Anales de Pediatría 97 (2022) 153–154

analesdepediatría

www.analesdepediatria.org

EDITORIAL

Asthma: A collective responsibility with many unresolved challenges☆

Asma: Una responsabilidad de todos con muchos retos pendientes

Luis Moral

Unidad de Neumología y Alergología Pediátrica, Hospital General Universitario Dr. Balmis, Instituto de Investigación Sanitaria y Biomédica de Alicante (ISABIAL), Alicante, Spain

When it comes to asthma, one of the diseases known since antiquity, there are still gaps in our knowledge, aspects that remain controversial, and, at the same time, advances in treatment. There is no question that the prevalence of asthma is high, with a substantial impact worldwide on society and health care systems, especially during childhood. But what is it that we are referring to when we speak of asthma? The current concept of asthma is so broad and heterogeneous that it may not always be certain that we are referring to the same thing. Typical asthma in children aged more than 5 or 6 years, usually with atopic underpinnings, with the classic clinical manifestations (recurrent attacks of bronchial obstruction with full resolution) and a clear response to asthma treatments, does not usually pose challenges to diagnosis. The problem arises when the presentation departs from this quintessential clinical picture. In the mild end of the spectrum, it is difficult to determine how many episodes must occur or how long symptoms must last to assign the asthma label to a child. Cough is one of the most sensitive symptoms, but also one of the least specific, and it is not easy to figure out whether, in the absence of other symptoms, it may be a manifestation of asthma. Since asthma is chiefly diagnosed based on the clinical manifestations, with the support of lung function tests, there may be disagreement regarding the threshold that marks the difference between having and not having asthma, which can result in substantial variation in how the prevalence of asthma is measured based on which threshold is applied. At the other end of the spectrum, which includes severe, atypical or poorly controlled asthma, the diagnosis must first and foremost be confirmed to avoid labelling a different condition as asthma, which requires ruling out other diseases with respiratory manifestations that may resemble it. The definition and identification of asthma in the early years of life are also complex and have been the subject of constant debate, with no end in sight. Many infants and young children have onset with a first episode of bronchiolitis, but the course of disease is not the same in every case. Asthma attacks (or wheezing episodes, a term sometimes preferred for use in young children) tend to be veritable bronchitis episodes triggered by viral infection, especially by rhinovirus, with a less favourable response to commonly used treatments for asthma. In many cases the disease improves with age, but it is difficult to predict individual patient outcomes and whether the asthma will continue or improve as the child grows. Typical asthma in older children also seems to improve or even resolve with age, but it is impossible to ensure that asthma has ended, as symptoms can recur later

☆ Please cite this article as: Moral L. Asma: Una responsabilidad de todos con muchos retos pendientes. An Pediatr (Barc). 2022;97:153–154.

E-mail address: lmoralg@gmail.com

on, even in adulthood. In this context of uncertainty, the Global Asthma Network (GAN) study, the natural continuation of the International Study of Asthma and Allergies in Childhood (ISAAC), evinces the large prevalence of asthma symptoms in the paediatric population of Spain, with important implications as regards the frequency of disease and the need of maintaining adequate control of it.[1]

Several aspects of asthma treatment are under debate. While the underlying pathogenic mechanisms that cause the disease remain unknown, it will be difficult to achieve curative treatments. Allergen immunotherapy is effective for treatment of allergic asthma.[2] However, there are limitations to this approach. The relationship between sensitization to allergens, allergic disease and asthma symptoms is difficult to establish, and polysensitization, a frequent phenomenon that does not always imply polyallergy, complicates the selection of the appropriate allergens to use for immunotherapy in each given patient. The standardization of preparations for immunotherapy is complex, and there are few clinical trials of immunotherapy in children with adequate methodology and long-term follow-up, although studies are increasing in quality. In addition, factors unrelated to allergy play an important role in asthma (genetics, infections, pollutants, among others) that vaccination with allergens has no effect on. The treatment of asthma exacerbations does not raise significant questions and the essentials of its management have remained largely unchanged for decades. One of the most novel aspects is the use of magnesium sulphate for management of severe exacerbations that do not respond to first-line treatment. Although the evidence confirms the efficacy of magnesium sulphate delivered intravenously (which is not the case of inhalation), its use is off-label and there are many doubts as to when, how and for what purpose it should be given, which reflects the heterogeneity in its use and its outcomes, of which the work of López García et al. published in the current issue of *Anales de Pediatría*, among other recent articles, is an example.[3,4] Asthma maintenance therapy seeks to control the underlying bronchial inflammation that is believed to be present in most patients, and there is little doubt that inhaled corticosteroids are the most suitable drugs for the purpose, combined with other drugs as needed to avoid the use of high doses with systemic effects. Poorly controlled asthma has attracted increasing attention in the past few decades, on account of both its impact on the quality of life of affected patients and the health care system and of the emergence of new biologic agents capable of improving the outcomes achieved with previously available treatments. The care of these patients requires specialised teams capable of diagnosing infrequent diseases that mimic asthma, detecting non-adherence or poor inhalation technique, identifying comorbidities and social and environmental factors hindering asthma control, categorising types of asthma (asthma phenotype) resistant to treatment, and adequately selecting and prescribing available biologic agents.

All of the above have made asthma, this ancient and familiar disease, retain its prominence in both real-world clinical practice at every level of care and in research, in which the study of the many aspects involved in its diagnosis and management is a broad field. This prominence ought to be reflected in the undergraduate general medicine curriculum, in the paediatrics specialty curriculum and in the continuing education of licensed paediatricians, in addition to the education of other health care professionals involved in the care of these patients, especially nurses. Therefore, universities and healthcare systems have an inescapable duty to guarantee adequate education of professionals on the subject, in addition to providing the necessary resources for the correct management of patients and promote research with which to guide efficient care delivery. And it is the duty of health care professionals to apply this knowledge and available treatment to avoid preventable impairments in the quality of life of patients with asthma.[5] Many children and adolescents (and future adults) stand to benefit from this dedicated effort. We all share the responsibility of making this objective a reality.

References

1. Bercedo Sanz A, Martínez-Torres A, González Díaz C, López-Silvarrey Varela Á, Pellegrini Belinchón FJ, Aguinaga-Ontoso I, et al. Prevalencia y evolución temporal de síntomas de asma en España. Estudio Global Asthma Network (GAN). An Pediatr (Barc). 2022;97:161–71, http://dx.doi.org/10.1016/j.anpedi.2021.10.007.
2. Rice JL, Diette GB, Suarez-Cuervo C, Brigham EP, Lin SY, Ramanathan M, et al. Allergen-specific immunotherapy in the treatment of pediatric asthma: a systematic review. Pediatrics. 2018;141:e20173833, http://dx.doi.org/10.1542/peds.2017-3833.
3. López García M, Álvarez Eixéres R, Rosselló Gomila MA, Díaz Pérez D, Osona B. Uso y abuso del sulfato de magnesio en las crisis asmáticas. An Pediatr (Barc). 2022;97:213–5, http://dx.doi.org/10.1016/j.anpedi.2022.02.004.
4. Arnold DH, Gong W, Antoon JW, Bacharier LB, Stewart TG, Johnson DP, et al. Prospective observational study of clinical outcomes after intravenous magnesium for moderate and severe acute asthma exacerbations in children. J Allergy Clin Immunol Pract. 2022;10:1238–46, http://dx.doi.org/10.1016/j.jaip.2021.11.028.
5. Moral L, Asensi Monzó M, Juliá Benito JC, Ortega Casanueva C, Paniagua Calzón NM, Pérez García MI, et al. Asma en pediatría: consenso REGAP. An Pediatr (Barc). 2021;95:125.e1–11, http://dx.doi.org/10.1016/j.anpedi.2021.02.009.