Inhalers to treat asthma and COPD

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Various inhalation products and inhalers are currently on the market, and their characteristics may differ between types of product (dry powder, aerosol, nebuliser) but also between types of inhalers. Inhalers are subject to drug registration regulations as they are provided together with the medication. In addition, they are subject to a number of supplementary guidelines regarding the quality of the inhalers and the bio-equivalence of new inhalers. What type of inhaler will be suitable for a particular patient theoretically depends on the type of drug that is to be delivered, the particle size of the inhaled drug, the speed of inhalation, the patient’s respiratory power and volume and the patient’s ability to use the correct inhalation technique. The characteristics of the inhaler may affect the distribution of the drug over the lungs, but research has found no clear differences in efficacy between the various types of inhalers, although there are indications of a potential problem of cardiovascular adverse effects of tiotropium in the Respimat inhaler.

The choice of a particular type of inhaler should therefore be based on other criteria, such as side-effects, ease of use and costs. In practice, care providers often have to rely on their own experience, which implies that prescription practices are unfortunately not evidence-based. The large number of different inhalers available makes it impossible for care providers to gain enough experience with all types. Hence, it is advisable for them to gain experience with a limited range of inhalers. If the efficacy of a particular inhaler proves to be insufficient, the first thing to try is to improve the patient’s inhalation technique, rather than switching to another inhaler. It is often claimed that aerosols (pressurised metered dose inhalers, or pMDIs) require good coordination between hand and lungs and are therefore more difficult to use correctly. However, there is insufficient evidence to state a preference based on this criterion. In addition, patients are advised to use the pMDI in combination with a spacer, which invalidates this argument. Some drugs and fixed combinations are only available with one particular inhaler, making it difficult to prescribe only one type of inhaler to each patient. The preference for nebulisers to treat exacerbations expressed in the guidelines of the Dutch College of General Practitioners cannot be substantiated with objective evidence. Hence, the choice of a pMDI with a spacer and possibly a facemask or nebuliser could be determined by cost considerations.

Reports to the Dutch adverse effects reporting centre Lareb concerning an increase in the number of reported adverse effects of the Sandoz salbutamol inhaler appear to be due to a change in the product, rather than to a defective or inferior product, although it remains to be seen if the peak in reports will decline as patients have had more time to get used to the new inhaler. The same goes for reports about the Vincion fluticasone/salmeterol inhaler by Focus Pharma. Both reports do, however, show that switching inhalers purely based on the health insurers’ preference policy involves adjusting inhalation instructions and causes discomfort and anxiety among patients, and should therefore be avoided.

Manufacturers frequently advertise the advantages of their inhalers. Their claims are, however, insufficiently substantiated by research. As long as sound scientific research is lacking, the initial choice of a particular inhaler can be made on the basis of prices and patient preferences.

References


*The literature refers to the Dutch text