

VENTOLIN™ TABLETS

Salbutamol sulphate

PRESENTATION

Ventolin tablets 2mg are white, round, flat tablets with bevelled edges and engraved with $\frac{GX}{CN3}$. Each tablet contains Salbutamol BP 2mg as sulphate.

Ventolin tablets 4mg are white, round, flat tablets with beveled edges and engraved with $\frac{GX}{CN5}$. Each tablet contains Salbutamol BP 4mg as sulphate.

CLINICAL PARTICULARS

Indications

Salbutamol is a selective beta-₂ adrenoceptor agonist indicated for the treatment or prevention of bronchospasm. It provides short acting bronchodilation in reversible airways obstruction due to asthma, chronic bronchitis and emphysema.

Bronchodilators should not be the only or main treatment in patients with persistent asthma. In patients with persistent asthma unresponsive to *VENTOLIN*, treatment with inhaled corticosteroids is recommended to achieve and maintain control. Failing to respond to treatment with *VENTOLIN* may signal a need for urgent medical advice or treatment.

VENTOLIN tablets 2mg and 4mg are indicated for the relief of bronchospasm in bronchial asthma of all types, chronic bronchitis and emphysema.

Dosage and Administration

VENTOLIN as a duration of action of 4 to 6 hours in most patients.

Increasing use of beta-2 agonists may be a sign of worsening asthma. Under these conditions a reassessment of the patient's therapy plan may be required and concomitant glucocorticosteroid therapy should be considered.

As there may be adverse effects associated with excessive dosing, the dosage or frequency of administration should only be increased on medical advice.

Adults

The usual effective dose is 4mg 3 or 4 times per day. If adequate bronchodilation is not obtained, each single dose may be gradually increased to as much as 8mg.

However, it has been established that some patients obtain adequate relief with 2mg 3 or 4 times daily.

Children

The following doses should be administered 3 or 4 times daily:

2 - 12 years - 1 tablet 2mg

Over 12 years - 2 - 4mg as 1 tablet 2mg or 1 tablet 4mg

The drug is well tolerated by children so that, if necessary, the doses can be cautiously increased.

Special patient groups

In elderly patients or in those known to be unusually sensitive to beta-adrenergic stimulant drugs, it is advisable to initiate treatment with 2mg salbutamol 3 or 4 times per day.

Contraindications

VENTOLIN Tablets are contraindicated in patients with a history of hypersensitivity to any of their components.

Non-i.v. formulations of *VENTOLIN* must not be used to arrest uncomplicated pre-mature labour or threatened abortion.

Warnings and Precautions

The management of asthma should normally follow a stepwise programme, and patient response

should be monitored clinically and by lung function tests.

Increasing use of short-acting inhaled beta₂ agonists to control symptoms indicates deterioration of asthma control. Under these conditions, the patient's therapy plan should be reassessed. Sudden and progressive deterioration in asthma control is potentially life-threatening and consideration should be given to starting or increasing corticosteroid therapy. In patients considered at risk, daily peak flow monitoring may be instituted.

Patients should be warned that if either the usual relief is diminished or the usual duration of action reduced, they should not increase the dose or its frequency of administration, but should seek medical advice.

VENTOLIN should be administered cautiously to patients with thyrotoxicosis.

Potentially serious hypokalaemia may result from beta₂ agonist therapy mainly from parenteral and nebulised administration. Particular caution is advised in acute severe asthma as this effect may be potentiated by concomitant treatment with xanthine derivatives, steroids, diuretics and by hypoxia. It is recommended that serum potassium levels are monitored in such situations.

In common with other beta-adrenoceptor agonists, *VENTOLIN* can induce reversible metabolic changes, for example increased blood sugar levels. The diabetic patient may be unable to compensate for this and the development of ketoacidosis has been reported. Concurrent administration of corticosteroids can exaggerate this effect.

Interactions

VENTOLIN and non-selective beta-blocking drugs, such as propranolol, should not usually be prescribed together.

VENTOLIN is not contraindicated in patients under treatment with monoamine oxidase inhibitors (MAOIs).

Pregnancy and Lactation

Fertility

There is no information on the effects of salbutamol on human fertility. There were no adverse effects on fertility in animals (see *Pre-clinical Safety Data*).

Pregnancy

Administration of drugs during pregnancy should only be considered if the expected benefit to the mother is greater than any possible risk to the foetus.

During worldwide marketing experience, rare cases of various congenital anomalies, including cleft palate and limb defects have been reported in the offspring of patients being treated with salbutamol. Some of the mothers were taking multiple medications during their pregnancies. As no consistent pattern of defects can be discerned, and baseline rate for congenital anomalies is 2 to 3%, a relationship with salbutamol use cannot be established.

Lactation

As salbutamol is probably secreted in breast milk its use in nursing mothers is not recommended unless the expected benefits outweigh any potential risk.

It is not known whether salbutamol in breast milk has a harmful effect on the neonate.

Effects on Ability to Drive and Use Machines

None reported

Adverse Reactions

Adverse reactions are listed below by system organ class and frequency. Frequencies are defined as: very common ($\geq 1/10$), common ($\geq 1/100$ to $< 1/10$), uncommon ($\geq 1/1000$ to $< 1/100$), rare ($\geq 1/10,000$ to $< 1/1000$) and very rare ($< 1/10,000$) including isolated reports. Very common and common reactions were generally determined from clinical trial data. Rare and very rare reactions were generally determined from spontaneous data.

Immune system disorders

Very rare: Hypersensitivity reactions including angioedema, urticaria, bronchospasm, hypotension and collapse.

Metabolism and nutrition disorders

Rare: Hypokalaemia. Potentially serious hypokalaemia may result from beta₂ agonist therapy.

Nervous system disorders

Very common: Tremor.

Common: Headache.

Very rare: Hyperactivity.

Cardiac disorders

Common: Tachycardia, palpitations.

Uncommon: Myocardial ischaemia*

*In the management of pre-term labour with Ventolin injection/solution for infusion.

Rare: Cardiac arrhythmias including atrial fibrillation, supraventricular tachycardia and extrasystoles.

Vascular disorders

Rare: Peripheral vasodilatation.

Musculoskeletal and connective tissue disorders

Common: Muscle cramps.

Very rare: Feeling of muscle tension.

Overdose

The most common signs and symptoms of overdose with *VENTOLIN* are transient beta agonist pharmacologically mediated events (see *Warnings and Precautions* and *Adverse Reactions*).

Hypokalaemia may occur following overdose with *VENTOLIN*. Serum potassium levels should be monitored.

Lactic acidosis has been reported very rarely in association with high therapeutic doses of intravenous and nebulised short-acting beta-agonist therapy, mainly in patients being treated for an acute asthma exacerbation (see *Adverse Reaction* section). Increase in lactate levels may lead to dyspnoea and compensatory hyperventilation, which could be misinterpreted as a sign of asthma treatment failure and lead to inappropriate intensification of short-acting beta-agonist treatment. It is therefore recommended that patients are monitored for the development of elevated serum lactate and consequent metabolic acidosis in this setting.

Nausea, vomiting and hyperglycaemia have been reported, predominantly in children and when salbutamol overdose has been taken via the oral route.

Treatment

Further management should be as clinically indicated or as recommended by the national poisons centre, where available.

PHARMACOLOGICAL PROPERTIES

Pharmacodynamics

Salbutamol is a selective beta₂ adrenoceptor agonist. At therapeutic doses it acts on the beta₂ adrenoceptors of bronchial muscle providing short acting (4 to 6 hour) bronchodilation in reversible airways obstruction.

Pharmacokinetics

Salbutamol administered intravenously has a half-life of 4-6 hours and is cleared partly renally and partly by metabolism to the inactive 4'-O-sulphate (phenolic sulphate) which is also excreted primarily in the urine. The faeces are a minor route of excretion. The majority of a dose of salbutamol given intravenously, orally or by inhalation is excreted within 72 hours. Salbutamol is bound to plasma proteins to the extent of 10%.

After oral administration, salbutamol is absorbed from the gastrointestinal tract and undergoes considerable first-pass metabolism to the phenolic sulphate. Both unchanged drug and conjugate are excreted primarily in the urine. The bioavailability of orally administered salbutamol is about 50%.

Pre-clinical Safety Data

In common with other potent selective beta₂ receptor agonists, salbutamol has been shown to be teratogenic in mice when given subcutaneously. In a reproductive study, 9.3% of fetuses were found to have cleft palate, at 2.5 mg/kg, 4 times the maximum human oral dose. In rats, treatment-related effects observed were an increase in neonatal mortality at the high dose (50 mg/kg/day) in an oral study, as a result of lack of maternal care, and a dose-related inhibition of fetal development in oral and subcutaneous studies. A reproductive study in rabbits revealed cranial malformations in 37% of fetuses at 50 mg/kg/day, 78 times the maximum human oral dose.

Reproduction studies in rats demonstrated no evidence of impaired fertility at oral doses of *VENTOLIN* up to 50 mg/kg.

PHARMACEUTICAL PARTICULARS

List of Excipients

Lactose monohydrate
Starch (maize starch and pregelatinized starch)
Magnesium stearate
Water

Incompatibilities

None reported.

Shelf Life

3 years. The expiry date is indicated on the packaging.

Special Precautions for Storage

Store below 25°C. Store in a dry place and replace cap securely.

Nature and Contents of Container

VENTOLIN tablets 2mg and 4mg are supplied in securitainers of 100 and 500 tablets. Not all presentations are available in every country.

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