Salbutamol Sulfate Asmalin®

100 mcg/dose Metered-dose Inhaler
(CFC/ODS-Free)
Adrenergic (Selective Beta$_2$-Adrenoreceptor Agonist)

Rx

FORMULATION
Each actuation of metered-dose inhaler delivers:
Salbutamol sulfate ……..... 100 mcg

PRODUCT DESCRIPTION
Salbutamol sulfate (Asmalin®) 100 mcg/dose metered-dose inhaler (CFC/ODS-Free) is a suspension aerosol for oral inhalation supplied in a pressurized container. Asmalin uses hydrofluoroalkane (HFA) as propellant. This does not change the efficacy of salbutamol at the same nominal dose.

PHARMACODYNAMICS
Salbutamol is a selective short-acting beta$_2$-agonist with a preferential effect on beta$_2$-receptors found in the respiratory tract. It stimulates adenyl cyclase, the enzyme which catalyzes the conversion of adenosine triphosphate (ATP) to cyclic-3',5'-adenosine monophosphate (cAMP). cAMP mediates cellular responses such as bronchial smooth muscle relaxation resulting in bronchodilation.

PHARMACOKINETICS
Salbutamol is readily absorbed from the gastrointestinal tract after oral administration. When given by inhalation, 10% to 20% of the dose reaches the lower airways. The remainder is retained in the delivery system or is deposited in the oropharynx from where it is swallowed. Plasma protein binding is around 10%.

Salbutamol undergoes first-pass metabolism in the liver, being converted to salbutamol 4'-O-sulfate. The plasma half-life of salbutamol has been estimated to range from 4 to 6 hours. Salbutamol is rapidly excreted, mainly in the urine, as metabolites and unchanged drug; a smaller proportion is excreted in the feces. Majority of a salbutamol dose given orally or by inhalation is excreted within 72 hours.

Bronchodilation begins within 5 to 15 minutes after oral inhalation of salbutamol, peaks in 0.5 to 3 hours, and persists 2 to 5 hours. In some patients, bronchodilation may persist up to 6 hours.

INDICATIONS
- For the relief of bronchospasm associated with reversible obstructive airway diseases such as bronchial asthma and chronic obstructive pulmonary disease
- For the prevention of exercise-induced bronchospasm if the drug is given before exertion

DOSAGE AND MODE OF ADMINISTRATION
For the relief of bronchospasm
- Rapid-acting inhaled beta$_2$-agonists, such as salbutamol, should be used only on as-needed basis at the lowest dose and frequency required.

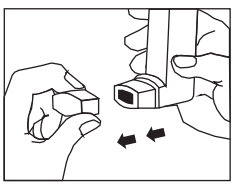
Adults and children ≥ 4 years old: 100 or 200 mcg (1 or 2 inhalations) as needed every 4 to 6 hours, or, as prescribed by a doctor.

- The bronchodilator effect of each administration of salbutamol inhaler lasts for at least 4 hours. If a previously effective fixed dosage fails to provide the usual relief, consult a physician for medical advice as this is a sign of worsening of asthma that would require reassessment of therapy.

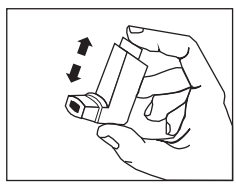
For the prevention of exercise-induced bronchospasm

Adults: 200 mcg (2 inhalations) 15 to 30 minutes before exercise
Children ≥ 4 years old: 100 or 200 mcg (1 or 2 inhalations) 15 to 30 minutes before exercise

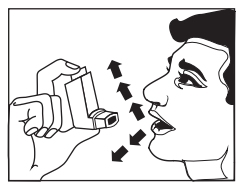
Directions for use:
- Before initial use and if the product has not been used for several days, remove the cap from the mouthpiece and shake the inhaler well, then release 4 puffs into the air (away from the face).
- Using the inhaler:



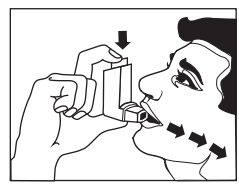
1. Remove the cap from the mouthpiece and hold inhaler upright.



2. Shake the inhaler well.



3. Breathe out fully, then place the mouthpiece into the mouth and close lips firmly around it.



4. Press down the inhaler to release the medicine, while breathing in slowly (3 to 5 seconds) and deeply at the same time. Synchronize inhaler actuation and inhalation for optimum drug delivery to the lungs.

5. Remove inhaler from the mouth, hold breath for 10 seconds or as long as possible, and breathe out slowly.
6. Repeat puff as directed. Wait one minute between puffs for better lung penetration.
7. Replace the cap.

Cleaning instructions:
1. Remove the metal aerosol canister containing the drug from the inhaler.
2. Wash the plastic case and cap regularly in warm running water.
3. Allow plastic parts to dry completely.
4. Replace the aerosol container and mouthpiece cap.

CONTRAINDICATIONS
- Hypersensitivity to salbutamol or other ingredients in the product
- Certain maternal or fetal conditions may contraindicate tocolytic therapy (e.g., eclampsia or severe preeclampsia, intrauterine infection, intrauterine fetal death, antepartum hemorrhage, placenta previa, cord compression, or toxemia of pregnancy); salbutamol should not be used for threatened abortion

WARNINGS AND PRECAUTIONS
Seek medical advice if either the usual relief is diminished or the usual duration of action is reduced. Do not increase the dose or frequency of administration.
Paradoxical bronchospasm: Paradoxical bronchospasm, a potentially life-threatening event, has been observed with salbutamol. If it occurs, discontinue use of the product immediately.
Deterioration of asthma: Asthma may deteriorate acutely over a period of hours or chronically over several days or longer. Increased use of beta$_2$-agonists, especially daily use, is a sign of deterioration of asthma control and indicates the need to reassess treatment. Possible need for anti-inflammatory treatment (e.g., corticosteroids) should be considered.
Hypokalemia: Therapy with salbutamol and other beta$_2$-agonists may produce decrease in plasma potassium concentration possibly through intracellular shunting resulting in cardiovascular undesirable effects. Use with caution in acute severe asthma where concomitant therapy with steroid, xanthine derivatives, or diuretics, and by hypoxia may result in hypokalemia; potassium concentrations should be monitored in severe asthma.
Metabolic Effects: As with other beta$_2$-agonists, salbutamol can induce reversible metabolic changes (e.g., increased blood sugar levels). The diabetic patient may be unable to compensate for this; and thus, result in the development of ketoacidosis. Concomitant administration of corticosteroids can exaggerate this effect.
Coexisting Conditions: Use with caution in patients with the following conditions:
- Cardiovascular disorders including coronary insufficiency, cardiac arrhythmias, or hypertension: Salbutamol, like all other beta$_2$-agonists, can produce clinically significant cardiovascular effects such as changes in pulse rate or blood pressure.
- Convulsive disorders
- Hyperthyroidism
- Diabetes mellitus
- In patients who are unusually responsive to sympathomimetic amines

INTERACTIONS WITH OTHER MEDICAMENTS
Sympathomimetic agents: Salbutamol should not be administered concomitantly with other sympathomimetic agents or epinephrine since serious adverse cardiovascular effects may occur.
Beta-adrenergic blocking agents (e.g., propranolol): Beta-adrenergic blocking agents may inhibit the effect of beta-agonists such as salbutamol. It may also produce severe bronchospasm in asthmatic patients.
Diuretics: Administration of nonpotassium-sparing diuretics (e.g., loop or thiazide diuretics) may result in electrocardiographic changes/and or hypokalemia and can be acutely worsened by administration of beta$_2$-agonists such as salbutamol, especially when the recommended dose of the beta$_2$-agonist is exceeded.
Digoxin: Following administration of single-dose intravenous or oral salbutamol to healthy individuals who had received digoxin for 10 days, a 16% to 22% decrease in serum digoxin concentration was observed. Although the clinical importance of these findings for patients who are receiving inhaled salbutamol and digoxin on a chronic basis is unclear, patients receiving such concomitant therapy should have their serum digoxin concentration carefully evaluated.
Monoamine oxidase inhibitors (MAOIs) or Tricyclic antidepressants (TCAs): Salbutamol should be used with caution in patients receiving MAOIs or TCAs, or within 2 weeks of discontinuation of such agents, because the effect of salbutamol on the vascular system may be potentiated. Alternative therapy should be considered in patients taking MAOIs or TCAs.

STATEMENT ON USAGE FOR HIGH RISK GROUPS
Pregnancy: Pregnancy Category C. There have been reports of congenital anomalies (e.g., cleft palate and limb defects) in children of patients treated with salbutamol. Some of the mothers, however, were receiving various medications in the course of their pregnancies. Since there is no consistent pattern of congenital abnormality development, a relationship between the use of salbutamol and the development of congenital anomalies cannot be established. Therefore, salbutamol should be used in pregnancy only if the potential benefit justifies the potential risk to the fetus.
Labor and Delivery: Since beta$_2$-agonists may interfere with uterine contraction, salbutamol should be used in labor only if the potential benefit justifies the potential risk.
Lactation: Salbutamol may be secreted in breast milk. Therefore, do not administer to breastfeeding women unless, in the opinion of a physician, the potential benefit of the drug justifies the potential risk.
Children: The safety and efficacy of orally inhaled salbutamol aerosol with hydrofluoroalkane (HFA) propellant have not been established in children younger than 4 years old.
Elderly: Data on the use of salbutamol inhalation aerosol in patients 65 years and older are limited and are insufficient to determine whether the efficacy and safety are similar to those of younger patients. Because of the greater frequency of decreased hepatic, renal, and/or cardiac function and of concomitant disease and drug therapy in elderly patients, salbutamol should be used with caution, starting at the lower end of the usual dosing range.

UNDESIRABLE EFFECTS
Infections and infestations: Urinary tract infection
Immune system disorders: Hypersensitivity (anaphylaxis, angioedema, bronchospasm, collapse, hypotension, rash, urticaria)
Metabolism and nutrition disorders: Diabetes mellitus, edema, hypokalemia, metabolic acidosis
Psychiatric disorders: Aggressive behavior, anxiety, depression, dysphonia/voice alteration, hyperactivity, insomnia, nervousness, nightmare, somnolence
Nervous system disorders: Agitation, altered taste, central nervous stimulation, dizziness, headache, hyperkinesia, inhalation site/taste sensation, lightheadedness, tremor, vertigo
Ear and labyrinth disorders: Ear disorder, ear pain, tinnitus
Cardiac disorders: Angina, cardiac arrythmias (including atrial fibrillation, supraventricular tachycardia, and extrasystoles), dyspnea, myocardial ischemia, palpitations, tachycardia
Vascular disorders: Epistaxis, hypertension, peripheral vasodilatation
Respiratory, thoracic and mediastinal disorders: Asthma exacerbation, cough, flu syndrome, paradoxical bronchospasm, pharyngitis, rhinitis, upper respiratory tract infection
Gastrointestinal disorders: Constipation, diarrhea, dry mouth, eructation, flatulence, gagging, gastroenteritis, glossitis, heartburn, mouth and throat irritation, nausea, tongue ulceration, vomiting
Musculoskeletal and connective tissue disorders: Back pain, muscle cramps
General disorders and administration site conditions: Ataxia, increased sweating
Injury, poisoning and procedural complications: Accidental injury

OVERDOSE AND TREATMENT
Overdosage with salbutamol produces symptoms that may be expected with beta$_2$-agonists such as tachycardia, central nervous system stimulation, tremor, hypokalemia, and hypoglycemia.

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

Lactic acidosis has been reported in association with high therapeutic doses as well as overdoses of short-acting beta-agonist therapy.

Cardiac arrest and even death may occur following excessive use of salbutamol.

Discontinue salbutamol and institute appropriate symptomatic therapy in cases of salbutamol overdosage. Administration of a beta-adrenergic blocking agent may be appropriate, but use with caution in patients with a history of bronchospasm. There is no adequate evidence to support the use of dialysis in the treatment of salbutamol overdose.

STORAGE CONDITIONS
- Keep the product out of sight and reach of children
- Store at temperatures not exceeding 30°C
- Protect from direct sunlight or heat
- Do not freeze or refrigerate
- The efficacy of this medicine may decrease when the metal aerosol canister is cold
- Do not break, puncture or burn the canister even when apparently empty

AVAILABILITY
Metered-dose inhaler of 200 doses

CAUTION
Foods, Drugs, Devices, and Cosmetics Act prohibits dispensing without prescription.

ADVERSE DRUG REACTION REPORTING STATEMENT
For suspected adverse drug reaction, seek medical attention immediately and report to the FDA at www.fda.gov.ph AND Unilab at (+632) 858-1000 or productsafety@unilab.com.ph. By reporting undesirable effects, you can help provide more information on the safety of this medicine.

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Reg. IPOPHIL
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