Editorial

The asthma–chronic obstructive pulmonary disease overlap syndrome and its challenge for the allergist–immunologist

In the spectrum of chronic airway disorders, nowhere is the relationship between disease and clinical expression better illustrated than with asthma and chronic obstructive pulmonary disease (COPD). It is becoming increasingly apparent that some patients who present with chronic airway disease share characteristics of both asthma and COPD, an entity that has been defined as the asthma–COPD overlap syndrome in which symptoms of increased variability of airflow are seen in association with an incompletely reversible airflow obstruction.[1] Although the commonality of these two entities has in the past been clinically perplexing, its recent recognition is providing new diagnostic and therapeutic opportunities for the allergist–immunologist entrusted to the care of patients who present with these disorders.

As illustrated within the pages of the current issue of the *Proceedings*, the overlap conundrum of asthma and COPD is dissected in two review articles. COPD is a worldwide progressive and debilitating respiratory condition, affecting millions of people resulting in significant burden, both medically and financially. In the first article, May and Li[2] provide a review of the overall burden of disease including prevalence, morbidity, mortality, health-care costs, and economic impact.

In the second article, Braman[3] presents the impact of population age, health-care utilization, disease-related quality of life, mortality, and treatment recommendations in a comprehensive review of the entity that will assist clinicians in distinguishing patients with the overlap syndrome from those with COPD or asthma alone. Because of its significant clinical implications regarding the identification of modifiable risk factors, this article is featured in the "For the Patient" section of this issue. This segment, found in the back of the print version of this issue and also available online, consists of a one-page synopsis of a selected article that is written in a readily comprehensible fashion to help patients better understand the content of the full article and its diagnostic and therapeutic implications. It is printed in a format to allow reproduction on the practitioner's letterhead for distribution to patients.

As addressed in previous issues of the *Proceedings*, atopic dermatitis is a common skin disease characterized by a complex pathogenesis.[4] In this issue Benetti *et al.*[5] provide an overview of the evidence supporting a pathogenic link between deficiency of vitamin D and cutaneous microorganisms in this disorder. Focusing more closely on the pathogenesis of atopic dermatitis in children, the study of associated cytokines profiles is an area of important research. Leonardi *et al.*[6] attempt to elucidate the pathophysiology of atopic eczema/dermatitis syndrome by evaluating linkages of IL-17, IL-23, and IL-10 in relation to different phenotypes of atopic eczema/dermatitis syndrome in children.

A strong association of food allergy with eosinophilic esophagitis (EoE) has been suggested by the common co-occurrence of patient sensitizations to foods and improvements in symptoms and inflammation after dietary elimination.[7] Lin *et al.*[8] review the currently available evidence regarding the classification of EoE as an allergic condition, the involvement of foods in disease pathogenesis, the utility of skin-prick testing and atopy patch testing for food allergies, and the evidence for elimination diets in management of EoE.

Although peanut allergy is among the most commonly occurring food allergies, the epidemiology of this condition among the general pediatric population has not been completely defined. Reporting the results of a cross-sectional survey administered to a representative sample of United States households, including 38,480 parents, Dyer *et al.*[9] provide insight into the prevalence and characterization of peanut allergy, diagnostic trends, and reaction history among affected children.

Because of their widespread usage, nonsteroidal anti-inflammatory drugs are the second most common cause of all adverse drug reactions, with hypersensitivity reported in ~1% of the population. In addition to the occurrence of asthma-exacerbated respiratory disease, nonsteroidal anti-inflammatory drug hypersensitivity can be classified into four additional types, the characteristics of which are reviewed by Saff and Banerji.[10]

Although the efficacy of MP29-02 (an intranasal formulation of azelastine hydrochloride and fluticasone propionate in an advanced delivery system) has been well established in controlled clinical trials,[11] its effectiveness in routine clinical practice (real-world experience) has not been reported. Klimek *et al.*[12] report on the results of a multicenter, prospective, noninterven-

tional study of MP29-02 in a real-life setting, including 1781 allergic rhinitis patients across all age groups.

Of considerable clinical importance for optimal treatment of allergic rhinosinusitis are studies of the effectiveness of deposition of nasally delivered corticosteroids and their capacity to reach the ciliated posterior nasal cavity where turbinate inflammation and other pathology occurs. Using mometasone furoate nasal suspension, Shah *et al.*[13] report on a technique to validate radiolabel deposition as a surrogate for nasal cavity drug deposition and to characterize regional deposition and nasal clearance in humans.

Previous issues of the *Proceedings* have addressed the significant burden of illness due to exercise-induced bronchospasm in school children.[14,15] Cichalewski *et al.*[16] add to the recognition of this burden, reporting the prevalence of exercise-induced symptoms and bronchospasm during physical education in the natural school environment in a study of 557 Polish school children.

Despite the well-established burden of illness associated with hereditary angioedema (HAE)[17,18] and the fact that symptoms often appear early in life and accelerate around puberty, there is a paucity of both data and treatment options for HAE in children in the United States. Bennett and Craig[19] provide insight into the unmet need by summarizing the published data and performing a retrospective chart review on 25 children with HAE.

The appropriate use of exhaled nitric oxide in the management of asthma is an issue of considerable debate.[20,21] In an exclusive online article, Ricciardolo *et al.*[22] attempt to clarify the utility of this test in clinical practice by reviewing literature on exhaled nitric oxide in association with asthma phenotyping and management.

Oxidative stress occurs in many allergic and immunologic disorders as a result of the imbalance between the endogenous production of free reactive oxygen species and/or the reduction of antioxidant defense mechanisms. Although hymenoptera venom allergy is not traditionally considered a chronic inflammatory disease, in an exclusive online article, Patella *et al.*[23] provide novel insights into this disorder by examining biomarkers of oxidative stress and inflammation in patients with allergic reactions to hymenoptera venom before and after ultrarush venom immunotherapy.

Rounding out the issue is the most recent installment of the "Patient-Oriented Problem Solving" (POPS) series, which, as per tradition, is written by an allergy–immunology fellow-in-training from one of the 73 U.S. allergy–immunology training programs. The purpose of the POPS series is to provide an innovative and practical learning experience for the allergist–immunologist using a format of clinical presentation and deductive reasoning. Ricketti *et al.*[24] lead the reader through this process, describing the evaluation of a 15-year old girl presenting with asthma and bronchiectasis. This case report illustrates the complexity of the differential diagnostic process for this presentation and the importance of a detailed history, physical exam, and appropriate laboratory assessment in arriving at a correct diagnosis.

In summary, the collection of articles found within the pages of this issue provides yet another example of the environmental/disease pathogenesis paradigm that results in important allergic, cutaneous, and respiratory disorders afflicting patients whom the allergist–immunologist is called on to serve. In keeping with the overall mission of the *Proceedings*, which is to distribute timely information regarding advancements in the knowledge and practice of allergy, asthma, and immunology to clinicians entrusted with the care of patients, it is our hope that the articles found within this issue achieve this goal and will help foster enhanced patient management through efficient workup and optimal therapy for a great diversity of clinical problems. On behalf of the editorial board, we hope you will enjoy the diversity of literature offered in this issue of the *Proceedings*.

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