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EDITORIAL

Could a Visual Analogue Scale be useful, in real life, to manage children with asthma?

Reversibility of bronchial obstruction is an essential characteristic of asthma, and guidelines recommend performing a bronchodilator test in the diagnostic process of this disease.¹ The management of asthma, as currently accepted, must include an assessment of the level of control of the disease through the evaluation of daytime symptoms, limitation in activities, nocturnal symptoms and awakening, and the need for rescue treatment and level of bronchial obstruction by means of forced expiratory volume in one second (FEV₁). However, reversibility of bronchial obstruction is not included in the guidelines as an item when assessing asthma control.¹

Nevertheless, including spirometry as part of the strategy to achieve asthma control may help to avoid overestimation of control and, as a consequence, reduce the risk of exacerbations.² The interest in assessing asthma control with objective measurements, such as lung function, and not only with symptoms, is that poorer symptom perception in asthmatic children is associated with lower baseline FEV₁ and less use of rescue bronchodilators. Furthermore, it has been shown that the higher the bronchial responsiveness is, the poorer symptoms perception is.³

In this context, measuring bronchial obstruction reversibility is important not only for diagnosing but also for managing asthma. Thus, knowing the lung function of our asthmatic patients is mandatory. However, to measure lung function requires a certain amount of specific training both to perform the technique as well as to correctly interpret the results. A recent study shows that even after a spirometry training programme, some 21% of paediatricians had errors of interpretation, and 22% of spirometric manoeuvres were unacceptable because they did not meet all of the acceptability and reproducibility criteria.⁴ Even poorer results were obtained in studies developed in primary care settings all over the world.^{5–8} Spirometric curves are even more often unacceptable in children.⁶ Therefore, this technique should be carried out in paediatric pulmonology and/or paediatric allergy units, which have correctly trained personnel. Probably as a consequence of all this, primary care paediatricians seldom use spirometry in their clinical practices.⁹ As a consequence, only a small number

of asthmatic children (15–30%) have, at least, one spirometry per year.^{10–12} Nevertheless, the aim of guidelines for the management of asthmatic patients is to obtain control of the disease in the primary care setting, and – in fact – the majority of patients are managed in this setting.¹²

In the current issue of *Allergologia et Immunopathologia*, Ciprandi et al.¹³ report the results of a study developed to estimate whether the assessment of breathlessness perception by means of a Visual Analogue Scale (VAS) could be useful in initially evaluating the response to bronchodilator testing in children with asthma, particularly in the primary care setting. The results might be summarised as: VAS increase significantly in patients with bronchial obstruction (BO) and in patients with reversible obstruction (RO); the increase in VAS is significantly higher in patients with reversible obstruction than without it; and finally, there was a significant, albeit weak, correlation between VAS and FEV₁.

Even though the increase in VAS was also significant in patients without obstruction and without reversible obstruction, the authors suggest that an increase of two in ten units after a bronchodilatation test might discriminate subjects with bronchial obstruction, and even allow obtaining information on bronchial reversibility, suggesting an asthma diagnosis.

The results of the study could be very interesting in the assessment of paediatric patients in real life. But the suggestion of the diagnosis of asthma must be only the first step in the diagnostic process, as it is mandatory to confirm the reversibility of bronchial obstruction through spirometry. VAS is a straightforward tool for the paediatrician without easy access to spirometry, and thus this simple test could be very interesting in an initial orientation in the diagnostic process. However, because the study was designed without a control group of healthy children, the authors could not report the sensitivity and the specificity of the test.

Additionally this test could be useful to discriminate between asthmatic patients with or without BO: the authors show a significant increase in VAS when patients have BO; however, in patients without obstruction the increase in VAS is significant as well. The authors' proposal that an increase

of at least two units in the breathlessness measurement after BD is discriminative between having or not having BO, might be right, but sensitivity and specificity of the test must be reported in order to know what its exact usefulness is. On the other hand and in real life, a significant response in VAS might not only be a diagnostic tool for assessing BO; but might also be especially useful in the assessment of the response to bronchodilators, which is why it could be a good assessment tool of the positive progression of an asthma episode.

Finally, the authors consider that children with RO had a median increase of 2 units in VAS, whereas children without reversibility reported an increase of <1 unit. A sensitivity and specificity study is needed to assess the discriminative capacity of the test. But again in real life, VAS might be very useful to assess the response to treatment and prevent overestimation of asthma control.

Furthermore, a beneficial side effect could be suggested: maybe patients using this VAS could learn to better perceive their own breathlessness and, as a consequence, prevent severe exacerbations.

In summary I would agree with the authors in their last statement: "the present study demonstrates that VAS might be considered an initial tool to assess BD response in children with asthma". However, more studies are needed to know the place of this test in the management of asthmatic children. A test which is so attractive since it is so simple.

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