Periostin: From Pathogenesis to Clinical Application in Allergic Diseases

Allergology International Vol. 63 No. 2 includes a collection of review articles entitled “Periostin: from pathogenesis to clinical application in allergic diseases”, as well as original articles and letters to the editor. We believe this issue will be of great interest to clinical and basic researchers in this field.

Periostin is a protein that has recently been implicated in the pathogenesis of allergic diseases and may thus be a promising target in the development of diagnostics and therapeutic agents for allergic diseases. Periostin was first identified in a mouse osteoblastic cell line and was named osteoblast-specific factor 2 by Takeshita et al. in 1993.1 In 1999 Kudo et al. renamed it periostin because it is highly expressed in periosseous tissues such as the periosteum and periodontal ligament.2 My colleagues and I were the first to link periostin to allergic diseases, in 2006.3 Thus, Japanese researchers have made substantial contributions to the clarification of periostin biology.

In this issue, four active Japanese research groups describe the roles and involvement of periostin in the pathogenesis of allergic diseases and detail the clinical application of periostin as a target of diagnostics and therapeutic agents for such diseases. My colleagues and I discuss the history of discovery and characteristics of periostin, its functional roles in pathogenesis, and its clinical potential.4 Matsumoto describes the usefulness of periostin in predicting responsiveness to inhaled corticosteroid in asthma patients. Although periostin is known to be a good biomarker for type 2 inflammation, the author highlights the potential of periostin as a biomarker of “remodeling”.5 Kanemitsu contributes a related review article, to commemorate his receipt of the 2012 JSA Best Presentation Award.6 Yamaguchi explains the pathophysiological roles of periostin in skin tissues and diseases, including systemic sclerosis and atopic dermatitis.7 Finally, Ohta et al. discuss various periostin-related otolaryngological diseases, such as allergic rhinitis, chronic rhinosinusitis with nasal polyps, aspirin-induced asthma, organized hematoma, eosinophilic otitis media, and IgG4-related disease.8

Among the eleven original articles and three letters to the editor in this issue, a group of five Japanese dermatology research teams (headed by Matsunaga) report the development and validation of an ELISA system for GP 19 S-specific IgE, to diagnose immediate-type wheat allergy due to hydrolyzed wheat protein (HWP-IWA).9 HWP-IWA is caused by a popular brand of facial soap, Cha no Shizuku, and has become a considerable social problem in Japan. Although the skin prick test is currently the most effective method to diagnose HWP-IWA, the GP 19 S-specific IgE ELISA system showed good specificity for patients with HWP-IWA and satisfactory reproducibility at different institutions. Murakami and colleagues report the prevalence of exercise-induced wheezing (EIW), using data from a very large nationwide study of more than 180,000 children and adolescents aged 3 to 18 years.10 They show that EIW is not rare among children with current asthma and that the risk of EIW increased with the severity of current asthma. Ozawa et al. investigated the relationship between maternal diet during pregnancy and eczema prevalence in infants11 and found that frequent intake of natto, a traditional Japanese food made from fermented soybeans, was associated with decreased prevalence, namely, from 20.2% in infants whose mothers ate natto once per month or less to 6.7% in those whose mothers consumed natto daily! This is good news for those who prefer traditional Japanese cuisine, which was recently designated as intangible cultural heritage by UNESCO.

We offer our sincere appreciation to all the authors for their contributions to this issue of Allergology International.

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