Desloratadine for the Relief of Nasal and Non-nasal Allergy Symptoms: An Observational Study

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ABSTRACT

Introduction. The rates of allergic rhinitis, allergic asthma, and atopic eczema range from 6% to 16% globally. Second-generation antihistamines have been shown to be safe and effective for the treatment of symptoms of allergic disease. This study investigated the efficacy and safety of desloratadine, a nonsedating second-generation antihistamine, in the treatment of common allergy symptoms.

Methods. In this open-label, uncontrolled, non-randomized, observational study, subjects (N = 973) with allergy symptoms were given desloratadine 5 mg daily for 3 weeks. Nasal, ocular, and dermal symptom severity was rated as asymptomatic, mild, moderate, or severe; changes in the percentage of subjects in each severity category were assessed. Overall efficacy and tolerability of desloratadine treatment were evaluated separately by physicians and subjects.

Results. Allergic rhinitis was the most frequent diagnosis, occurring in 59.0% of subjects. Approximately 40% of subjects had received previous treatment with other antihistamines, systemic/topical glucocorticosteroids, or beta-sympathicomimetics. Slightly more than half of subjects received concomitant medication during the study; 263 (53.0%) of those used intranasal steroids. A significant reduction in severity scores was observed in all symptom subgroups (P < 0.001). Desloratadine efficacy was judged to be excellent or good by 90.2% of physicians and 88.6% of subjects; 82.5% of investigators and 80.9% of subjects considered it more effective than previous therapy. The tolerability of desloratadine was rated excellent or good by 97.0% of both groups. Thirty-one subjects (3.2%) experienced adverse events.

Conclusions. In an open-label, uncontrolled, non-randomized, observational study allergy symptoms improved significantly in subjects treated with desloratadine.

Key Words. Allergy; Allergic Rhinitis; Chronic Urticaria; Desloratadine

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response consists of a complex network of cellular events in which histamine plays a crucial role. Many of the inflammatory and immunomodulatory effects of histamine are mediated through the H1-receptor \[8,9\]. Therefore, H1-receptor antagonists are often recommended first-line treatments for conditions involving activation of allergic inflammation \[10–13\].

Second-generation oral antihistamines, such as desloratadine, fexofenadine, and levocetirizine, rapidly reduce allergic rhinitis–related nasal symptoms (rhinorrhea, sneezing/itching) and ocular symptoms (tearing, itching, redness) as well as dermatologic symptoms of chronic urticaria (wheals, itching) with little or no somnolence \[12\]. These agents may also inhibit the actions of other mast cell and basophil mediators that cause nasal obstruction and inflammation of nasal mucosa \[14\].

Desloratadine is a potent, nonsedating H1-receptor antagonist with antiallergic and antiinflammatory properties. In vitro studies have shown that desloratadine inhibits chemical mediators involved in both the early- and late-phase allergic responses \[12\]. Desloratadine has also been found to improve nasal airflow in patients with allergic rhinitis \[15\]. The proven ability of desloratadine to prevent the release of cytokines, chemokines, and cellular adhesion molecules associated with the late-phase response may contribute to its decongestant properties \[12,16–19\].

The objectives of this observational study were to evaluate the efficacy of desloratadine in improving nasal, ocular, and dermal allergy symptoms; to assess the drug’s adverse event profile; and to determine investigator and subject satisfaction with desloratadine treatment in a real-life environment.

Methods

This multicenter, observational study was conducted by 85 dermatology specialists and in three hospital allergy units in Austria in subjects aged 12 years or older who were currently experiencing allergy symptoms related to allergic rhinitis (with or without comorbidities such as conjunctivitis, bronchial hyperreactivity, or asthma); sinusitis, laryngitis, or polyps; chronic idiopathic urticaria; skin or food allergies; or bronchial hyperreactivity or asthma. Written informed consent was obtained from all subjects. According to Austrian law on medicinal products, no official institutional review by the Medical University of Graz was required because, in this study, desloratadine was prescribed according to the indications (allergic rhinitis and chronic idiopathic urticaria) in the label approved at the time. Neither the investigators nor the subjects were paid for their participation in this study. The study drug was supplied free of charge.

Study candidates were excluded if they were pregnant or breastfeeding or were receiving current or continuing treatment with other systemic antihistamines.

The participants received desloratadine 5 mg once daily for 3 weeks. Subjects could also be prescribed concomitant medications, e.g., corticosteroids for nasal congestion, if an investigator felt it was warranted.

Allergy symptoms were assessed at the beginning and end of treatment with desloratadine. Subjects completed daily diaries, categorizing their symptoms into 3 subgroups: nasal (congestion, rhinorrhea, sneezing/itching), ocular (tearing, burning/itching, redness), and dermal (itching, wheals, dryness) and scoring them according to 4 levels of severity: 0 = asymptomatic, 1 = mild, 2 = moderate, or 3 = severe. Subjects were instructed on diary use, and the importance of completing them was stressed. Change between baseline and study endpoint in percentage of subjects in each category of symptom severity were analyzed using the McNemar test and Wilcoxon signed-rank test. Percentages were derived without accounting for missing values. In addition, the overall efficacy of desloratadine therapy was assessed separately by investigators and subjects at study end using 4 descriptors—excellent, good, moderate, or inadequate. Further, investigators who had previously administered allergy treatment to the study subjects, and the subjects who had received such treatment, judged whether desloratadine “was better than prior therapy.”

Tolerability of desloratadine therapy was assessed separately by investigators and subjects at study end using the same 4 descriptors as used for efficacy analysis. Subjects were asked to report all potential adverse effects, including dry mouth, somnolence, headache, or gastrointestinal upset. In addition, subjects described the onset of any new illnesses or exacerbations of existing illnesses after beginning desloratadine treatment.

Results

Subjects

A total of 1,015 subjects were enrolled. Data were available for 973 subjects who received
desloratadine, some of whom were taking the drug to treat more than one type of allergy. Forty-two subjects did not complete the study; their data were not included in the analysis. No subject discontinued due to lack of response.

The mean age of the study population was 37.5 years, and 58% were women. Allergic rhinitis was identified as the sole type of allergy in 59.2% (N = 574) of subjects and in conjunction with bronchial asthma in another 10.3% (N = 100). Nearly 40% of subjects had received previous allergy treatment with sedating and other non-sedating antihistamines, glucocorticosteroids, or beta-sympathicomimetics (Table 1) for a mean duration of 27.2 days (range 2 to 202 days). A total of 496 subjects (51.0%) received concomitant medications during the study; 263 (53.0%) of those used intranasal steroids. The proportion of comedicated subjects receiving any other class of medication, including topical antihistamines, was <10%.

Efficacy
The data showed that nasal, ocular, and dermal symptoms all improved significantly following desloratadine treatment (P < 0.001).

Nasal Symptoms
The percentage of subjects with no or only mild nasal symptoms increased from 42.9% at baseline to 95.2% after desloratadine treatment for sneezing/itching; from 40.5% to 94.4% for rhinorrhea; and from 33.7% to 90.7% for nasal congestion (Figure 1). The proportion with moderate or severe nasal symptoms decreased from 57.2% at baseline to 4.8% at endpoint in subjects with sneezing/itching; from 59.5% to 5.6% in those with rhinorrhea; and from 66.2% to 9.2% in those with nasal congestion.

Ocular Symptoms
From baseline to endpoint, the proportion of subjects with no or only mild ocular symptoms increased from 70.4% to 97.7% for redness; from 65.0% to 96.2% for tearing; and from 59.0% to 95.9% for burning/itching (Figure 2). The proportion of subjects with moderate-to-severe symptoms decreased from 29.6% to 2.3% for redness, from 35.0% to 3.8% for tearing, and from 41.0% to 4.2% for burning/itching.

Dermal Symptoms
The proportion of subjects with no or mild dermal symptoms increased from 72.8% at baseline to 94.0% after desloratadine therapy for wheals; from 83.6% to 91.6% for dryness, and from 62.2% to 90.5% for itching (Figure 3). The percentages of subjects experiencing moderate and severe dermal symptoms decreased from 27.2% to 6.0% for wheals, from 16.5% to 8.4% for dryness, and from 37.9% to 9.5% for itching.

Investigator/Subject Evaluations
Desloratadine efficacy was determined to be excellent or good by 90.2% of physicians and 88.5% of subjects at the end of therapy (Figure 4). Moreover, approximately 97% of participants in both groups rated the tolerability of desloratadine with these top 2 descriptors. Investigators (82.5%) and subjects (80.9%) described treatment with desloratadine as being better than previous allergy therapy. Of all subjects remaining on any medication at endpoint, 88.0% elected to continue treatment with desloratadine.

Safety
Adverse events were reported by 3.2% of subjects (N = 31). Fatigue was the most common adverse event (0.8%), followed by dry mouth, gastritis, and headache (0.3% each). No subject discontinued due to adverse effects.

Discussion
The findings of improved allergy symptoms confirm the results of previous studies indicating that desloratadine is an effective and well-tolerated treatment for the common signs and symptoms

| Table 1  | Concomitant medications |
|----------|-------------------------|
| Medication (multiple responses possible) | Subjects, N (% of total population) |
| Antiallergic agent (topical) | 27 (2.8) |
| Antibiotics | 3 (0.3) |
| Antidepressant | 4 (0.4) |
| Antihistamine (topical) | 38 (3.9) |
| Beta-sympathicomimetic | 39 (4.0) |
| Glucocorticoid | |
| Dermal cream/lotion | 18 (1.9) |
| Bronchial | 27 (2.8) |
| Combined | 10 (1.0) |
| Intranasal spray | 263 (27.0) |
| Systemic | 9 (0.9) |
| Hyposensitization | 11 (1.1) |
| Leukotriene inhibitor | 9 (0.9) |
| Local vasoconstrictor | 8 (0.8) |
| Other | 80 (8.2) |
of seasonal, perennial, and intermittent allergic rhinitis, including nasal congestion [20–25], and chronic urticaria [26–28]. Desloratadine treatment significantly reduced total nasal and non-nasal symptom scores from baseline and decreased pruritus scores and number and size of wheals associated with moderate-to-severe chronic idiopathic urticaria.

Figure 1 Baseline-to-endpoint changes in severity of nasal symptoms of sneezing/itching (A), rhinorrhea (B), and congestion (C) after 3 weeks of desloratadine treatment. Severity was rated as asymptomatic, mild, moderate, or severe.

Figure 2 Baseline-to-endpoint changes in severity of ocular redness (A), tearing (B), and burning/itching (C) after 3 weeks of desloratadine treatment. Severity was rated as asymptomatic, mild, moderate, or severe.

Figure 3 Baseline-to-endpoint changes in severity of wheals (A), dryness (B), and itching (C) after 3 weeks of desloratadine treatment. Severity was rated as asymptomatic, mild, moderate, or severe.
Limitations
In this study, we used a single agent in an open-label, non-placebo-controlled design. In addition, 51.0% of subjects were receiving concomitant medications, including 263 (27.0%) subjects who were using intranasal steroids. However, this design in a patient population normally seen in clinical practice more closely approximates a physician’s everyday experience. Moreover, we cannot infer that the improvements observed would have lasted beyond 3 weeks of the study. It is also possible that, over the course of the study to endpoint, subjects’ symptoms may have abated independent of desloratadine treatment.

Conclusion
In this open-label, uncontrolled, observational study, treatment with desloratadine resulted in a significant reduction in severity scores in all allergy symptom subgroups. Both investigators and subjects rated desloratadine efficacy as excellent or good.

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Conflict of Interest: Professor Aberer has lectured at meetings sponsored by ALK-Abelló, Inc., Almirall, Astellas Pharma, AstraZeneca, Bencard Allergie GmbH, Intendis, Inc., Jerini A.G., Pelpharma Handels GmbH, Phadia A.B., Schering-Plough Corp., Stallergenes, and UCB S.A.

References
1 Holgate ST. The epidemic of allergy and asthma. Nature 1999;402:B2–4.
2 Compalati E, Penagos M, Henley M, Canonica GW. Allergy prevalence survey by the World Allergy Organization. Allergy Clin Immunol Int J World Allergy Org 2007;19:82–90.
3 Engin B, Uguz F, Yılmaz E, Özdemir M, Mevlitoglu I. The levels of depression, anxiety and quality of life in patients with chronic idiopathic urticaria. J Eur Acad Dermatol Venereol 2008;22:36–40.
4 Özkan M, Oflaz SB, Kocaman N, et al. Psychiatric morbidity and quality of life in patients with chronic idiopathic urticaria. Ann Allergy Asthma Immunol 2007;99:29–33.
5 Staubach P, Eckhardt-Henn A, Dechene M, et al. Quality of life in patients with chronic urticaria is differentially impaired and determined by psychiatric comorbidity. Br J Dermatol 2006;154:294–8.
6 Schoenwetter WF, Dupclay L Jr, Appajosyula S, Botteman MF, Pashos CL. Economic impact and quality-of-life burden of allergic rhinitis. Curr Med Res Opin 2004;20:305–17.
7 O’Donnell BF, Lawlor F, Simpson J, Morgan M, Greaves MW. The impact of chronic urticaria on the quality of life. Br J Dermatol 1997;136:197–201.
8 Akdis CA, Blaser K. Histamine in the immune regulation of allergic inflammation. J Allergy Clin Immunol 2003;112:15–22.
9 Schneider E, Rolli-Derkinden M, Arock M, Dy M. Trends in histamine research: New functions during immune responses and hematopoiesis. Trends Immunol 2002;23:255–63.
10 Bousquet J, Khaltaev N, Cruz AA, et al. Allergic Rhinitis and its Impact on Asthma (ARIA) 2008 update (in collaboration with the World Health Organization, GA\-LEN and AllerGen). Allergy 2008;63(suppl 86):8–160.

11 Zuberbier T, Bindslev-Jensen C, Canonica W, et al. EAACI/GA\-LEN/EDF guideline: Definition, classification and diagnosis of urticaria. Allergy 2006;61:316–20.

12 Berger WE. The safety and efficacy of desloratadine for the management of allergic disease. Drug Saf 2003;28:1101–18.

13 Kaufman DW, Kelly JP, Rosenberg L, Anderson TE, Mitchell AA. Recent patterns of medication use in the ambulatory adult population of the United States: The Slone Survey. JAMA 2002;287:337–44.

14 Dykewicz MS, Fineman S, Skoner DP, et al. Diagnosis and management of rhinitis: Complete guidelines of the joint task force on practice parameters in allergy, asthma and immunology. Ann Allergy Asthma Immunol 1998;81:478–518.

15 Canonica GW, Tarantini F, Compalati E, Penagos M. Efficacy of desloratadine in the treatment of allergic rhinitis: A meta-analysis of randomized, double-blind, controlled trials. Allergy 2007;62:359–66.

16 Berger WE, Schenkel EJ, Mansfield LE; Desloratadine Study Group. Safety and efficacy of desloratadine 5 mg in asthma patients with seasonal allergic rhinitis and nasal congestion. Ann Allergy Asthma Immunol 2002;89:485–91.

17 Scadding GK. Desloratadine in the treatment of nasal congestion in seasonal allergic rhinitis: Preclinical and clinical evidence. Clin Drug Invest 2002;22(suppl 2):21–32.

18 Bachert C. Decongestant efficacy of desloratadine in patients with seasonal allergic rhinitis. Allergy 2001;56:14–20.

19 Nayak AS, Schenkel E. Desloratadine reduces nasal congestion in patients with intermittent allergic rhinitis. Allergy 2001;56:1077–80.

20 Bachert C, Keith P, Mullol J for the ACCEPFIG Investigators. Desloratadine significantly reduces nasal congestion and other individual symptoms scores in subjects with intermittent allergic rhinitis: Results of the ACCEPFIG study in collaboration with GA\-LEN. 2. Allergy 2008;63(suppl 88):634. Abstract 1760.

21 Zuberbier T, Sussman G, van Cauwenberge P, Bousquet J for the ACCEPFIG Investigators. Desloratadine significantly reduces total symptoms scores in subjects with intermittent allergic rhinitis: Results of the ACCEPFIG study in collaboration with GA\-LEN. Allergy 2008;63(suppl 88):628. Abstract 1744.

22 Pradalier A, Neukirch C, Dreyfus I, Devillier P. Desloratadine improves quality of life and symptom severity in patients with allergic rhinitis. Allergy 2007;62:1314–4.

23 Kim K, Sussman G, Hébert J, Lumry W, Lutsky B, Gates D. Desloratadine therapy for symptoms associated with perennial allergic rhinitis. Ann Allergy Asthma Immunol 2006;96:460–5.

24 Meltzer EO, Jalarowski AA, Vogt K, Iezzoni D, Harris AG. Effect of desloratadine therapy on symptom scores and measures of nasal patency in seasonal allergic rhinitis: Results of a single-center, placebo-controlled trial. Ann Allergy Asthma Immunol 2006;96:363–8.

25 Simons FE, Prenner BM, Finn A, Jr for the Desloratadine Study Group. Efficacy and safety of desloratadine in the treatment of perennial allergic rhinitis. J Allergy Clin Immunol 2003;111:617–22.

26 Ortonne JP, Grob JJ, Auquier P, Dreyfus I. Efficacy and safety of desloratadine in adults with chronic idiopathic urticaria: A randomized, double-blind, placebo-controlled, multicenter trial. Am J Clin Dermatol 2007;8:37–42.

27 Monroe E, Finn A, Patel P, et al. Efficacy and safety of desloratadine 5 mg once daily in the treatment of chronic idiopathic urticaria: A double-blind, randomized, placebo-controlled trial. J Am Acad Dermatol 2003;48:535–41.

28 Ring J, Hein R, Gauger A, Bronsky E, Miller B. Once-daily desloratadine improves the signs and symptoms of chronic idiopathic urticaria: A randomized, double-blind, placebo-controlled study. Int J Dermatol 2001;40:72–6.