



Prescribing trends in and perceptions of the treatment of asthma: a survey among pulmonologists in Brazil

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TO THE EDITOR:

Asthma management in Brazil remains unsatisfactory, as shown by the low rates of disease control.⁽¹⁾ Therefore, gaining knowledge of the prescribing habits of pulmonologists in the treatment of asthma in Brazil can assist in the development of strategies and public policies for improving asthma control and reducing future disease-related risks. The objective of the present study was to evaluate prescribing trends of pulmonologists in the treatment of asthma.

This was a cross-sectional study in which telephone interviews were conducted with 300 pulmonologists selected probabilistically after stratification by Brazilian region. To that end, we used data extracted from the database of a market survey investigating prescribing trends of pulmonologists in the treatment of asthma in Brazil. Participants completed a standardized questionnaire consisting of 22 open-ended or closed-ended questions about the major factors affecting prescribing decisions about asthma medications, including preference for a particular medication and/or inhaler device, reliability, access, cost, adherence, safety, and personal experience. All respondents and interviewers were unaware of the study sponsor's identity. The sample size was calculated assuming an error of 5% and a confidence interval of 95%. The process of sampling and contacting participants was carried out by an independent survey institute. Pulmonologists who treated patients with asthma on a regular basis were included. The questionnaire was validated by two pulmonologists who did not participate in the study and by pre-testing in a pilot study. The interviews, conducted by 20 professionals who specialized in telephone surveys, had a mean duration of 12 min and were audio-recorded to ensure accuracy of data. Continuous variables are expressed as mean and standard deviation. Categorical variables are presented as absolute and relative frequencies.

The mean work experience as a pulmonologist among the respondents was 22.1 years. Most of them (76%) worked primarily in private practice, although 49% of the respondents also worked in the public health care system. The proportion of physicians working predominantly in the private sector was found to be highest in southern Brazil (81%) and lowest in central-western Brazil (27%). The respondents estimated that one third of their outpatient cases involved patients with asthma.

Of all respondents, 62% reported that their patients paid for their medications, whereas 38% reported that their patients received their medications through the Brazilian *Sistema Único de Saúde* (SUS, Unified Health Care System). The proportion of patients who paid for their medications was highest in southern Brazil (76%) and lowest in northeastern Brazil (54%).

The asthma medications most commonly prescribed by the responding pulmonologists were budesonide/formoterol (Aerocaps[®]; 36%), fluticasone furoate/vilanterol (Ellipta[®]; 15%) and budesonide/formoterol (Turbuhaler[®]; 14%; Figure 1A). In the respondents' opinion, the most relevant medication-related characteristics that explained their prescribing preference were a comfortable dosing schedule, an affordable price, personal experience with the product, medication availability within the SUS, and ease of use of the inhaler device (Figure 1B). From the respondents' perception, the major factors for improving treatment adherence were medication access via the SUS (44%), medication price (33%), inhaler device type (14%), and a comfortable dosing schedule (6%). When analyzing these criteria by stratifying them on the basis of the profile of pulmonologists, that is, on the basis of whether they worked predominantly in the public or private sector, we found that medication access via the SUS (59%) and medication price (26%) were the major factors considered relevant for improving treatment adherence.

The results of the present study show that the most relevant factors for the choice of medications by the responding pulmonologists were medication availability within the SUS, an affordable price, and ease of use of the inhaler device. These were also the factors considered important for improving asthma treatment adherence. Among the various therapeutic options available on the market in Brazil, the budesonide/formoterol combination (Aerocaps[®]) was reported to be the most commonly prescribed therapy, followed by fluticasone furoate/vilanterol (Ellipta[®]) and budesonide/formoterol (Turbuhaler[®]). These data are important because they represent real-life information on asthma management by specialists working in Brazil.

Our results indicate great concern among pulmonologists in Brazil regarding patient access to the pharmacological treatment of asthma, even among those physicians who reported predominantly treating private patients.

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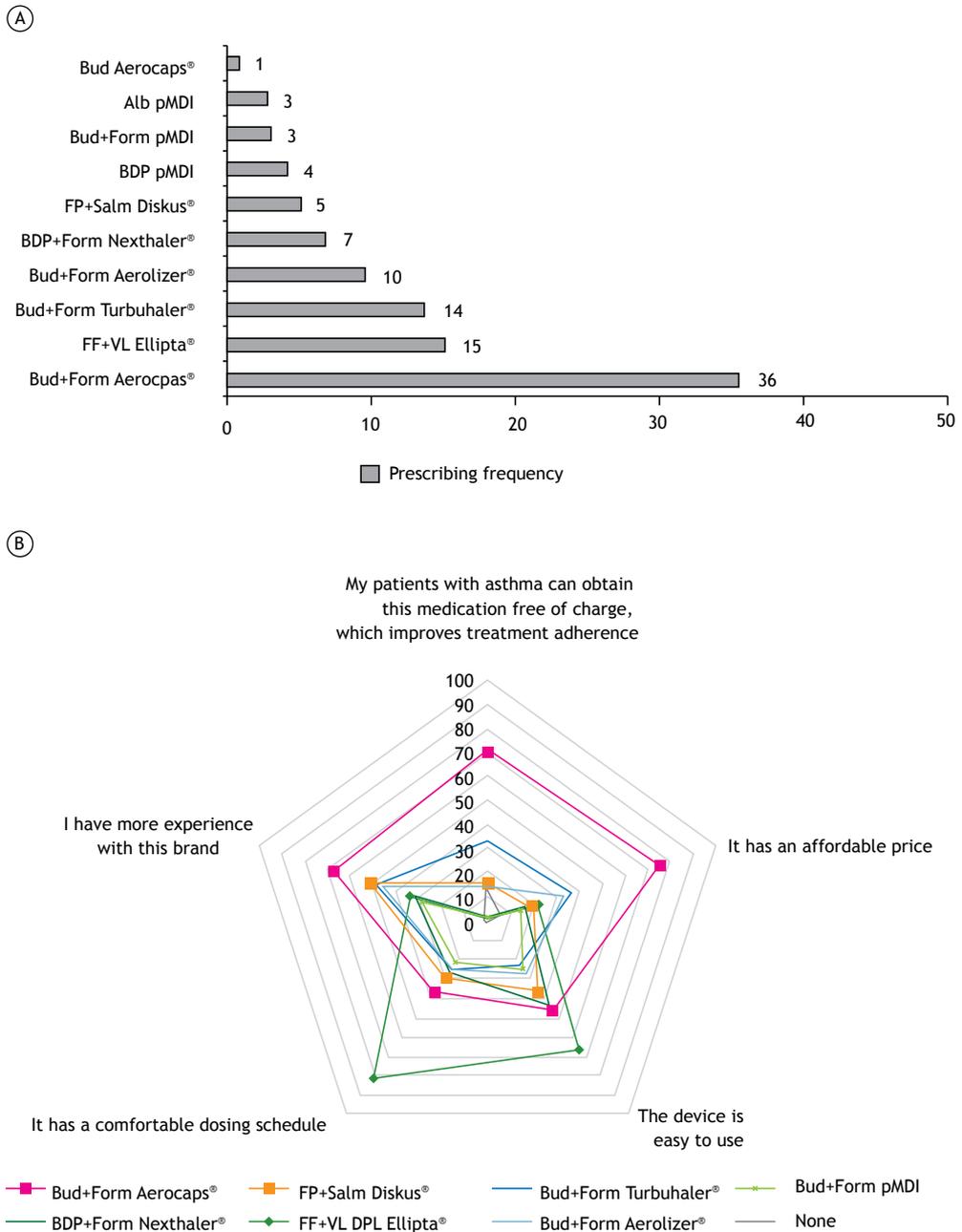


Figure 1. In A, distribution of the most commonly prescribed treatments (treatments available in Brazil during the study period). In B, phrases associated by pulmonologists with each of the main asthma treatments available in Brazil. Bud: budesonide; Alb: albuterol; pMDI: pressurized metered dose inhaler; Form: formoterol; BDP: beclomethasone; FP: fluticasone propionate; Salm: salmeterol; FF: fluticasone furoate; VI: vilanterol; and DPI: dry powder inhaler.

Financial difficulty gaining access to medications is one of the causes of unintentional poor adherence to asthma treatment.⁽²⁻⁴⁾ In addition, socioeconomic status is directly related to worse asthma outcomes, which results in unnecessary additional costs for the patient and the health system.⁽⁴⁾ Our results are in contrast with those of previous studies that showed that ease of use of the inhaler device is a predictor of treatment adherence and better outcomes.^(5,6) In the present study, ease of use of the inhaler device was not one of the aspects most commonly reported

as important for treatment adherence. The reasons for these discrepancies may be variations in the methodologies used and need to be better explored in future studies.

To understand the reasons why budesonide/formoterol (dry powder inhaler: Aerocaps®) was reported to be the most commonly prescribed therapy, we need to analyze the various criteria related to the respondents' prescribing trends. If the choice of this combination therapy had been predominantly motivated by its availability within the public health system, it would be

expected that pulmonologists working in the public sector would differ from those working in the private sector in their choices of treatment, which did not occur. This is supported by the respondents' answers showing that the choice of the most commonly prescribed therapy was based on the fact that this therapy was perceived as having the best combination of price, availability via the SUS, and ease of use of the inhaler device.

In summary, factors related to medication access such as availability within the SUS and price were the characteristics most commonly reported by the respondents, both in terms of their decision about

choosing a treatment and in terms of the importance of treatment choice for treatment adherence. These results are relevant for understanding the complexity of the existing scenario in the treatment of asthma in Brazil, characterized by a wide choice of drugs and inhaler devices and, despite that, a low rate of asthma control.

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