

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Respimat® inhaler

Suboptimal inhaler technique is a major barrier to effectiveness of inhalation therapy. Many patients, particularly the elderly and the very young have difficulty correctly using currently available inhaler devices. Consequently, there is ongoing research into the development of inhaler devices that are easy to use and provide improved lung deposition. The Respimat® Soft Mist inhaler is a novel, metered-dose device for delivery of inhaled drugs to patients with asthma and chronic obstructive pulmonary disease.

The Respimat® inhaler uses mechanical power from a spring rather than propellants to release a ‘Soft Mist’ which lasts longer and is slower moving than that emitted from a pressurised metered dose inhaler (MDI). As compared to the MDI, which initially releases particles of a relatively large diameter (15 to 20 µm), the Respimat® inhaler releases a high proportion of particles which are respirable (<5µm).

Potential benefits of this design include:

Greater lung deposition

Several studies confirm that approximately 40% of the dose administered from a single actuation of Respimat® reaches the lungs, compared with <20% for MDIs. A higher proportion of drug reaching the lungs may permit a reduction in the dose needed to be inhaled to produce a required therapeutic effect.

Lower mouth and throat deposition

The combination of small particle size and a slow moving aerosol cloud results in lower drug deposition in the mouth and throat. More selective drug delivery may result in a reduction in local and systemic adverse effects of high dose inhaled corticosteroids.

Simplified coordination

The aerosol cloud produced by the Respimat® has a more prolonged duration (1.2 seconds) than aerosols emitted by MDIs. This offers patients more time between inhaler actuation and inspiration. However, before first use patients must assemble the inhaler by inserting the cartridge into the device, which requires a certain level of dexterity.

The aqueous reservoir of drug in the Respimat® inhaler necessitates the use of a stabilising agent disodium edetate and an antibacterial agent, benzalkonium chloride, both of which have been associated with dose-related bronchospasm in some patients. However, studies have shown the incidence of bronchospasm to be rare after drug administration via the Respimat®, and similar to that observed with MDIs.

The Respimat® inhaler is currently being investigated in Phase 3 clinical trials in Australia.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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