

Asthma: The “Short and Long” of Bronchodilators

Asthma bronchodilators (known as beta agonists) are widely used for the treatment of asthma. Available as inhaled aerosols, powders or pills, beta-agonists open breathing passages, prevent obstruction and are used to treat acute, sometimes life-threatening attacks of asthma. Ironically, with the very effective short and long-acting bronchodilators available today to treat asthma, serious respiratory problems and even deaths have been reported worldwide. Should we be concerned about this trend, and how should bronchodilators be used to treat asthma?

To understand beta agonists, you have to understand adrenaline (released in our bodies when we're nervous or under stress), otherwise known as epinephrine. Epinephrine is naturally occurring beta agonist in our bodies which when released, acts on the heart to raise blood pressure and heart rate, and on the lung to open airways. Because epinephrine has side effects and doesn't last long, companies have modified epinephrine into potent, highly selective beta agonists that act mainly on the lungs. The most commonly used short-acting (4-6 hour) beta agonist is Albuterol, available as Proventil, Ventolin or Maxair. They act the same and have similar side effects. Long-acting (8-12 hour) inhaled beta agonists include Foradil. Foradil begins working in 15-30 minutes and can be used for immediate relief.

Some studies have shown that daily use of short acting beta agonists, even at conventional doses, have been reported to become less effective and not last as long, an effect called tolerance. The overuse of inhaled beta agonists of inhaled beta-agonists (more than 8 puffs a day) may also lead to tolerance, worsening of the condition, and on more occasions, asthma-related deaths. Overuse, therefore, of short-acting beta-agonists indicates that your asthma is poorly controlled. Don't let this happen. Let your doctor or health provider know immediately how much medicine you are taking. Potent anti-inflammatory medications, such as steroids, may be used to immediately control and prevent further worsening of your asthma.

More recent studies have shown that regular use of long-acting beta-agonists such as Foradil do not lead to tolerance. For prevention, or treatment of mild intermittent asthma, these drugs alone may be just fine. Remember though, that for mild persistent, moderate and severe asthma, short or long-acting beta-agonists alone are never sufficient, and should be combined with steroids for optimal control and prevention. Long-acting beta-agonists may improve the ability of steroids to control your asthma, with the reverse also being true. These observations lead to the development of the combination medication called Advair and now a second combination product called Symbicort.

How should you use beta-agonists? As with any hand held inhaler, inhaled beta-agonists should always be held at least 2-4 inches in front of the mouth. Slowly inhale one puff and hold your breath for at least 10 seconds. Repeat once as directed. Spacer tube devices or breath-actuated devices make using the inhaler easier, and are available for patients with coordination problems or young children. Beta-agonists can also be inhaled with nebulizers, just as in emergency rooms, and are very useful at home for acute

attacks. The most widely used beta-agonist for nebulizers is Albuterol. Xopenex is a new form of Albuterol that works well and may have fewer side effects, such as heart racing and tremors. Ask your provider about home nebulizers if your asthma is not well controlled. For children and adults with chronic asthma that is mild persistent, moderate, or severe, inhaled steroids are the first drugs of choice, and are used alone or together with beta-agonist bronchodilators on a daily or as needed basis.