

A comparison of the clinical efficacy and safety of intranasal fluticasone propionate and antihistamines in the treatment of rhinitis

Adequate management of allergic rhinitis is needed to avoid its considerable adverse social, clinical, and economic impact. Both topical intranasal steroids and oral or topical antihistamines are recognised as effective treatments for this condition. In comparative studies, however, intranasal steroids and, in particular, fluticasone propionate aqueous nasal spray (FPANS), have afforded consistently better symptomatic relief, and have a greater beneficial effect on quality of life. Furthermore, the addition of an antihistamine to FPANS therapy has generally produced little further benefit. Intranasal administration is associated with a low systemic absorption of fluticasone propionate and, following regular use of FPANS, placebo, or an oral antihistamine, no significant differences were seen between treatment groups in plasma or urinary cortisol. Overall, therefore, the data indicate that FPANS is superior to second-generation antihistamines in the management of allergic rhinitis.

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Introduction

Allergic rhinitis is the most common form of rhinitis, affecting 20–40 million people in the USA annually, including 10–30% of adults and up to 40% of children. However, the disease is seldom viewed as a serious problem since it is not life-threatening and hospital admission is rarely required (1).

Nevertheless, allergic rhinitis has considerable social, clinical, and economic impact. Approximately half of all affected individuals experience symptoms for more than 4 months a year, and quality of life is impaired (2). Allergic rhinitis accounts for approximately 10 million physician consultations in the USA each year. In 1996, the health-care cost for allergic rhinitis (plus conjunctivitis) as a primary diagnosis was \$1.9 billion, and as a diagnosis secondary to other conditions, \$4.0 billion. Medication accounted for a quarter of these costs. Rhinitis also affects productivity, causing an estimated 28 million days of restricted activity and 2 million missed days of school: on a typical school day, 10 000 children are absent because of the disease in the USA (3).

Adequate management is therefore important. Effective therapy will also help in controlling the symptoms of comorbid conditions such as asthma, polyposis, and sinusitis (1).

Rhinitis management

Topical intranasal corticosteroids and oral or topical antihistamines are recognised as effective treatments for

seasonal allergic rhinitis (1, 4). In addition, topical intranasal corticosteroids are widely recognised as the first-line treatment for allergic rhinitis (4).

Comparative efficacy of intranasal corticosteroids and antihistamines

Symptom relief

Several studies have demonstrated that fluticasone propionate aqueous nasal spray (FPANS) has a high index of topical activity, producing excellent relief of nasal symptoms in patients with seasonal allergic rhinitis, even when administered just once daily. In comparative studies of FPANS and either cetirizine (5) or loratadine (6) (Fig. 1), FPANS afforded better control of all symptoms. In another, double-blind, placebo-controlled study comparing FPANS with terfenadine (7), most symptoms improved more significantly with FPANS; only itching was similarly controlled by both active treatments. In a double-blind, placebo-controlled comparison of FPANS and nasal levocabastine given for 6 weeks, patients treated with FPANS experienced a higher percentage of days free from nasal obstruction and rhinorrhoea, although relief of sneezing and itching was not significantly different between the two active treatment groups (Fig. 2) (8).

In a study in which patients received treatment with FPANS, loratadine, FPANS plus loratadine, or placebo, patient-rated total nasal symptom scores were significantly lower for the two FPANS-treated groups than for those receiving loratadine alone or

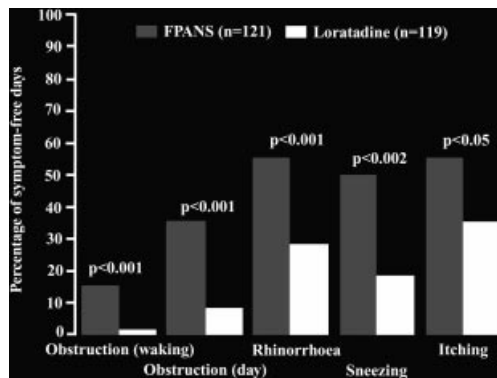


Figure 1. Effect of intranasal fluticasone propionate once daily (200 µg) and loratadine (10 mg) on nasal symptoms in adolescent patients with seasonal allergic rhinitis (Jordana et al. [6]).

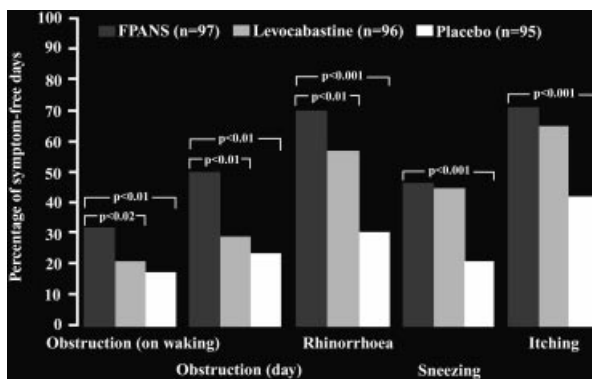


Figure 2. Median number of symptom-free days during treatment with fluticasone propionate (200 µg, OD), levocabastine (200 µg, b.i.d.), and placebo in patients with seasonal allergic rhinitis (Ortolani et al. [8]).

placebo. The combined treatment was only slightly superior to FPANS alone (9).

Overall, in comparative studies using symptoms as a measure of efficacy, FPANS has been shown to be superior to most second generation antihistamines including terfenadine, cetirizine, and loratadine (5–7, 9–14).

Acoustic rhinomanometry

As would be expected from the reduction in nasal obstruction reported above, acoustic rhinomanometry confirmed an improved nasal flow maintained over approximately 1 month in patients treated with FPANS, when compared with those treated with placebo or terfenadine (12). Similar results were reported in a study comparing FPANS with loratadine, using nasal peak inspiratory flow as a measure of nasal obstruction (6).

Quality of life

In a placebo-controlled comparative study of FPANS vs loratadine vs FPANS plus loratadine, FPANS with or

without loratadine produced a consistently superior improvement in all measures of quality of life compared with loratadine alone or placebo (Table 1) (15).

Table 1. Mean changes from baseline in disease-specific quality of life for seasonal allergic rhinitis patients after 2-week treatment with intranasal fluticasone propionate (FPANS) (200 µg, OD); loratadine (10 mg, OD), alone or in combination; and placebo. Quality of life was assessed by standardized Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) (Goodwin et al. [15])

	FPANS (n=141)	FPANS plus Loratadine (n=142)	Loratadine (n=142)	Placebo
Activities	−2.3 (0.1)*	−2.5 (0.1)*	−1.5 (0.1)	−1.5 (0.1)
Sleep	−2.1 (0.1)*	−2.2 (0.1)*	−1.2 (0.1)	−1.2 (0.1)
Emotional issues	−1.9 (0.1)*	−2.1 (0.1)*	−1.1 (0.1)	−1.3 (0.1)
Practical problems	−2.5 (0.1)*	−2.7 (0.1)*	−1.3 (0.1)	−1.3 (0.1)
Nasal symptoms	−2.5 (0.1)*	−2.7 (0.1)*	−1.4 (0.1)	−1.4 (0.1)
Eye symptoms	−1.9 (0.1)*	−2.0 (0.1)*	−1.3 (0.1)	−1.2 (0.1)
Other symptoms	−1.9 (0.1)*	−1.9 (0.1)*	−1.1 (0.1)	−1.3 (0.1)
Global score	−2.2 (0.1)*	−2.3 (0.1)*	−1.3 (0.1)	−1.3 (0.1)

Nasal inflammation

In a double-blind, placebo-controlled, comparative study, a significantly higher proportion of patients treated with FPANS for 2 weeks than with terfenadine or placebo showed a decrease in the number of eosinophils and basophils within the nasal mucosal specimens obtained by Rhinoprobe (16).

In the study, described previously, comparing FPANS and levocabastine, there was a significant reduction in the number of eosinophils recovered in nasal lavage during and at the end of the pollen season in patients with rhinitis treated with FPANS for 6 weeks compared with those receiving levocabastine or placebo (Fig. 3) (8).

Comparative safety of intranasal corticosteroids and antihistamines

Pharmacokinetic studies suggest a very low systemic absorption of fluticasone propionate after intranasal

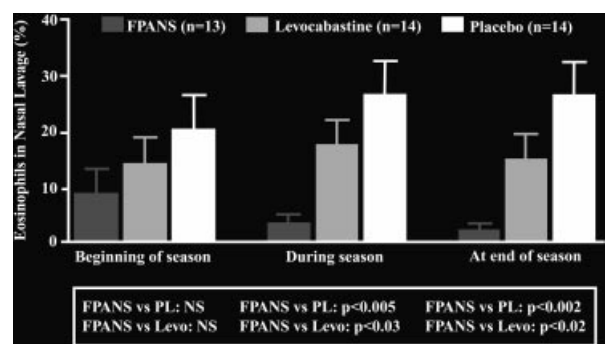


Figure 3. Mean eosinophil counts (±SEM), expressed as percentage, obtained in nasal lavage in patients treated with fluticasone propionate (200 µg, OD), levocabastine (200 µg, b.i.d.), and placebo in patients with seasonal allergic rhinitis (Ortolani et al. [8]).

administration. Thus, systemic side effects at the recommended daily dosage are minimised (17). For example, it has been shown that FPANS administered for 4 weeks has no significant effect on mean plasma or 24-h urinary cortisol values when compared with either placebo or terfenadine (12, 16–18). Although relatively few data on the safety of intranasal corticosteroids are available, those available demonstrate a low risk-to-benefit ratio for either systemic or local side-effects (19).

Conclusions

The above data clearly demonstrate that, compared with second-generation oral and topical antihistamines, FPANS is at least as effective in alleviating rhinorrhoea, sneezing, and itching; is significantly more effective in controlling nasal obstruction; and has a much more favourable impact on quality of life. Furthermore, FPANS in combination with oral antihistamines provides little additional relief from nasal symptoms in comparison with that achieved with FPANS alone. FPANS is therefore superior to second-generation antihistamines in the management of allergic rhinitis.

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