New drugs

Olodaterol

Approved indication: chronic obstructive pulmonary disease

Striverdi Respimat (Boehringer Ingelheim) inhaler cartridge containing 2.5 microgram per actuation

Australian Medicines Handbook section 19.1.1

If a patient with chronic obstructive pulmonary disease remains symptomatic despite the appropriate use of a short-acting bronchodilator, a long-acting bronchodilator can be added. Eformoterol, indacaterol and salmeterol are already available, so olodaterol adds to the choice of long-acting beta$_2$ agonists for maintenance treatment.

The olodaterol inhaler contains a solution of olodaterol hydrochloride. Two puffs of the inhaler deliver a dose of 5 microgram olodaterol. The peak plasma concentration is reached 10–20 minutes after inhalation. The duration of bronchodilation is at least 24 hours so the recommended dose is 5 microgram once daily. No dose adjustment is needed in patients with moderate liver impairment or severe renal impairment. (There are no data in patients with severe hepatic impairment.) Most of the absorbed dose is metabolised and excreted in the faeces. The terminal half-life following inhalation is around 45 hours.

At the time of writing most of the major clinical trials of olodaterol had not been published. Approximately 2000 people were treated at the recommended dose with trials lasting from 6 to 48 weeks. The patients had moderate to very severe chronic obstructive pulmonary disease and a smoking history of at least 10 pack-years.

Two placebo-controlled trials of olodaterol studied patients for 48 weeks, but used lung function at 12 weeks as the primary end point for efficacy. After 12 weeks the difference in the mean forced expiratory volume in one second, measured before the next dose (trough FEV$_1$), between olodaterol 5 microgram and placebo was 91 mL in one study and 47 mL in the other. After 24 weeks the differences were 86 mL and 69 mL more than placebo and the differences were statistically significant throughout the 48 weeks of the trials. Patients taking olodaterol had a significantly reduced need for 'rescue' bronchodilator treatment.

Two other controlled trials included eformoterol (12 microgram twice daily) as well as placebo. Although they were also 48-week studies, efficacy was assessed after 24 weeks. At that time the patients taking olodaterol had mean trough FEV$_1$ values that were 53 mL and 78 mL more than placebo. The differences between eformoterol and placebo were 42 mL and 54 mL. For most of the 48 weeks, the differences in trough FEV$_1$ between the active drugs and placebo were statistically significant.

The potential adverse effects of olodaterol are similar to those of other inhaled beta$_2$ agonists. These include increased pulse and blood pressure and hypokalaemia. Some patients with cardiovascular disease were excluded from the clinical trials. Adverse events caused 7.2% of the patients to stop olodaterol compared with 8.8% of the placebo group.

While olodaterol only needs to be given once a day it does not have any clear advantage over other long-acting beta$_2$ agonists. It significantly improves trough FEV$_1$, but only by a modest amount. This effect may not be significant if the patient is already being treated with tiotropium. In studies of exercise endurance patients given olodaterol for six weeks could exercise for an extra 42–52 seconds compared to patients given a placebo. Olodaterol has no significant effects on exacerbations of chronic obstructive pulmonary disease. Although a bronchodilator effect can be detected five minutes after an inhalation of olodaterol, it is not approved for treating acute bronchospasm or asthma.

[T][T][T] manufacturer provided clinical evaluation

REFERENCES *A

(none)

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The Transparency score ([T]) is explained in 'New drugs: T-score for transparency', Aust Prescr 2014;37:27.

* At the time the comment was prepared, information about this drug was available on the website of the Food and Drug Administration in the USA (www.fda.gov)

A At the time the comment was prepared, information about this drug was available on the website of the Therapeutic Goods Administration (www.tga.gov.au/industry/pm-auspar.htm)

Some of the views expressed in the following notes on newly approved products should be regarded as preliminary, as there may be limited published data at the time of publication, and little experience in Australia of their safety or efficacy. However, the Editorial Executive Committee believes that comments made in good faith at an early stage may still be of value. Before new drugs are prescribed, the Committee believes it is important that more detailed information is obtained from the manufacturer's approved product information, a drug information centre or some other appropriate source.