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Technique Over Technology: Rethinking Inhaler Use in Obstructive Airway Disease

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Obstructive airway diseases like asthma and chronic obstructive pulmonary disease (COPD) continue to be a global problem, causing considerable suffering and using up a lot of healthcare resources. The situation concerning these diseases in Pakistan is made worse by factors such as urban migration, poor air quality, tobacco smoking, and lack of access to well-organized respiratory care. Many patients are living near the limit of inhaled medications because there is no perfect control of their disease. It is a paradox that very good drugs exist, yet poor outcomes persist, which requires a more thorough examination of factors beyond pharmacology. One of these factors is inhaler technique, a crucial, though continuously underrated, factor in the success of the therapy.

Obstructive airway diseases are managed mainly with inhaled medications, the reason being that these drugs are administered right where the problem is, and at the same time, systemic side effects are minimized. Inhaler technology has come a long way, and over the past few years, inhalers have been developed significantly to offer a wide range of devices, including pressurized metered-dose inhalers (MDIs), dry powder inhalers (DPIs), breath-actuated inhalers, and soft mist inhalers. When selecting a molecule or device, clinicians usually consider the disease severity, cost, and drug availability as the main factors. However, the efficacy of any given inhaler is, in the end, entirely dependent on the user's proficiency in using it correctly. Even the most advanced device won't work if the technique is wrong, so the lower airways won't get the proper dose.

Mistakes in using inhalers are surprisingly widespread and have been persistent across various populations and healthcare settings. To mention a few of the errors: patients using DPIs do not inhale forcefully enough, wrong timing of inhalation and exhalation during use of MDIs, not inhaling to the maximum before using the inhaler, not holding their breath long enough after drug delivery, and improper preparation of the device. However, these errors not only reduce drug delivery to the lungs but also cause poor control of the symptoms, more frequent exacerbations, and thus, the need for more intensive therapy. Particularly in low- and middle-income countries like Pakistan, where healthcare resources are already very limited, the impact of poor inhaler technique becomes more serious.[1-3]

A study published in this issue of the journal with the aims of comparison between two inhaler types, DPIs and MDIs, provides a very useful local piece of evidence on this matter. DPIs are often considered the easiest to use because coordination between hand and breath is no longer needed. The problem, however, is that DPIs require big inspiratory efforts, which may not be accomplished by the elderly, people with severe airflow limitation, or those having acute exacerbations. MDIs, on the contrary, require perfect coordination between actuation and inhalation, a skill many patients find hard to learn without multiple rounds of instruction and reinforcement. Such comparative studies bring out a very important message: No inhaler device is

superior if the technique applied is wrong.

Another important aspect is the role of medical personnel in ensuring that inhalers are used correctly. Research findings indicate that many doctors, nurses, and even pharmacists cannot demonstrate the correct way to use an inhaler. This lack of information and skills will always result in poor patient education. The evaluation of inhaler technique is often overlooked due to the time constraints and large patient volume in busy outpatient clinics, especially in public hospitals. Inhalers are sometimes prescribed without demonstration, and checking the patient's technique at follow-up visits has regrettably become routine.[4,5]

The situation becomes more complex when patient-related factors are taken into account. Adherence and technique are affected by low literacy, language difficulties, cultural beliefs, and misconceptions about inhaled therapy, among others. Patients, for instance, may stop using inhalers after their symptoms have lessened, or they may use the inhaler incorrectly out of fear of being dependent or experiencing side effects. Older adults and patients with cognitive or physical disabilities encounter more difficulties. These situations highlight the need for straightforward, culturally appropriate, and tailored inhaler education for each patient.[6]

The health systems perspective on giving the inhaler technique top priority suggests major benefits. The improvement of the technique has the potential to achieve many benefits, such as better control of the disease's symptoms, prevention of situations that lead to more hospital admissions, and, thus, a decrease in overall healthcare costs. Besides, these betterments can usually be obtained without the need for new medications or expensive technological interventions. Structured inhaler education programs that include repeated demonstrations and return demonstrations have been proven to significantly improve technique and clinical outcomes. Thus, the incorporation of such programs into routine care should not be considered as an optional add-on but, rather, as the essential pillar of evidence-based respiratory management.[2,4,7,8]

In Pakistan, a number of practical measures can be taken to resolve this historical issue. To start with, training in inhaler technique should be a part of the syllabus for undergraduate and postgraduate medical courses, as well as in nursing and pharmacy education. Then, respiratory clinic standard operating procedures should require inhaler technique assessment at every visit, especially when starting or changing therapy, and this should be implemented in all clinics nationwide. Third, outpatient departments can use local language visual aids, posters, and videos to reinforce the correct technique effectively. Lastly, allied healthcare professionals, such as respiratory therapists and trained nurses, can be empowered to take the lead in patient inhaler education, which may help overcome the time constraints faced by doctors.

The discussion about the types of devices, DPI versus MDI should then be an issue of the past. Rather than focusing on which inhaler is better, physicians should focus on which inhaler a certain patient can use correctly and consistently. Such a patient-centered strategy aligns with broader concepts of personalized medicine and shared decision-making. The choice of device should depend not only on clinical indications, cost, and other factors, but also on the patient's preferences, physical ability, and the provision of proper training.

Inhaler technology is not enough to manage obstructive airway diseases effectively; the technique will always be the main factor in success. The editorial theme of “Technique Over Technology” reminds us that optimizing current tools through education and skill development could have a greater impact than introducing new devices. We, as respiratory physicians and healthcare professionals, should not rely solely on the prescription pad; rather, we should take responsibility for ensuring that our patients are actually benefiting from the therapies we prescribe. Only by doing this can we figure out how to connect the gap between the efficacy shown in clinical trials and the real-world effectiveness in daily practice.

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