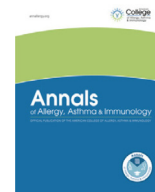




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Editorials

Allergen immunotherapy



Many allergy specialists would suggest that we have come a long way over the past 107 years since the initial publications from the Laboratory of the Department for Therapeutic Inoculations of Saint Mary's Hospital^{1,2} described the efficacy of subcutaneous allergen immunotherapy (AIT) in pollen allergy. Currently, there is a robust literature showing that AIT has efficacy in the treatment of asthma, prevents the development of further sensitization in mono-sensitized patients, decreases the progression to asthma in those undergoing subcutaneous AIT for allergic rhinitis, and provides persistent therapeutic effect even years after a 3- to 5-year course.^{3,4} Since the initial reports by Noon¹ and Freeman,² AIT has been shown to be therapeutic in the treatment of atopic dermatitis, hymenoptera allergy, and even food allergy. We also have seen the development of new forms of AIT beyond the initially described subcutaneous route, which include oral AIT for food allergy, epicutaneous AIT for food and environmental allergy, sublingual AIT for food allergy and environmental allergy, and intralymphatic AIT for certain environmental allergens.⁵ Since 1911, the field has become more sophisticated in multiple areas, such as improvements in identifying and quantifying allergen components and standardization for several allergens, research exploring the use of allergoids, and the development of recombinant allergens as a potential means to improve the therapeutic index (decreased allergenicity with retained immunogenicity) of AIT.

This month's *Annals* theme is immunotherapy and several of this issue's articles highlight our advancement in the field. Dr Adkiss⁶ provides a state-of-the-art review exploring potential mechanism(s) of AIT. It is quite surprising that even 100 years after the first reports of AIT efficacy, we still do not fully understand how it actually works. Gaining further insight into the mechanism should allow optimization of this intervention. Dr Durham⁷ builds on this, discussing potential future direction and innovation(s) in IT, and Dr Nelson⁸ provides an excellent perspective on the limits and potential pitfalls in the current AIT armamentarium. He suggests that one potential impediment to growth in the field is the extreme cost of clinical studies to demonstrate specific efficacies and opines that use of more sensitive manipulated in vivo tools, such as environmental exposure chambers or nasal allergen challenges, can lower the expense involved in the study of AIT and provide at least some of the answers we seek.

Putting all this information together, we should expect a very fast-paced and exciting journey regarding the future development of AIT. In the meantime, we need to optimize the use of our currently

available forms of AIT. One can only imagine what AIT might look like 100 years from now. Likely, safer recombinant allergens (or possibly allergen components) will be used, possibly in tandem with biologic agents. Optimally, less frequent dosing and possibly even safe home dosing will be available. One thing is for sure—no other therapy in the allergy arena thus far has been shown to modify disease. AIT has demonstrated its ability to prevent the development of further allergic sensitization or allergic illness progression and certainly no other therapy has provided long-term protection even after discontinuation of its use. This issue of the *Annals* addresses this challenge in several fronts. We hope you find it useful in your current and future practice.

John Oppenheimer, MD^{*,†}Gailen D. Marshall, Jr, MD, PhD, DFACAA[‡]^{*} Department of Internal Medicine

New Jersey Medical School

Newark, New Jersey

[†] Pulmonary and Allergy Associates

Morristown, New Jersey

[‡] Editor-in-Chief, *Annals of Allergy, Asthma & Immunology*

University of Mississippi Medical Center

Jackson, Mississippi

nallopp22@gmail.com

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Disclosures: John J. Oppenheimer is a consultant and advisor to AstraZeneca, GlaxoSmithKline, Mylan, Novartis, and Teva; receives royalties from UpToDate; and has received research funding from AstraZeneca, Medimmune, Novartis, and Sanofi. Gailen D. Marshall, Jr, has received grants from AstraZeneca, the National Institutes of Health, PCORI, and Stallergenes.

<https://doi.org/10.1016/j.anai.2018.07.012>

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