Today’s patients are increasingly better informed and more opinionated about their treatment options and product preferences. With 400 million people worldwide suffering from allergic rhinitis, which includes hay fever and allergies to things such as mould, plants, dust and animal dander, demand for alternatives to aqueous sprays is growing. Here, Louise Righton, MSc, Global Market Development Manager, and Les Harrison, PhD, Preclinical & Clinical Manager, both of 3M Drug Delivery Systems Division, describe how providing patients with new, more preferred inhalation drug delivery devices is one way that pharmaceutical companies can improve compliance and increase success in this changing arena. They also review recent research highlighting patient preferences in device design and user experience for a nasal MDI.

With an estimated 400 million allergic rhinitis sufferers worldwide, the market for topical nasal sprays to treat this condition is significant.1 The market for nasal corticosteroids, the leading therapy type, is worth some US$2.5 billion (£1.6 billion), with the leading brands achieving blockbuster status.2

However, these sales figures do not necessarily indicate satisfied customers. Since CFC propellants were phased out in the 1990s, aqueous pump sprays have been the primary delivery mechanism for nasal corticosteroids (Figure 1), and patients report that using these sprays can be unpleasant, and inconvenient. For example, drug formulation frequently drips down the back of the throat (post-nasal drip), not only causing an uncomfortable sensation, but also a bad aftertaste. Additionally, the

Figure 1: A selection of currently marketed aqueous pump sprays.

(Boots Hayfever Relief Nasal Spray is a trademark of The Boots Company plc; Nasacort® Allergy Nasal Spray is a registered trademark of sanofi aventis; Flixonase Allergy™ Nasal Spray is a registered trademark of GlaxoSmithKline; Nasonex® is a trademark of Merck & Co; Beconase® Hayfever Relief for Adults is a registered trademark of GlaxoSmithKline; Rhinolast® Nasal Spray is a registered trademark of Meda Pharmaceuticals Ltd.)
liquid can run back out of the nose, embarrassing patients and reducing the retained dose. The sales figures for this category, therefore, should be viewed as a testament to the effect of allergic rhinitis on quality-of-life, meaning that sufferers’ desire for treatment is so strong that they will tolerate uncomfortable products in the name of relief.

Insights like this highlight the need for pharmaceutical companies to develop new, better solutions for allergic rhinitis. In a competitive marketplace, major opportunities exist for those who can improve the user experience with an innovative drug delivery device. Indeed, pharmaceutical leaders are increasingly focusing on and considering the user experience, as a patient-driven marketplace demands increased attention to these factors. Over the coming years, companies must develop solutions for drug delivery that are efficient and user friendly in order to build patient preference.

In the allergic rhinitis market, a nasal pressurised Metered Dose Inhaler (pMDI) device (Figure 2) represents one helpful solution to the problems associated with aqueous sprays. This device allows the medication to be administered as a quickly evaporating, no-drip spray. Furthermore, patient-friendly features such as dose counters and ergonomic designs can help further differentiate a product from competitors. In this patient-driven environment, the addition of features like these can help build patient preference and assist in the regulatory process. This article will review research recently conducted that highlights patient preferences in device design and user experience for a nasal MDI.

UNDERSTANDING KEY DIFFERENTIATORS FOR PATIENTS

In an effort to understand the needs of allergic rhinitis sufferers better, 3M Drug Delivery Systems recently conducted a clinical research study comparing a new nasal MDI device with existing aqueous pump spray devices. The patient acceptance research was conducted with adult users of nasal spray devices. Study participants used the new nasal MDI device, and compared it with their experiences of using currently available pump spray devices. Their responses were collected in interviews designed to highlight the holistic patient experience of using nasal devices, and to gauge what considerations are most important to patients when considering their choices in nasal sprays.

To gain these insights, an open-label study in fifty participants was conducted in which responses to written questions were used to evaluate subject preference for a new nasal aerosol device. In parts one and two of the study, researchers first asked subjects for their initial impressions of the new MDI design in a questionnaire format. In the third part of the study, subjects were asked to read application instructions for the inhaler and apply one placebo aerosol spray from a prototype nasal aerosol device to one nostril, and a second placebo aerosol spray from the same device to the other nostril. Participants then completed a questionnaire comparing the prototype device with conventional nasal pump sprays. With this data, researchers gathered a picture of subjects’ overall perceptions of the nasal MDI device; their experiences in administering the aerosol up the nose; the device’s ergonomics, size, feel and fit; and their overall evaluation of the device.

INSIGHTS LIKE THIS HIGHLIGHT THE NEED FOR PHARMACEUTICAL COMPANIES TO DEVELOP NEW, BETTER SOLUTIONS FOR ALLERGIC RHINITIS. IN A COMPETITIVE MARKETPLACE, MAJOR OPPORTUNITIES EXIST FOR THOSE WHO CAN IMPROVE THE USER EXPERIENCE WITH AN INNOVATIVE DRUG DELIVERY DEVICE

Figure 2: The 3M Nasal MDI from 3M Drug Delivery Systems.

Figure 3: Ranking of importance of characteristics when using a nasal spray.

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they remain key considerations given that allergic rhinitis devices are often used outside of the home—or would be if patients felt comfortable doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. Any device intended to treat a condition triggered by pollen or pollution should be doing so. 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GETTING STARTED

Identifying what makes a device stand out for patients is not always a simple task. In efforts to develop new solutions, pharmaceutical companies should seek out technology development and manufacturing partners who are committed to understanding patients’ needs and incorporating their voices into developing future technologies. With the development of any new drug product, especially a new delivery system, pharmaceutical companies must also always keep the practicalities of manufacturing in mind. By working with a partner that is committed to ensuring an efficient and cost-effective development and manufacturing process, while at the same time innovating to deliver patient-preferred solutions, companies can maximise the chances of success for their new nasal MDI product.

REFERENCES:


“AMONG THESE SUBJECTS, THE DOSE COUNTER AND METERED-DOSE FEATURES WERE CITED AS TOP REASONS FOR PREFERING THE DEVICE VERSUS THEIR CURRENT NASAL PUMP SPRAY”
3M's innovative dose counter and nasal inhalation systems provide a differentiating delivery method, giving our partners a competitive edge.

Through the development of intuitive patient-friendly innovations, 3M’s MDI devices and components enable your treatments to stay on the cutting edge while making life better for patients. We offer:

- Leading edge devices ideal for aerosol delivery through the lungs or nasal cavity, for Asthma, COPD and Allergic Rhinitis.
- Technologies that meet growing market demand for patient-friendly devices such as nasal MDIs and dose counters.
- Products designed and developed with patients in mind, ensuring product differentiation, and resulting in a competitive advantage for our partners.

With a 50 year history of innovation and success in inhalation technology, 3M’s MDI experts can help you gain a competitive advantage.

Make life better for patients today at www.3M.com/pMDI