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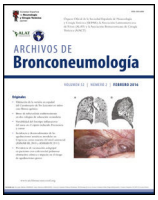

Editorial

Difficulties With Inhaled Therapy: A Complex Simple Technique☆

Dificultades en terapia inhalada: la complejidad de lo sencillo

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Inhaled therapy is one of the key factors in the management of the respiratory patient, especially in asthma and chronic obstructive pulmonary disease. However, we know that the margin of error of these devices is very wide and many studies have demonstrated that misuse leads to poorer disease control, a greater number of exacerbations and, consequently, increased health and social expenditure.[1–4] In addition to this problem, poor compliance reduces even further the chances of an effective therapeutic response.[5]

One of our obligations in daily clinical practice is to review the inhalation technique (IT) of each patient. The drug is not just a molecule, it is the combination of the molecule and the delivery device.

Diverse circumstances, including the pressure of rising healthcare demands, make it difficult to verify IT in each visit, so alternatives must be sought. One solution is to delegate this aspect of care to nursing staff dedicated to health education in respiratory disease. Some centers are already successfully implementing this practice.[6]

Another possibility may be to increase the involvement of primary care staff, but there are obvious difficulties with this approach, including the heavy care burden of this collective and the diversity of diseases that they manage.[7]

Respiratory health involves several hygiene and dietary measures that should be recommended in each patient visit: smoking cessation, weight loss, physical exercise, IT, etc. Often, however, given the short time available for consultations, these measures are not given the attention they deserve despite being at least as important as pharmacological interventions.

Yet another difficulty emerges in the assessment of IT: what in fact is a correct IT? Many authors have compiled checklists in the attempt to define correct IT, but these publications are at best inconsistent, and at worst contradictory.[8–10] Moreover, no consensus has been reached on what constitutes a critical error. At the present time, the most widely accepted definition is that which describes a critical error as one that can affect the effectiveness of the drug administered, leading to suboptimal disease control.[11]

Sanchis et al., in a review published in 2013, aimed to describe the most frequent errors for each of the existing devices but found it difficult to make a useful comparison given the heterogeneity of the different studies analyzed. The final conclusion, therefore, cannot be definitive, making it impossible to precisely define the most common errors.[12]

The difficulties of IT were identified decades ago; however, progress over the past 40 years has been slow and the increasing availability of different devices adds to the complexity of teaching proper techniques.[13] Who has never questioned their own ability to explain how an inhaler works? Can you imagine then the difficulties encountered by our patients and even other healthcare professionals who are not respiratory experts?

In addition to the problems involved in the use of each of the current devices (17 in all, including conventional pressurized metered dose inhalers [PMDI], Modulite, Respimat, breath-actuated inhalers [BAI] and 12 other dry powder devices, both monodose and multidose), the patient's individual characteristics also affect the proper performance of the technique. Factors such as age, sex, level of education, number of prescribed inhalers, comorbidities, socioeconomic status, etc., have been studied, but no clear association with poor IT has been demonstrated.[14] In this digital age, various smart inhalers and computer applications have been developed in an attempt to solve both the problem of poor IT and the problem of poor compliance,[15] although to date these have had little impact on daily clinical practice.

As our knowledge of the pathophysiology of chronic obstructive diseases grows, we try to individualize and create "a la carte" treatments, but some basic errors persist.

Now, more than ever, we need to look for solutions to improve something so simple yet so complex as IT.

Given the socioeconomic impact of these diseases, it is essential that we invest in education in IT from a multidisciplinary perspective, involving at least primary care physicians, nursing staff and pharmacists.

Our priority is to reach a consensus definition on correct IT, thus transmitting a clear and unambiguous message to both patients and other healthcare professionals.

Both pulmonologists and health authorities must make every effort to break through this regrettable 40 years of inertia.

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It is time to stop and think, and try to solve the issue of this complex simple technique.

References

1. Viejo-Bañuelos JL, Sanchis J. Inhaler devices: better management or new devices? The blind leading the blind. Arch Bronconeumol. 2018;54:245–6.
2. Roggeri A, Micheletto C, Roggeri DP. Inhalation errors due to device switch in patients with chronic obstructive pulmonary disease and asthma: critical health and economic issues. Int J COPD. 2016;11:597–602.
3. Chrystyn H, van der Palen J, Sharma R, Barnes N, Delafont B, Mahajan A, et al. Device errors in asthma and COPD: systematic literature review and meta-analysis. Primary Care Respir Med. 2017;22:1–10.
4. Freitas Ferreira E, Pascoal A, Silva P, Lourenço O, Valente S, Valente MJ, et al. Inhaler training and asthma knowledge are associated with a higher proportion of patients with correct inhaler technique in young but not in elderly asthmatic patients. J Asthma. 2019;27:1–11, http://dx.doi.org/10.1080/02770903.2019.1582063.
5. Rodríguez C, Lourido T, González-Barcala FJ. Estudio ATAUD: la necesidad de mejorar la adherencia. Arch Bronconeumol. 2019.
6. Barja-Martínez E, Casas-González S, Simón-López AF, Mancheño-Ovejero C, Padial-de la Cruz MLG. Adherence to inhaled therapy in the outpatient setting. Enferm Clin. 2019;29:34–8.
7. Bosnic-Anticevich S, Kritikos V, Carter V, Yan KY, Armour C, Ryan D, et al. Lack of asthma and rhinitis control in general practitioner-managed patients prescribed fixed-dose combination therapy in Australia. J Asthma. 2018;55:684–94.
8. Shealy KM, Paradiso VC, Slimmer ML, Campbell DL, Threatt TB. Evaluation of the prevalence and effectiveness of education on metered-dose inhaler technique. Res Care. 2017;65:882–7.
9. Luczak-Wozniak K, Dabrowska M, Domagala I, Miszczuk M, Lubanski W, Leszczynski A, et al. Mishandling of pMDI and DPI inhalers in asthma and COPD – repetitive and non-repetitive errors. Pulm Pharmacol Ther. 2018;51:65–72.
10. Mahon J, Fitzgerald A, Glanville J, Dekhuijzen R, Glatte J, Glnemann S, et al. Misuse and/or treatment delivery failure of inhalers among patients with asthma or COPD: a review and recommendations for the conduct of future research. Resp Med. 2017;129:98–116.
11. Giraud V, Roche N. Misuse of corticosteroid metered-dose inhaler is associated with decreased asthma stability. Eur Respir J. 2002;19:246–51.
12. Sanchis J, Corrigan C, Levy ML, Viejo JL, ADMIT Group. Inhaler devices – from theory to practice. Respir Med. 2013;107:495–502.
13. Sanchis J, Gich I, Pedersen S. Systematic review of errors in inhaler use. Has patient technique improved over time? Chest. 2016;150:394–406.
14. Usmani S, Lavorini F, Marshall J, Dunlop WCN, Heron L, Farrington E, et al. Critical inhaler errors in asthma and COPD: a systematic review of impacto in health outcomes. Respir Res. 2018;19:10.
15. Pleasants RA, Hess DR. Aerosol delivery devices for obstructive lung diseases. Respir Care. 2018;63.