

# Lowering the dosage of oral corticosteroids in asthma

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### ABSTRACT

Wheezing, dyspnea, coughing, and breathing problems are all symptoms of asthma, which is a chronic inflammatory disease of the airways that causes broad airway obstruction. Asthma affects roughly the entire population of Portugal. There are various manifestations (phenotypes) of this disorder, each with its own clinical characteristics, such as comorbidities, severity, response to treatment, and frequency of acute exacerbations. The primary goal of managing asthma is to control it, and since the degradation of patients' quality of life is increasingly recognized as a serious

outcome in therapeutic trials, it should be regularly assessed using validated questionnaires. Inhaled corticosteroids (ICS), occasionally in larger doses and combined with long-acting beta-agonists (LABA) or other treatments, are typically used to treat patients with mild to moderate asthma. If oral corticosteroids (OCS), which are equivalent to prednisone or another steroid, are required for short periods of time during a flare-up in which people receiving treatment do not react to a four-fold increase in their baseline ICS dose, they may be utilized.

**Key Words:** *Bronchoscopy; pleural disease; interventional pulmonology.*

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### INTRODUCTION

Individuals with severe asthma frequently have an inadequate response to ICS (i.e., are refractory to conventional therapy), especially in certain patient subgroups (such as obese patients), where the severity may be lessened with particular tactics. These patients support the costs associated with asthma and are in charge of the majority of hospital admissions, calls to emergency services, and asthma-related fatalities. The annual cost of asthma patients in Portugal has a considerable influence on the National Health System and is primarily related to emergency services and treatments. The annual expense for asthmatics who are not under control is greater than twice that of individuals who are. The current usage of OCS or even biologic medicines (monoclonal antibodies) represent therapeutic possibilities in severe patients with disease control due to frequent asthma symptoms or frequent exacerbations despite excellent treatment. More than 60% of patients with severe asthma receive regular oral corticosteroid therapy, according to data from the SANI registry and a French study. Some adults with severe asthma can benefit with low-dose OCS in combination with other treatments (evidence level); nonetheless, it is frequently accompanied by serious

side effects (evidence level), which may affect the patient's quality of life and raise treatment expenses. Whether lower dose or short-term OCS regimens in asthma are less effective/safe than those with larger doses or protracted regimens was the subject of a systematic review published by the Cochrane Collaboration, which found that the data is still inconclusive. Contrary to T2-low asthma patients who respond poorly to corticosteroid therapy, patients with severe asthma and inflammation of the T2-type respond to OCS and frequently need high and continuous dosages. It wasn't until recently, during the age of widely used corticosteroid treatment for all asthma patients that it became clear that not all people respond equally well to this treatment strategy. It wasn't until recently, during the era of extensive use of corticosteroids to treat all asthma patients that it became clear that not all people respond to this course of treatment equally well. In this context, it may be believed that medicines that already exist and target particular inflammatory pathways implicated in the etiology of asthma, such as biologic drugs for patients with T2-type inflammation, have gradually supplanted the continuous use of OCS in asthma. We, therefore, sought to establish a national consensus toward the optimization of the use of corticosteroids given the

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severity of asthma, an unclear treatment algorithm for patients with various phenotypes, the overuse of corticosteroids in practice, and the variety of healthcare settings dealing with asthma patients. This study was created as a modified three-round Delphi exercise to see if a large group of medical specialists in asthma could reach a consensus on the subject of optimizing the use of oral corticosteroids in individuals with severe asthma. Six professionals with experience treating severe asthma from a variety of disciplines, including pulmonology and immunoallergology, as well as one epidemiologist, made up the scientific committee. The scientific committee assembled an expert panel of doctors (pulmonologists and allergologists with training in both clinical and academic management of asthma), representing public and private institutions across the country in order to account for any geographical differences. It was not essential to obtain institutional review board approval because the survey was completed anonymously and no personal information was gathered. The distribution and examination of the questionnaires were handled by the research assistance team, which also managed and oversaw the entire procedure. The scientific committee created the Delphi questionnaire, which at first contained Portuguese-language statements (items) arranged into three main topics: Chronic Systemic Corticotherapy (CSC) in Asthma Therapeutic Schemes of Systemic Corticotherapy in Crisis, and Maintenance of Asthma Safety and Monitoring. To encourage comments and explanations on the assertions, the research assistance team evaluated and provided the overall results from each round to all participants (group responses as well as individual responses). Members of the panel compared their personal opinions with those of the other participants in rounds. Participants were free to change their minds after making a decision for any statements for which there was no unanimous agreement. When making comments in the round, it was possible to reword statements or add new ones that had each been independently reviewed by the scientific committee before being included in Delphi. The scientific committee convened in person immediately following the round to review the results in detail and to hear the panelists' more in-depth perspectives.

The responses to the categories "strongly agree" and "agree" or "strongly disagree" and "disagree" were combined into "positive consensus" and "negative consensus," respectively, for the analysis. The percentage difference in the concordance ratio between rounds was employed as a measure of convergence. The consensus threshold (cut-off concordance) was determined as a percentage of participant agreement for each individual item equal or greater in the first round and equal or greater in subsequent rounds. A statement that did not receive unanimous support in one round was given another chance in the next round, and so on. The remaining statements were deemed to have failed to gain consensus after three rounds. The panelists' ratings and the degree of agreement they reached were used to analyze the group opinion for each item. With the assistance of professionals from several clinical specializations that regularly treat adult patients with severe asthma in Portugal, we were able to conduct a multidisciplinary, national Delphi consensus. The high rate of compliance with this exercise among the panelists may indicate how important they believe the subject to be for clinical practice. By using anonymous responses, the Delphi technique offers the advantage of eliminating the dominating personality effect and enabling panelists' perspectives to be reassessed in light of group resp-

-ponses without sacrificing the benefits of in-person conversations. Studies also highlight the importance of comments and in-person engagement as a strategy to encourage changes in the degree of agreement between rounds or to explain the causes of a lack of agreement. By the completion of round one of this Delphi questionnaire, about half of the propositions had received good consensus; 10 of them had a concordance equal. Statements had not come to a consensus by the end of the exercise. The lack of agreement with the statement "So far, chronic maintenance therapy with systemic corticosteroids in severe asthma has been avoided" could be a result of the text's ambiguity, which could cause misinterpretation. However, approximately two-thirds of the panelists believed that there was no overuse of OCS in the maintenance pharmacotherapy of severe asthma, which is far from the truth in our nation and should be addressed in subsequent educational initiatives. On the other hand, there was agreement that further measures are required to estimate the cumulative risk of using OCS in acute asthma exacerbations. The entire round of agreement was anticipated for several claims, such as item 9 ("Chronic exposure to systemic corticosteroids is significantly related with an increase of adverse events, such as infections, cardiovascular, metabolic, psychiatric, ophthalmic, gastrointestinal and bone problems."). Even so, the round's only unanimous agreement was on the statement that "Exposure to systemic corticosteroids, even in short-term administration, i.e. without considering chronic exposure, is associated with an increased risk of adverse events, such as infections, cardiovascular, metabolic, psychiatric, ocular, gastrointestinal, and bone complications." We might guess that there is less knowledge about short-term OCS side effects, but we should also be aware that the statement didn't quantify the rise in adverse events or clarify what short-term administration meant. The last round's successful consensus vote on the statement, "Even with the availability of biologic agents, a proportion of patients will still need systemic corticosteroids to control their severe asthma," showed that there is still some disagreement over whether other treatments could replace OCS. The committee emphasized during the in-person discussion that doctors may still think about using OCS for severe asthma even in the presence of new biologic medicines. Given that a significant portion of patients with severe asthma may not qualify for the currently available biological medicines, these therapies may still be useful given the clinical experience with OCS in type asthma. The round's unanimous agreement that "A severe asthma patient with more than severe asthma exacerbations treated with systemic corticosteroids, or asthma-related hospitalization in the last/past year, whenever eligible, should be treated with a biologic agent" was a success showed that biologic agents were viewed favorably by the audience. This stresses an especially crucial message for all doctors treating patients with severe asthma (both in acute and chronic settings), who must enhance their knowledge of the availability of these innovative medicines and reinforce the necessity of making prompt referrals. The statement, "Systemic corticosteroid therapy should not be commenced in patients with biologic criteria due to the possibility of developing problems endemic to systemic corticosteroid therapy," was not agreed upon. Given the current delays in our nation's permission of the use of biological agents, which leads to the rise in the number of untreated patients who require the initiation of OCS, this may have happened. OCS should typically be avoided before biologics, but when necessary, they can be

started at the lowest effective dosage for a brief period of time. This was disclosed during the experts' discussion. This indicates that biological drugs are now considered the first line of treatment for severe asthma, and OCS should be discontinued as soon as feasible after a biologic has been prescribed. Patients who do not respond to biological treatment may also not respond to OCS, especially in light of the fact that there are still unmet demands for innovative therapeutic strategies for non-type asthma. Both the statements "Systemic corticosteroids may be tried in patients with uncontrolled severe asthma who are ineligible for biologics in order to achieve control" and "Patients with uncontrolled severe asthma who are ineligible for biologics and treated with OCS, should have its effectiveness evaluated in months" emphasized this. The change in the outcomes that were previously specified for that particular patient should serve as the basis for that evaluation. In this situation, OCS treatment still appears to be a significant alternative for asthmatic patients, but regular evaluation and treatment that is specific to their needs must be given top priority. Therapeutic approaches must be revised if the added value is not achieved. Asthma control includes not just patient-reported outcomes (PROs), such as asthma symptoms, activity levels, health-related quality of life (HRQoL), and patient satisfaction, but also objective clinical outcomes (such as pulmonary function and exacerbations). When choosing a course of treatment, it is crucial to take into account PROs since they support physiologic and clinical assessments of asthma and may have an impact on adherence to therapy.