

## Peak expiratory flow. It's better to measure!

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In asthma, poor perception of the severity of the obstructive phenomena may deceive some patients,<sup>(1-2)</sup> creating a risk of asphyxia due to lack of appropriate treatment.<sup>(3)</sup> Inaccurate perception of the severity also deceives physicians, as we have demonstrated in a study of outpatients with moderate to severe asthma.<sup>(4)</sup>

In this issue of the *Jornal Brasileiro de Pneumologia* (Brazilian Journal of Pulmonology), Piovesan et al.<sup>(5)</sup> present the results of a study that reaffirms the usefulness of serial measurement of peak expiratory flow (PEF) in the emergency treatment of adults and teenagers with asthma, demonstrating that the PEF measured at fifteen minutes after the initiation of treatment is a good prognostic marker of the outcome of the attack, which was evaluated by a second PEF measurement at four hours after the first bronchodilator inhalation. The study was carried out in the state of Rio Grande do Sul.

Contradicting this conclusion, we found the recent report by Paro and Rodrigues,<sup>(6)</sup> who evaluated 130 children from one to thirteen years of age with acute asthma in São Paulo. Studying predictive factors of hospital admissions due to asthma, these authors reported that arterial oxygen saturation and clinical scores obtained at the beginning of the emergency treatment were useful but found that PEF measurement did not contribute to predicting hospitalization.

There are some differences between the methodologies of these studies that may explain the diversity of the results. First of all, the age brackets were quite different. Second, the outcome measure evaluated in the study carried out in Rio Grande do Sul was PEF at four hours after the first dose of bronchodilator, whereas that evaluated in the study carried out in São Paulo was hospital admission due to asthma. In the emergency treatment of an asthma patient, it is necessary, first of all, to provide relief. Performing the PEF

maneuver is unpleasant in this situation and can occasionally aggravate the bronchospasm, in addition to delaying the initiation of treatment. The decision made by Piovesan et al.<sup>(5)</sup> to evaluate PEF at fifteen minutes after the initiation of treatment probably facilitated the performance of the maneuver, obtaining greater co-operation by the patients. The authors included the immediate response to the first doses of bronchodilator in their results. This immediate response may be a more significant prognostic factor than is baseline PEF. Although the study carried out in Rio Grande do Sul does not allow the 'dissection' of the relevant components of the prognostic marker identified (since only PEF measured at fifteen minutes after the initiation of treatment was taken into consideration), it offers a simple and easily executed option for objective measurement of the degree of airway obstruction for routine use in the emergency treatment of asthma. However, this study protocol should be reproduced in a sample that includes both adults and children, and hospitalization should be evaluated as a primary outcome measure before its generalized implementation can be recommended.

Despite all of the pharmacological advances that offer highly efficacious options for the treatment of asthma, this disease continues to be one of the leading causes of emergency treatment and hospitalization in Brazil. Considering the high rates of asthma morbidity and the typically overloaded state of Brazilian emergency rooms and hospitals, it is necessary to work on two fronts. The first is the endless struggle for the implementation of national public policies that address asthma. We must continue to mobilize medical and patient societies in order to involve all branches of the Unified Health System. The Sociedade Brasileira de Pneumologia e Fisiologia (SBPT, Brazilian Society of Pulmonology and Phthisiology) has, for many years, played a prominent role in this process and

needs to gather more allies. In the state of Bahia, we devised a multi-institutional project, known as the Programa de Controle da Asma e da Rinite Alérgica da Bahia (ProAR, Asthma and Allergic Rhinitis Control Program of Bahia), to integrate teaching, research and treatment.<sup>(7)</sup> The program is based on proposals made by the National Asthma Plan, formulated in 1999 by representatives of the Ministry of Health, the SBPT, the Brazilian Society of Allergy and Immunopathology and the Brazilian Society of Pediatrics. We have received financial support from the Foundation for the Support of Research in the State of Bahia since 2003, and we have had the support of the Federal University of Bahia School of Medicine, the State Department of Health and various municipal departments of health in Bahia. After the consolidation of the ProAR in 2005, we obtained a 40% reduction in hospitalizations in Salvador and in Feira de Santana, which are the most heavily populated cities in the state of Bahia, by prioritizing the attention given to patients with severe asthma.<sup>(8)</sup> However, it would be fundamental that evidence-based procedures be standardized in order to simplify and provide more efficient emergency treatment of patients with asthma in Brazil. The study led by Paulo Dalcin, from the Rio Grande do Sul Federal University,<sup>(5)</sup> commented on in this editorial, offers a simple and inexpensive option that could contribute to the prognosis and, consequently, the planning of the protocol for treating patients with asthma in the emergency room. In this study, carried out by the Rio Grande do Sul team, the significant participation of medical students, who are recipients of 'young scientist' scholarships, is worthy of note and praise.

Serial home PEF measurement is not necessary in the regular treatment of patients with asthma,<sup>(9)</sup> but it may be useful in more severe cases and for defined periods of time. However, this objective parameter for measuring the intensity of the airway obstruction is an important instrument for re-evaluation in the health care facility (reducing the need for repeated spirometric tests) and, in particular, for determining the severity of the exacerbation.<sup>(10)</sup> Despite the difficulties and limitations of its use in the emergency treatment of children,<sup>(11)</sup> the dissemination of this simple and inexpensive instrument might be an important means of enabling emergency treatment for asthma

exacerbations in more basic health care clinics within the Unified Health System. This strategy could increase the accuracy of the triage of patients who will need hospitalization and favor the resolution of such cases. In these basic health care clinics, it should be possible to offer bronchodilator inhalations via metered-dose inhaler with a spacer, with or without the accompanying corticosteroids.

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