ABSTRACT

Background: The current standard of care for poorly controlled seasonal allergic rhinitis (AR) is subcutaneous immunotherapy (SCIT) with allergen extracts, administered in a physician’s office. As an alternative to SCIT administration, sublingual immunotherapy (SLIT) is now an option for patients. Grastek™ and Oralair™ are two SLIT agents currently available in many countries. However, direct head to head comparative data between the three options are not available. In this study, an indirect comparison on efficacy, safety and cost was undertaken between Oralair™, Grastek™ and SCIT.

Methods: A systematic review of major databases was conducted from January 1980 to December 2012 for double blind placebo controlled randomized trials comparing Grastek™, Oralair™ or SCIT in patients with grass-induced seasonal AR. Using placebo as the common control, an indirect statistical comparison between treatments was performed using meta-regression analysis with active drug as the primary independent variable. Other variables considered in the regression model included year of study publication, geographic region where the trial was conducted, trial duration, duration of immunotherapy, number of asthmatic patients enrolled in the trial, number of allergens and patient type (adults vs. children). A Canadian cost comparison, which included costs for drug therapy, pharmacy services, physician visits and indirect costs (i.e. patient travel and lost productivity) was also undertaken.

Results: Overall, 20 placebo controlled trials met the inclusion criteria for indirect analysis. The indirect analysis suggested a possibility for improved efficacy with Oralair™ over SCIT (standardized mean difference [SMD] in AR symptom control = −0.21; p = 0.007) and Grastek™ (SMD = −0.18; p = 0.018). In addition, the meta-regression analysis did not identify significant differences in the risk of discontinuation due adverse events between the three treatments. Oralair™ was also associated with cost savings against both SCIT (50% PC, seasonal SCIT $848 and Grastek® $1,168) during the first year of therapy. Conclusion: Through an indirect comparison of placebo controlled trials, the evaluation suggests that Oralair™ has at least non-inferior efficacy and comparable safety against SCIT and Grastek™ at a lower annual cost.

OBJECTIVES

• To perform a systematic review of placebo controlled randomized trials evaluating Oralair™, Grastek™ and subcutaneous immunotherapy (SCIT) in patients with grass-induced seasonal allergic rhinitis (AR).
• To indirectly compare the safety and efficacy of Oralair™ to Grastek™ and SCIT for the management of grass-induced seasonal AR.
• To compare the direct and indirect costs of Oralair™ to Grastek™ and SCIT over a three-year time horizon.
• To evaluate the indirect comparison of placebo controlled randomized trials evaluating Oralair™, Grastek™ and SCIT in patients with grass-induced seasonal allergic rhinitis (AR).

RESULTS

• A total of 20 placebo-controlled trials met the inclusion criteria and were included in the analysis. In the following distribution: Oralair™ = five trials; Grastek™ = eight trials; SCIT = seven trials.
• All of the trials were double blinded and placebo controlled, with sample sizes per study arm ranging from 28 to 514.

Table 1. Indirect statistical comparisons using the method of Bucher et al. (1997)

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<tr>
<th>Treatment</th>
<th>Drug D/C (expressed as a RR)</th>
<th>95% CI</th>
<th>p-value</th>
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Figure 1. Random effects meta analysis on reductions in AR symptom score for all immunotherapies combined.

Figure 2. Fixed effects meta analysis on the risk of treatment discontinuations with immunotherapy treatments relative to placebo.

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CONCLUSIONS

• Through an indirect comparison of placebo controlled, the evaluation suggests that Oralair™ has non-inferior efficacy and safety against SCIT and Grastek™ at a substantially lower annual cost.

References: Available upon request to the primary author.