Yes, there really are individuals with severe asthma: the importance and limitations of data obtained from specialized centers

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Asthma is a chronic disease that affects approximately 300 million people worldwide, with a prevalence of 1-16%. Despite a downward trend, asthma mortality in Brazil is high; between 1980 and 2012, asthma was responsible for approximately 2,339 deaths annually.[1] Lack of asthma control affects patient quality of life significantly and overburdens health care systems worldwide.[2] Therefore, lines of care that are organized and targeted at patients with asthma, especially those with severe forms of the disease, are essential.

Between 3% and 10% of adults with asthma have the severe form of the disease, defined as that which requires treatment with a high-dose inhaled corticosteroid combined with a second drug to prevent it from being uncontrolled or which remains uncontrolled despite optimal treatment in accordance with the European Respiratory Society/American Thoracic Society guidelines.[3] In Brazil, the number of patients with severe asthma and their characteristics remain unknown.

New forms of treatment, including the use of biologic agents, have revolutionized the outcomes of severe asthma in highly selected patients with defined phenotypes. However, the use of such therapies, which are not yet available via the Brazilian public health care system, requires that the treatment of individuals with asthma be organized to allow a structured diagnostic assessment, determination of disease severity/phenotype, access to a multidisciplinary team, and well-designed models of care.

In an article published in this issue of the *Jornal Brasileiro de Pneumologia*, Alves et al.[4] describe the clinical characteristics and factors associated with greater asthma severity in a sample of patients followed in the Bahia State Program for the Control of Asthma and Allergic Rhinitis, in the city of Salvador, Brazil. In this cross-sectional study, the authors included 473 adults with asthma who were systematically reevaluated between 2013 and 2015. The study used an appropriate methodology, validated questionnaires being administered in order to assess treatment adherence and quality of life. In the aforementioned sample, 88 patients (18%) met the criteria for severe asthma in accordance with the European Respiratory Society/American Thoracic Society guidelines.[3] The results showed that there was a predominance of women (87%), of overweight/obese patients, of patients with symptoms of chronic rhinitis, and of patients with symptoms of gastroesophageal reflux. Worthy of note are the absence of active smokers and the high proportion of patients that were adherent to treatment (77%), as well as of those who used their inhalers correctly. An increased number of eosinophils was associated with a 42% lower chance of severe

asthma. There were no reports of oral corticosteroid use at the time of assessment, although most of the patients (71%) showed a lack of asthma control and impaired quality of life.

Diagnosing patients with severe asthma can be challenging. For example, it can be hard to distinguish between difficult-to-treat asthma and treatment-refractory asthma. Alves et al.[4] also demonstrated the importance of diagnosing and treating modifiable associated factors, such as obesity and gastroesophageal reflux disease, which increase the burden of disease and were common in the population studied. Other key elements in severe asthma include vocal cord dysfunction/breathing pattern disorder (a respiratory condition characterized by abnormal breathing and dyspnea that can occur in the absence of identifiable diseases) and sleep apnea, neither of which were addressed in the Alves et al. study.[4] Those elements are usually associated with the inappropriate use of medications and should be included in the diagnostic protocol for and assessment of severe asthma.[5]

Determination of blood eosinophil numbers and assessment of airway inflammation (measurement of sputum eosinophils and of exhaled nitric oxide), as well as assessment of small airway function, are unavailable in most health care facilities in Brazil. There is a need to develop recommendations regarding which measures are a priority (i.e., are essential in the management of patients with severe asthma). Patient care models should prioritize patient outcomes, the pursuit of equity, and the provision of adequate care to patients in all regions of the country.

We recommend caution in interpreting the results of the Alves et al. study.[4] The study was conducted at a single, specialized referral center for the treatment of patients with difficult-to-treat asthma. Therefore, it does not represent the majority of health care facilities where individuals with asthma are treated. Although most of the findings are in agreement with those described in the literature, some data require careful consideration. The proportion of individuals with severe asthma in the study sample, for instance, was much higher than that reported in the 2019 update of the Global Initiative for Asthma for patients with good treatment adherence and good inhaler technique (3.7%).[6]

In the management of individuals with asthma, it is essential to rule out problems related to treatment adherence and inhaler use before classifying an individual as having severe asthma.[6] The high rates of treatment adherence and correct inhaler use observed in the study conducted by Alves et al.[4] reveal the positive impact of

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continuing education provided by a good multidisciplinary team. Such results should constantly be pursued in the treatment of individuals with asthma at all levels of health care.[7,8] Alves et al.[4] reported that the rate of self-reported treatment adherence was 77%, compared with a rate of 57% based on data obtained from pharmacy records. That finding indicates that, during some periods, patients have to pay the costs of treatment because of drug shortages at public facilities, which makes treatment adherence difficult, given that the costs of managing severe asthma may account for as much as 24% of the budget of vulnerable families.[9]

Another factor associated with asthma severity is active smoking, which also negatively affects asthma control and the efficacy of the proposed therapy.

Therefore, all patients with asthma of any severity should be included in smoking cessation programs.

In summary, data from specialized asthma treatment centers are essential for the dissemination of knowledge about the characteristics of individuals with severe asthma. Such data underscore the fact that, at facilities treating individuals with asthma, at all levels of care, it is necessary to carry out basic general assessments, monitor inhaler use, and determine treatment adherence, as well as to rule out exposure to allergens and treat comorbidities. Patients with a working diagnosis of severe asthma should be referred to centers that have the appropriate instruments to manage the disease; that is, to referral centers.[10]

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