

# Salbutamol

## Part I

A 2-year-old boy accidentally ingested salbutamol sulfate inhalant (Ventolin inhalant; 0.5%, 30 mL/bottle) prescribed for the patient's elder brother. Mother happened to witness the accident and immediately brought the patient to a nearby physician. The ingested volume of the inhalant was estimated to be 15 mL.

1. To which drugs class belongs salbutamol sulfate - what is its mechanism of action, in which indication is it used?
2. How are the selective  $\beta_2$  adrenergic agonists classified? Give representatives.
3. Which other groups of drugs are used as bronchodilators? What are their mechanisms of action?

## Part II

Overdose of salbutamol sulfate and other  $\beta_2$  selective bronchodilators involves unwanted sympathomimetic effects, including cardiac  $\beta_1$  receptors activation, peripheral vasodilatation, muscle cramps, hyperglycemia, and hypokalemia.

Sinus tachycardia develops due in part to a decrease in peripheral resistance associated with a reflex increase in cardiac output.

4. How would you solve the situation? Suggest a suitable pharmacotherapy.
5. Suggest how would you educate parents - including recommended preventive measures or warning, how to behave in case of repetition of the situation.