Letters to the Editor: Assessing the cost-effectiveness of allergen immunotherapy in allergic rhinitis

To the Editor

The authors of the article, "Decision-Making Analysis for Allergen Immunotherapy versus Nasal Steroids in the Treatment of Nasal Steroid-Responsive Allergic Rhinitis," must be commended, because they introduce an original approach to assess the cost-effectiveness of subcutaneous immunotherapy (SCIT).¹ It is a pity that they did not take into account also sublingual immunotherapy (SLIT), which is going to be available in the United States after the demonstration of efficacy of the recent pharmaceutical-quality preparations in tablets.² Indeed, the authors cite the article by Podladnikova *et al.*, who showed that SLIT had an economic advantage over SCIT,³ but they do not discuss this. Moreover, the finding is based on the prices of immunotherapy products in the Czech Republic, while in other countries the prices may be largely variable and often they are much higher. Globally, pharmacoeconomic studies from Europe have shown that immunotherapy (in both SCIT and SLIT forms) may be very beneficial to the health care systems.⁴ In particular, a budget impact analysis showed that SLIT with grass tablets is a cost-saving alternative to SCIT in patients with grass pollen-induced allergic rhinoconjunctivitis.⁵ Applying the model proposed by Kennedy *et al.* would have been (and surely will be in future studies) very interesting to further evaluate this issue.

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To the Editor,

We appreciate the comments made by Incorvaia *et al.* concerning our recent publication, "Decision-Making Analysis for Allergen Immunotherapy versus Nasal Steroids in the Treatment of Nasal Steroid-Responsive Allergic Rhinitis." As suggested by their letter, the imminent arrival of Food and Drug Administration–approved sublingual immunotherapy (SLIT) raises the question of whether this form of immunotherapy will be equally cost-effective in the United States. Furthermore, would our hypothetical model allow for simulation of costs in a similar manner?

There have been multiple studies in Europe regarding the cost-effectiveness of SLIT in both children and adults. These studies have consistently provided evidence that SLIT appears to be not only an effective treatment for seasonal and perennial allergies, but also cost-effective.^{1–3}

Several issues, however, prevent us from integrating the use of SLIT into a hypothetical model based on U.S. health care trends. The Markov model used in our study requires a specific level of data to make assumptions about the costs of the health state of individuals. Unfortunately, at present, information regarding the cost of SLIT tablets is not available in the United States, and, as such, these data could not be folded into our analysis. Furthermore, while monosensitized patients benefit from SLIT,^{4–9} it remains to be seen whether polysensitized individuals will be able to receive multiple allergens at the same time and receive similar benefit. To our knowledge, only three studies have evaluated polysensitization to date. The first showed clinical benefit in quality of life after 1 year of SLIT to multiple allergens. However, the number of subjects in this study using three allergen extracts was only 13 subjects.¹⁰ Another study evaluated the effectiveness of SLIT in subjects sensitized to both grass and birch. Importantly, treatment with all sensitized allergens provided the best clinical results for subjects.¹¹ Finally, a study by Amar *et al.*, compared SLIT with a timothy grass antigen alone against timothy antigen at the same concentration mixed with nine other allergens. Although the timothy SLIT alone improved multiple outcomes, the combined allergen SLIT group only showed improvement in skin sensitivity to timothy, suggesting a reduction in SLIT efficacy in those who are polysensitized and simultaneously treated with more than one allergen.¹² Obviously, the cost incurred by multiple allergens would be greater than monoallergen tablets/vials of SLIT. Until more information becomes available regarding the efficacy of multiple allergen sensitization and SLIT, our model remains less effective.

As more studies are performed, we are poised to replicate our model for SLIT. Theoretically, if costs were known in the United States and multiple allergen efficacy better understood, all other variables would be accounted and cost-effectiveness could be ascertained between the use of SLIT and intranasal steroids using this system. We expect that with the approval of SLIT by the U.S. Food and Drug Administration many of these obstacles will fall and cost-effectiveness can be studied further.

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