment of perceived breathlessness with two spirometric parameters, such as FEV₁/FVC ratio and FEF_{25–75}, useful for evaluating airflow limitation and small airways disease [11]. Globally, 98 children (53 males, mean age 12.5 years) were consecutively enrolled. All of them assumed only antihistamines and short acting B2-agonists on demand.

The VAS consisted of one ruler asking for breathlessness symptom, as previously described [9, 10]. Briefly, patients indicated their actual perception of breathlessness by marking a VAS, i.e. a 10-cm vertical line on which 0 implied breathlessness, while 10 corresponded to no breathlessness. Initially, patients were instructed to place a mark on the line indicating their ease of breathing at that moment. It was explained that 0 represented breathlessness and 10 no problem breathing. Thus, the lower the numerical score marked by the patient, the greater their perceived breathlessness. With a movable marker, the child could mark any point on the 10-cm segment which best described his/her perception. No interval marker was visible on the line. Measurement of Lung Function considered: FVC, FEV₁ and FEF_{25–75%}, and the FEV₁/FVC ratio by spirometry (Med Graphics, Pulmonary Function System 1070 series 2; Med Graphics Corp., St. Paul, MN, USA), according the guidelines provided by the *American Thoracic Society* [11]. All the children were able to obtain at least three technically acceptable breathing manoeuvres with the spirometer. Three forced expiratory maneuvers were obtained, and the best values were retained. The results were compared with reference values obtained from a well-defined population, identified by the *American Thoracic Society* [11], of healthy subjects comparable for gender, height, weight and then expressed in percentage.

The relationship between FEV₁ (% pred.) and VAS was assessed by means of the Spearman's rank correlation coefficient.

As shown in Fig. 1a and b, we found a significant relationship between VAS values and FEF_{25–75%} values and the FEV₁/FVC ratio ($r = 0.44$ and $P < 0.001$; and $r = 0.24$ and $P < 0.01$ respectively). Therefore, this preliminary experience further underlines the clinical relevance of assessing VAS for quantitatively

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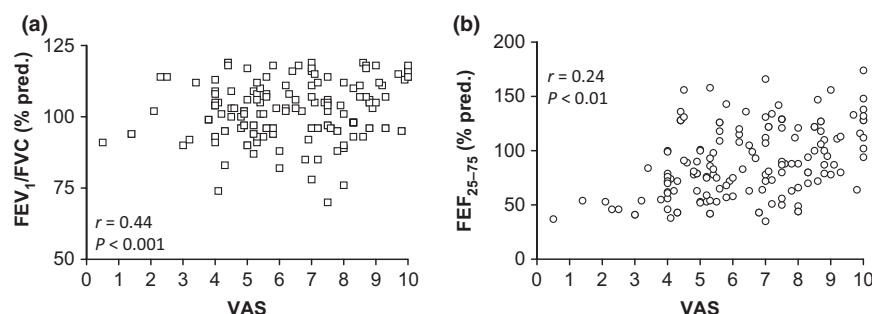


Fig. 1. (a) relationship between FEV₁/FVC ratio and VAS values; (b) relationship between FEF₂₅₋₇₅ and VAS values.

measuring the perception of allergic symptoms involving the lower airways. In conclusion, since according to the ARIA document all patients with AR should be evaluated for the presence of asthma [12], we retain that VAS assessment should be routinely used in the management of patients with AR, as it is practical, sensitive method to obtain relevant, useful information.

Conflict of interest

All authors declare that they have no conflicts of interests.

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