SHORT ACTING BETA 2 AGONISTS (SABA)

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Short-acting Beta 2-agonists medications

Albuterol (Albuterol nebulizer solution, Accuneb®, Proventil® HFA, Ventolin® HFA, ProAir®HFA, NEW: ProAir RespiClick- DPI)
Ventolin was the first SABA on the market in the early 1980’s.
Levalbuterol (Xoponex® HFA, Xoponex® nebulizer solution)
**Pirbuterol (Maxair®) not on market now- per FDA Maxair Autohalers are phased out because they contain chlorofluorocarbons or CFCs
Terbutaline-inhaled Brand forms such as Brethine -*No longer available in the U.S.- still available in tablet/injection
Albuterol and ipratropium bromide combination (DuoNeb® solution)
What is a SABA?
Short Acting BETA2 AGONIST

**Classification of drug:** Beta2 Agonist: Short Acting bronchodilators

**Physiological Action:** Bronchodilator

**Cellular Action:** Chemical compounds that act at the cellular level in organs - acts on adrenergic receptors in the body found in many organ tissues, specifically the beta-2 adrenergic receptors. beta-2 adrenergic receptors are located in lungs, blood vessels of skeletal muscle, uterus, bladder and GI walls

**AKA** Quick Reliever or Rescue Medication

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Albuterol VS Levalbuterol

When the chemical compounds of these drugs are discussed, it is the S & R isomers, or molecular & chemical structure of the compound that differentiate the cellular activity of the drug and different biological effects.

- **R albuterol** - the primary isomer responsible for the bronchodilator effects of racemic albuterol.
- **S albuterol** - which has little or no Broncho-dilating activity
- **Albuterol** = compound of both (50:50) R & S albuterol
- **Levalbuterol** = R albuterol only
- **Albuterol:** the most commonly prescribed
- **Levalbuterol:** Development of levalbuterol was based on the proposed advantages over albuterol

EPR3 REFER TO QUICK RELIEF MEDICATIONS, OR SABA’S. LISTING BOTH ALBUTEROL/LEVALBUTEROL

- managing exacerbations flow chart #22
Albuterol VS Levalbuterol

Both Albuterol/Levalbuterol are sited in the NAEPP, 2007 for use to treat asthma exacerbation- clinician choice for preparation.
Infants and Children: Limited data in ages <2 years: (NAEPP, 2007): Oral inhalation has guidelines for Infants & young children:

SABA's: OVERVIEW OF PREPARATIONS

Albuterol Preparations

Albuterol MDI – No Generic available now (Generic was with CFC propellant & now BRAND Albuterol preps are with HFA)
: ProAir HFA (counter), Ventolin HFA (Counter), Proventil HFA (no counter), NEW: DPI-PROAIR RESPICLICK (Counter),
Albuterol Sulfate solution:
Albuterol Sulfate Inhalation Solution based on strength & a combination prep w/ ipatropim
Duration: Nebulization/oral inhalation: 3 to 4 hours
Protein binding: 10%
Metabolism: Hepatic to an inactive sulfate
Half-life elimination: Inhalation: 3.8 hours; Oral: 3.7 to 5 hours
Excretion: Urine (30% as unchanged drug); feces (<20%)
**Levalbuterol Preparations**

Levalbuterol MDI –
HFA preparations brand only -Xopenex HFA (no counter)
Levalbuterol  HCl solution:
Levalbuterol/ Xopenex  nebulized form is available in both generic & brand preparations & varied strengths

Aerosol: 3 to 4 hours (up to 6 hours in some patients)
Nebulization: 5 to 6 hours (up to 8 hours in some patients)
Absorption: A portion of inhaled dose is absorbed to systemic circulation
Half-life elimination: 3.3 to 4 hours
Time to peak, serum:
Aerosol: Children: 0.8 hours, Adults: 0.5 hours
Nebulization: Children: 0.3 to 0.6 hours, Adults: 0.2 hours

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**SABA’s: OVREVIEW OF PREPARATIONS cont.**

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**Discuss:** inhalation technique, dose counters, priming & cleaning

**Storage:** out of reach of children

**Nebulizer solutions:** in the protective foil pouch at room temperature, Protect from light

**MDI Preparations:** Do not puncture the aerosol container and do not discard it in an incinerator or fire
Store canister between 20° and 25°C (68° and 77°F). Protect from freezing & high heat temperatures and direct sunlight.
DPI: Store PROAIR RESPICLICK at room temperature between 59°F and 77°F (15°C and 25°C).

• Avoid exposure to extreme heat, cold, or humidity.

© www.drugs.com. Storage: Sol protect from light, MDI no extreme temps: warnings explode if it gets too hot, freeze if too cold
SABA MEDICATION INFORMATION FOR THE CLINICIAN OR EDUCATOR

Use reputable Sites, Resources For references on approved SABA's

Examples are as:

Publications of drug reference materials:
Package inserts: FDA prescribing information at each manufacturers site
Lexicomp
Harriet Lane
PDR
EPR3: http://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines

Health Organizations that compile drug reference information
FDA: www.FDA.gov
AAFA: www.aafa.org
ATS: www.ats.org
AAAAI: www.aaaai.org
OR the AAAAI Allergy & Asthma Medication Guide

SABA- AKA Quick Reliever or Rescue Medication

- Short-acting beta 2-agonists are called "reliever" or "rescue" medicines.
- are recommended for treating early mild, sudden and severe asthma symptoms.
- work within 5-20 minutes and last four to six hours.
- use 15 to 20 minutes before exercise to prevent exercise-induced asthma symptoms.
- Forms of drug: inhalation, most commonly prescribed., Pills, tablets and intravenous forms of the drugs are used but can have more side-effects.
- Monitoring use gives information about asthma symptom control
  EX: Medication/symptom logs, ACT & Rules of two
Bronchoconstriction or Bronchospasm:

The condition when bronchi are narrowed due to the airway smooth muscles contraction in response to airway changes thus causing airflow to be decreased or stopped.

Hyper-reactivity of the bronchioles small airways:
Is a state characterized by easily triggered bronchospasm
Bronchodilator: reverses the airway narrowing by relaxing airway smooth muscles

**REMEMBER**: USE PLAIN LANGUAGE WHEN EDUCATING YOUR PATIENTS ABOUT THESE TERMS

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**Drug Action: Bronchodilator**

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**SABA’s are**
Quick Relief/Rescue Medicine
This type of medication is a bronchodilator.
The action:
» relaxing the airway smooth muscle.
» open airway & airflow to improve

In plain language:
This medicine stops the squeezing of the air tubes this opens the air tubes & lets air flow better, makes breathing easier
Use handouts, video, web-link, charts, & pictures to
Ensure your tool is Up To Date:

EXAMPLE:
At a Glance poster
by Allergy & Asthma Network
Mothers of Asthmatics (AANMA)

What to teach about SABA’s  AKA Rescue Medications

Name of medications, how do they identify their rescue medicines
How it works- why it is used for asthma
When to use it, monitor response
How it is used
Side effects
Keep track of use, and amount of doses, expiration dates
How to Store Properly

http://my.clevelandclinic.org/disorders/asthma/hic_treating_asthma_with_bronchodilators.aspx

*OVER USE OF THIS MEDICATION IS A RED FLAG*

Educate to monitor SABA use
Clinicians to monitor the prescription refills of SABA’s.

*OBTAINE TEACH BACK*

Ask Me 3

- Is a patient education program
- Designed to improve communication between patients and health care providers Encourage patients to become active members of their health care team
- Promote improved health outcomes.
- The program encourages patients to ask their health care providers three questions:

  1. What is my main problem?
  2. What do I need to do?
  3. Why is it important for me to do this?

- Studies show that people who understand health instructions make fewer mistakes when they take their medicine and they may also get well sooner or be able to better manage a chronic health condition.

Source: http://www.npsf.org/for-healthcare-professionals/programs/ask-me-3/
“WHEN YOU CAN'T BREATHE, NOTHING ELSE MATTERS”

Federal trademark registration By: American Lung Association