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Salbutamol Medical Uses and Adverse Effects

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Perspective

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ABOUT THE STUDY

Salbutamol, sometimes referred to as Albuterol, is a drug that widens the medium and large airways in the lungs. It is marketed under the brand name Ventolin among other names. It is a short-acting agonist of the β2 adrenergic receptor that relieves airway smooth muscle tension. Exercise-induced bronchoconstriction, asthma episodes, and chronic obstructive pulmonary disease are all treated with it. Additionally, elevated blood potassium levels may be treated with it. Salbutamol can also be found as a tablet, liquid, and intravenous solution in addition to the inhaler or nebulizer with which it is typically used. The inhaled version usually takes effect within 15 minutes and lasts for two to six hours. Shaking, headaches, rapid heartbeat, disorientation, and anxiety are typical adverse effects. Worsening bronchospasm, an irregular heartbeat, and low blood potassium levels are examples of serious adverse effects. Although it is safe to use during pregnancy and breast-feeding, there are certain safety concerns.

Salbutamol was granted a patent in the UK in 1966 and was on sale there in 1969. In the United States, it was authorised for medical use in 1982. Generic salbutamol is a drug that is offered for sale. With over 60 million prescriptions written, it was the sixth most frequently prescribed drug in the US in 2019. Salbutamol is frequently used to treat chronic obstructive lung disease and bronchospasm. It is also one of the drugs that rescue inhalers utilize the most frequently. Salbutamol is also used in obstetrics because it is a β2 agonist. To prevent premature

labour from starting, intravenous salbutamol can be given as a tocolytic to relax the uterine smooth muscle. Although preferred over medications like atosiban and ritodrine, its function has mostly been superseded by that of the highly efficient and well-tolerated calcium channel blocker nifedipine. Acute hyperkalemia has been treated with salbutamol because it promotes potassium passage into cells, which lowers blood potassium levels. Fine tremor, anxiety, headache, muscle cramps, dry mouth, and palpitation are the most frequent adverse effects. Other signs and symptoms may include tachycardia, arrhythmia, skin flushing, myocardial ischemia. Allergic responses such as paradoxical bronchospasms, urticaria, angioedema, and hypotension are uncommon but significant. Hypokalemia may result from high doses or continuous use, which is dangerous, especially for kidney failure patients and people using certain diuretics and xanthine derivatives. Due to the propellants used in the inhalers, salbutamol metered dose inhalers have been referred to as the single highest source of carbon emissions from NHS drug prescribing. Inhalers with dry powder are suggested as a low-carbon substitute. The signalling cascade that culminates in the inhibition of myosin phosphorylation and a decrease in the intracellular concentration of calcium ions is initiated by the activation of these receptors, which induces adenylyl cyclase to convert ATP to cAMP. Additionally, the rise in cAMP prevents airway inflammatory cells including mast cells, eosinophils, and basophils from secreting inflammatory mediators' cytokines, too. In addition to hyperpolarizing and relaxing bronchial smooth muscles, salbutamol and other 2 receptor agonists also increase the conductance of channels sensitive to calcium and potassium ions. Salbutamol is either eliminated in the urine directly by the kidneys or is first converted into the metabolite of sulfate.