

## Asthalin Respules

### 1. Brand Name

Asthalin respules

### 2. Generic name

Salbutamol sulphate

### 3. Dosage Form

Solution for inhalation (via a nebulizer): 2.5 mg/ 2.5 ml (1 mg/ml)

### 4. Indication & Usage

Salbutamol is a selective beta2-adrenoreceptor agonist. At therapeutic doses, it acts on the beta2-adrenoceptors of bronchial smooth muscle, with little or no action on the beta1-adrenoceptors of the cardiac muscle. Salbutamol provides short-acting (4-6 hours) bronchodilation with a fast onset (within 5 minutes) in reversible airways obstruction.

Asthalin Respules are indicated for use in the routine management of chronic bronchospasm unresponsive to conventional therapy, and in the treatment of acute severe asthma.

### 5. Dosage & Administration

Asthalin Respules are for oral inhalation use only, to be inhaled in through the mouth via a suitable nebulizer, as instructed by a physician.

**THE SOLUTION SHOULD NOT BE INJECTED OR SWALLOWED.**

Asthalin Respules are intended to be used undiluted. However, if prolonged delivery time (more than 10 minutes) is required, the solution may be diluted with sterile normal saline.

*Adults (including the elderly):*

2.5mg to 5mg salbutamol up to four times a day. Up to 40mg per day can be given under strict medical supervision in hospital.

*Children (4 years and above)*

2.5mg to 5mg up to four times a day.

*Infants (under 18 months old)*

Clinical efficacy of nebulized salbutamol in infants under 18 months is uncertain. As transient hypoxia may occur supplemental oxygen therapy should be considered.

### 6. Adverse reactions

Adverse events are listed below by system organ class and frequency. Frequencies are defined as: very common (1/10), common (1/100 and <1/10), uncommon (1/1000 and <1/100), rare (1/10,000 and <1/1000) and very rare (<1/10,000). Very common and common events were generally determined from clinical trial data. Rare, very rare and unknown events were generally determined from spontaneous data.

*Common:* Restlessness, Tremor, headache, Tachycardia.

*Uncommon:* Lactic acidosis, Palpitations, Angina pectoris, blood pressure effects (lowering/increase), Mouth and throat irritation, Nausea, taste alteration.

*Rare:* Hypokalemia, Hyperglycemia, Peripheral vasodilatation, collapse, Pruritis, rash, erythema, urticaria, angioedema, Headache, application site reaction (mouth and throat irritation, burning sensation of the tongue).

*Very rare:* Hypersensitivity reactions including angioedema, urticaria, bronchospasm, hypotension and collapse, Hyperactivity, Hyperexcitability, sleeping disturbances, hallucinations, Cardiac arrhythmias including atrial fibrillation, supraventricular tachycardia and extra systoles, Paradoxical bronchospasm.

## **7. Contraindications**

Asthalin Respules is contraindicated in patients with a history of hypersensitivity to any of the components.

Rare cases of hypersensitivity reactions including urticaria, angioedema and rash have been reported after the use of salbutamol.

Although intravenous salbutamol, and occasionally salbutamol tablets, are used in the management of premature labor uncomplicated by conditions such as placenta Previa, ante-partum hemorrhage, or toxemia of pregnancy, inhaled salbutamol preparations are not appropriate for managing premature labor. Salbutamol preparations should not be used for threatened abortion.

## **8. Drug interactions**

Salbutamol preparations should be used with caution in patients suffering from thyrotoxicosis. Asthalin Respules and non-selective beta-blocking drugs such as propranolol should generally not be prescribed together. However, under certain circumstances, e.g., as prophylaxis after myocardial infarction, there may be no acceptable alternatives to use beta-adrenergic blocking agents in patients with asthma. In this setting, cardio selective beta-blockers should be considered, although they should be administered with caution.

Tricyclic antidepressants may increase the risk of cardiovascular side effects. Corticosteroids may increase the risk of hyperglycemia.

The ECG changes and/or hypokalemia that may result from the administration of non-potassium-sparing diuretics (such as loop or thiazide diuretics) can be acutely worsened by beta-agonists, especially when the recommended dose of the beta-agonist is exceeded. Although the clinical relevance of these effects is not known, caution is advised in the co-administration of beta-agonists with non-potassium-sparing diuretics. Consider monitoring potassium levels.

Particular caution is advised in acute severe asthma as this effect may be potentiated by con-comitant treatment with xanthine derivatives, steroids, digoxin, diuretics, and by hypoxia. It is recommended that serum potassium levels be monitored in such situations.

Exceeding the prescribed dose can be dangerous with resultant cardiac effects, hypokalemia, taste alteration, nausea, restlessness, sweating, headache, or tremor.

Asthalin Respules should be administered with extreme caution to patients being treated with monoamine oxidase inhibitors or tricyclic antidepressants or within 2 weeks discontinuation of such agents, because the action of salbutamol on the vascular system may be potentiated.

## **9. Warnings & Precautions**

Asthalin Respules must only be used for inhalation, to be inhaled in through the mouth via a suitable nebulizer, and must not be injected or swallowed.

Bronchodilators should not be the only or main treatment in patients with severe or unstable asthma. Severe asthma requires regular medical assessment, including lung-function testing, as patients are

at risk of severe attacks and even death. Physicians should consider using the maximum recommended dose of inhaled corticosteroid and/or oral corticosteroid therapy in these patients. Patients receiving treatment at home should seek medical advice if treatment with Asthalin Respules becomes less effective. The dosage or frequency of administration should only be increased on medical advice.

Patients being treated with Asthalin Respules may also be receiving other dosage forms of short-acting inhaled bronchodilators to relieve symptoms. Increasing use of bronchodilators, particular short-acting inhaled beta<sub>2</sub>-agonists, to relieve symptoms, indicates deterioration of asthma control. The patient should be instructed to seek medical advice if short-acting relief bronchodilator treatment becomes less effective or more inhalations than usual are required. In this situation, patients should be assessed and consideration given to the need for increased anti-inflammatory therapy (e.g., higher doses of inhaled corticosteroid or a course of oral corticosteroids).

Severe exacerbations of asthma must be treated in the normal way.

Salbutamol should be administered cautiously to patients suffering from thyrotoxicosis.

Salbutamol, like all other beta-adrenergic agonists, can produce clinically significant cardiovascular effects in some patients as measured by pulse rate, blood pressure, and/or symptoms. Although such effects are uncommon after administration of salbutamol at recommended doses, if they occur, the drug may need to be discontinued. In addition, beta-agonists have been reported to produce electrocardiogram (ECG) changes, such as flattening of the T wave, prolongation of the QTc interval, and ST segment depression. The clinical significance of these findings is unknown. Therefore, salbutamol, like all sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension.

Immediate hypersensitivity reactions may occur after administration of salbutamol, as demonstrated by cases of urticaria, angioedema, rash, bronchospasm, anaphylaxis, and oropharyngeal edema.

Asthalin Respules should be used with care in patients who are known to have received large doses of other sympathomimetic drugs. Potentially serious hypokalemia may result from beta<sub>2</sub>-agonist therapy, mainly from parenteral and nebulized administration. Particular caution is advised in acute severe asthma as this effect may be potentiated by hypoxia and by concomitant treatment with xanthine derivatives, steroids, and diuretics. Serum potassium levels should be monitored in such situations.

Like other beta-adrenoceptor agonists, salbutamol can induce reversible metabolic changes such as increased blood glucose levels. Diabetic patients may be unable to compensate for the increase in blood glucose and the development of ketoacidosis has been reported. Concurrent administration of corticosteroids can exaggerate this effect.

Lactic acidosis has been reported in association with high therapeutic doses of intravenous and nebulized short-acting beta-agonist therapy, mainly in patients being treated for an acute asthma exacerbation. Increase in lactate levels may lead to dyspnea 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.

In the following cases, salbutamol should only be used with caution and if strictly indicated: serious cardiac disorders, in particular recent myocardial infarction, coronary heart disease, hypertrophic obstructive cardiomyopathy and tachyarrhythmia (due to the positive inotropic effect of  $\beta_2$  – agonists) severe and untreated hypertension, aneurysm, hyperthyroidism, diabetes which is difficult

to control, pheochromocytoma. The administration of salbutamol in patients with acute asthma may cause a further reduction of the O<sub>2</sub> saturation. Exceeding the prescribed dose can be dangerous with resultant cardiac effects, hypokalemia, taste alteration, nausea, restlessness, sweating, headache, or tremor.

There is some evidence from post-marketing data and published literature of rare occurrences of myocardial ischemia associated with salbutamol. Patients with underlying severe heart disease (e.g. ischemic heart disease, arrhythmia or severe heart failure) who are receiving salbutamol should be warned to seek medical advice if they experience chest pain or other symptoms of worsening heart disease.

## **10. Pregnancy & Lactation**

### *Pregnancy*

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

As with the majority of drugs, there is little published evidence of the safety of salbutamol in the early stages of human pregnancy, but in animal studies there was evidence of some harmful effects on the fetus at very high dose levels.

### *Lactation*

As salbutamol is probably secreted in breast milk, its use in nursing mothers requires careful consideration. It is not known whether salbutamol has a harmful effect on the neonate, and so its use should be restricted to situations where it is felt that the expected benefit to the mother is likely to outweigh any potential risk to the neonate.

## **11. Storage condition**

Store below 25°C.

Protect from light and excessive heat.

Store Respules in foil pouch at all time. Once the foil is opened, the Respules should be used within one month.

Keep out of the reach of children.

## **12. Packaging**

Each box contains 20 Respules, 2.5 ml of each.

## **13. License Holder**

CIPLA LTD/ India

## **14. Marketing Authorization Holder in IRAN**

Koushan Pharmed