β₂-agonists — from pharmacological properties to everyday clinical practice

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INTRODUCTION

β₂-agonists have an important role in the treatment of asthma alongside inhaled corticosteroids. Short-acting agents have been used for three decades—their fast onset of bronchodilation has made them ideal for providing immediate relief of symptoms. During this time, however, there has been much debate about the suitability of β₂-agonists for regular maintenance therapy. More recently, with the introduction of agents with long-acting profiles, i.e. formoterol and salmeterol, it has been recognized that β₂-agonists have different pharmacological properties and are therefore suitable for use in different situations. Current guidelines recommend the use of short-acting β₂-agonists as first-line reliever medication and long-acting β₂-agonists as regular therapy for patients inadequately controlled on inhaled corticosteroids.

Formoterol (Oxis® Turbuhaler®) has a unique pharmacological profile and is both fast- and long-acting. It is already widely used in maintenance therapy in combination with inhaled corticosteroids and, with an onset of action similar to salbutamol, it is also suitable for use as needed for symptom relief. This unique profile prevents formoterol from being accurately placed into current classifications of β₂-agonists, which are based on duration of effect, i.e. short-acting or long-acting agents. Long-acting agents have traditionally been seen as unsuitable for as-needed relief of symptoms—this is appropriate for salmeterol because it has a slow onset of effect, but not for formoterol. Therefore, it may be more informative to differentiate agents by a combination of onset and duration of effect.

The presentations from a series of international workshops, the Oxis® World Lecture Series (OWLS), which took place in London (February 2000), Singapore (June 2000) and Brussels (September 2000) form the basis for this supplement. The meetings, entitled ‘β₂-agonists—from pharmacological properties to everyday clinical practice’, were led and attended by key specialists from all over the world. The principal objective was to discuss advances in clinical research into β₂-agonists and the integration of this knowledge into clinical practice, with particular emphasis on the changing role of formoterol. The topics covered include the evolution of β₂-agonist therapy; the pharmacological profile of different β₂-agonists; clinical aspects of formoterol treatment, i.e. efficacy and safety, when used both as reliever and as maintenance therapy; the use of the Turbuhaler® device and, finally, the position of formoterol in relation to current treatment guidelines.