



PIC QUESTION OF THE WEEK: 12/22/08

Q: Please summarize the key factors associated with the substitution of propellants in albuterol inhalers?

A: Several years ago, the United States signed an international environmental treaty entitled the *Montreal Protocol on Substances that Deplete the Ozone Layer*. Chlorofluorocarbon (CFC), the propellant used in original albuterol aerosols, reduces ozone levels that protect the planet from the harmful rays of the sun. After accepting the treaty, the government made it mandatory that pharmaceutical manufacturers replace CFC with the more environmentally-friendly propellant known as hydrofluoroalkane (HFA). Inhalers that utilize CFC will not be available after December 31, 2008. HFA inhalers are comparable in safety and efficacy to the previous devices. Their shape and size are also similar to CFC inhalers. Patients may, however, notice a few differences including taste, feel, and smell. The new HFA inhalers may require more frequent cleaning, but priming of the container may require fewer steps. There are currently three approved HFA albuterol inhalers: ProAir HFA Inhalation Aerosol, Proventil HFA Inhalation Aerosol, and Ventolin HFA Inhalation Aerosol. In addition, levalbuterol (Xopenex HFA Inhalation Aerosol) will also include the new propellant. Before initially using the inhaler (or if it has not been used for ≥ 2 weeks), it must be primed by activating the device three (ProAir HFA) to four times (Proventil HFA, Ventolin HFA). Ventolin HFA is the only new inhaler that incorporates a dose counter. A major concern with the new HFA inhalers is patient cost. Previous co-pays of \$5 or \$10 may now escalate to \$30 to \$60. Each of these products requires a new prescription and there are currently no generic alternatives. Manufacturers such as Teva, Schering-Plough, and GlaxoSmithKline are providing free samples and posting coupons on their websites to compensate for the increase in cost. Patients may also call the American Lung Association Lung Helpline at 1-800-LUNG-USA for information about prescription assistance programs. Healthcare professionals are concerned that some patients may attempt to save money by using over-the-counter (OTC) Primatene Mist as an alternative to albuterol. This product not only contains epinephrine, but continues to include the CFC propellant. The FDA will permit sale of OTC inhalers with CFC until December, 2011. Many experts consider self-treatment with OTC products less effective than albuterol and potentially dangerous. The conversion from CFC to HFA inhalers provides pharmacists a wonderful opportunity to counsel and improve the management of their patients' asthma.

References:

- U.S. Food and Drug Administration. Albuterol inhalers: time to transition. <http://www.fda.gov/consumer/updates/albuterol053008.html>. Accessed 11 December 2008.
- IntelliHealth. Asthma inhalers to go 'green' on December 1. <http://www.intelihealth.com/IH/ihtIH/WSIHW000/333/7228/973276.html>. Accessed 4 December 2008.
- Phase-out of albuterol CFC inhalers. *Pharmacist's Letter* 2008; 24(7):240708

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