EDITORIAL

Asthma control uncontrolled

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At present, approximately 30 million people in Europe suffer from asthma. According to the estimations, in the next 5 years, about 120 000 people will die and another 4 million will be hospitalized as a result of an episode of uncontrolled asthma.[1]

Recently, the European Asthma Research and Innovation, a Europe-wide coalition for the improvement of asthma management, proposed to create a partnership among researchers and European health organizations, with the aim of reducing the annual death rate by 25% and hospitalizations by 50% within 10 years. Research strategies employed to improve the outcomes include, among others, the development of more efficient health care systems across Europe, establishment of European research network, and identification of new models and tools for better asthma phenotyping, diagnosis, treatment, and self-management.[2] Of those, particularly stressed is a better recognition of national and local needs, and national and regional asthma programs are strongly encouraged. Of note, Poland is among the most active European countries in initiating strategies to reduce asthma-related morbidity and mortality.[3] In this context, the real-life observational study of Kuna et al,[4] including more than 16 000 patients with asthma, published in the current issue of the *Polish Archive of Internal Medicine* (*Pol Arch Med Wewn*), is a valuable contribution to this problem in Poland.

The current management of asthma is focused on symptom control, lowering exacerbation rates, and preservation of airway function.[5] Currently, "uncontrolled" and "severe" asthma are distinguished. On the other hand, the definition of "uncontrolled severe asthma" includes also (apart from frequent severe exacerbations, serious exacerbations, and airflow limitation) symptom control assessed by the asthma control questionnaire or asthma control test.[6]

Importantly, efficient asthma control results in a considerable reduction of morbidity and mortality. The latest update of the Global Initiative for Asthma (GINA) guidelines provides a novel approach to control-based management of asthma.[5] Those include the following sequence: diagnosis confirmed by functional tests, assessment of symptom control and risk factors, treatment adjustment, and evaluation of outcomes (including side effects).[5]

According to the GINA guidelines, asthma control includes 2 domains: symptom control (previously known as "current clinical control") and the future risk of unwanted adverse events. Evaluation should be done at the start of treatment, after 3 to 6 months, and as frequently as needed. The decision about step-up (or step-down) treatment should be complemented by a thorough assessment of the inhaler technique, adherence, and other modifiable factors.[5]

The study by Kuna et al[4] clearly demonstrates a suboptimal control of asthma in a high proportion of patients in Poland. The full symptom control in this study was defined as the lack of day and night symptoms, no use of relievers, and unimpaired level of daily activities. The study was performed between 2010 and 2011 and used up-to-date methods. Future risk assessment was described by the number of exacerbation events during the year preceding the analysis, and defined by lung function and treatment-related adverse events. As an inappropriate use of inhalers is one of the important causes of ineffective asthma control, the study group was trained in the correct use of a pressurized metered-dose inhaler. In the beginning, the improper inhalation technique was found in 26% of the patients and decreased to 6% at the sixth visit. These results are in line with those from a recent survey including patients from 11 European countries, showing uncontrolled asthma in 45% of the patients.[7] Of note, only approximately half of the patients used inhalers every day, and every fourth patient with uncontrolled asthma found the use of inhalers difficult.[8] Earlier studies postulated that patients should be trained in a one-to-one session on the correct loading and use of particular inhalers. Kuna et al[4] also confirmed that the use of a fixed-dose combination of beclomethasone and formoterol, accompanied by a detailed inhalation assessment (with necessary corrections), allows

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for a long-term asthma control with an acceptable safety profile.

An important part of control-based asthma management is the treatment adjusted to both domains including symptom control and future risk. This includes effectiveness and safety, availability of particular inhalers, and acceptable costs, both at the population and individual levels. Furthermore, the final decision should also take into account the patient's preferences. All modifiable risk factors potentially deteriorating asthma should be identified and properly addressed. These include, for example, smoking cessation, weight reduction in obese patients, improvement of inhalation technique, diagnosis of comorbidities, and identification of new allergies or occupational factors.[8] Inhaled therapy is a cornerstone in the treatment of asthma.[5] A few classes of devices delivering aerosols are available, such as pressurized metered-dose inhalers, dry-powder inhalers, breath-actuated and soft-mist inhalers, and nebulizers. Chest physicians should be aware of the advantages and disadvantages of particular devices and should choose 1 device that is the most appropriate for the patient. The proper training and regular monitoring of the inhaler technique may further increase the success rate.[9] Finally, a fixed-dose combination in patients who require both inhaled glucocorticoids and long-acting β-agonists, is apparently more effective than the use of 2 separate inhalers.[5] Several factors are responsible for the final efficacy of inhaler treatment. Preferably, drug deposition should be sufficient both in the large and small airways, with high deposition in the lung and minimal deposition in the upper airways. An important factor of effective lung deposition is the size of aerosol particles. The question of whether the use of extrafine formulations (with particle size below 2 μm) is more effective than non-extrafine formulations has been a matter of investigations for almost a decade.[10] The study of Kuna et al[4] demonstrated a long-lasting efficacy of the extrafine combination of inhaled glucocorticoids and long-acting β-agonists in the control of uncontrolled asthma in a real-life setting. In summary, although the proper control is essential for improving clinical course of asthma, the fulfillment of this prerequisite remains a challenge.

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