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Title: The inspirational journey of Chinese scholars in the field of allergy

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With the rapid economic development and increased national financial support for scientific research in China, there has been considerable progress in the technological innovation capabilities of the country. According to the China Institute of Science and Technology Information, from 2009 to 2019, Chinese scholars published a total of 2,606,400 papers in peer-reviewed international journals that were cited 28,452,300 times. Among these, 1056 papers by Chinese scholars were defined as “hot papers”, cited in the top 1% of their respective fields, reflecting the latest scientific discoveries and frontiers, and accounting for 32.6% of the total number of hot papers worldwide. These achievements position China second globally, not only in the number of scientific publications and citations, but also in the number of important papers published. In the field of allergy, the genus *Artemisia* was first reported in the early 1950s as the most important source of allergenic pollen in Northern China. Since then, there has been a significant rise in the prevalence and consequent socioeconomic burden of allergic diseases. This has led to a number of studies assessing the epidemiology, pathogenesis, diagnosis, and treatment strategies of allergic diseases, resulting in significant advancements in the field. Over the past 70 years, Chinese scientists have greatly contributed to our current understanding of allergies.

With the second-highest impact factor, 8.71, in the field, *Allergy* has always been a journal coveted by scholars worldwide. With the numerous developments in allergy research in China, the number of articles published by Chinese scholars in *Allergy* has significantly increased over the years. For instance, in 2019, Chinese scholars published a total of 20 papers, accounting for 7.4% of the total number of articles published in *Allergy* (Figure 1), indicating the significance of Chinese scientific studies in the field. In an effort to disseminate current knowledge on the medical frontiers of allergy and immunology, in September 2018, the Beijing TongRen Hospital (Beijing Institute of Otolaryngology) and *Allergy* jointly launched the “*Allergy*-WeChat literature guide” (WeChat ID: Allergy_WeChat) and push service (Figure 2) to provide Chinese scholars early access to the latest published content and links to the articles in *Allergy*. To date, a total of 440 guide messages promoting *Allergy* articles have been posted on Allergy_WeChat.

This “China Issue” of *Allergy* highlights the latest progress and contributions by Chinese scholars in improving our understanding of the COVID-19 epidemiology and pathogenesis, and in

the diagnosis of asthma and allergic diseases during the pandemic. Zheng et al. reported the clinical characteristics of allergic rhinitis (AR) patients in 13 metropolitan cities of China and outlined the regional differences in the pathogenesis of AR in China ¹. Yao et al. demonstrated that the T-B-cell interaction modulated by CD23 expression on the switched memory B cells may be involved in the pathogenesis of AR and as a mechanism that may play a role in allergen immunotherapy ². The authors also showed that the production and release of cold-inducible RNA-binding protein (CIRP) was upregulated in the nasal epithelial cells and macrophages, contributing to edema formation in both eosinophilic and non-eosinophilic chronic rhinosinusitis with nasal polyps (CRSwNP) by inducing matrix metalloproteinases (MMPs) and vascular endothelial growth factor A (VEGF-A) production in these cells ³. Furthermore, Shi et al. elucidated the mechanism by which hypoxia-inhibitory factor-1 α (HIF-1 α) induces the nucleotide-binding oligomerization domain (NOD)-like receptor family, pyrin domain containing 3 (NLRP3) expression in M1 macrophages in non-eosinophilic CRSwNP ⁴. Cao and colleagues developed an innovative technique for the precise quantification of sIgE via immobilization of His-tagged allergens using a novel paper-based device, thus shedding new light on the rapid and precise detection of sIgE in patients suffering from allergic diseases ⁵.

During the COVID-19 outbreak, Chinese scholars have applied their clinical resources and knowledge in the field of allergy to analyze the various factors and as a possible mechanisms that may play a role in the prognosis of COVID-19 patients in China. Xie et al. showed that the peripheral blood eosinopenia count may be a robust indicator useful for diagnosis, evaluation, and monitoring of the prognosis of COVID-19 patients ⁶. A further study by Zhao et al. suggested that eosinopenia was inversely related to various inflammatory markers and may be associated with the severity of COVID-19 ⁷. Moreover, Song et al. showed that the risk of severe COVID-19 varied in patients with asthma and chronic obstructive pulmonary disease (COPD), which was associated with the varying expression of angiotensin-converting enzyme 2 (ACE2). COPD patients had an increased, whereas asthmatics had a decreased, expression of ACE2 protein in the lower airways ⁸. In contrast, another group demonstrated, for the first time, that AR co-morbidity might not have significant modifying effects on the development and expression of COVID-19 in terms of the

unaltered ACE2 expression in AR patients ⁹. Moreover, the association of the delayed virus-specific antibody responses with COVID-19 mortality has also been reported ¹⁰. These studies provide novel insights that may facilitate the efficient intervention and management of COVID-19 patients during the ongoing pandemic.

As elucidated in this issue of *Allergy*, the remarkable efforts and the inspiring achievements of Chinese researchers are changing our understanding of some of the key issues in the field of allergies. The editors of *Allergy* are proud of this fruitful collaboration and state that international cooperation and communications are crucial in overcoming overall global health problems.

Conflict of Interest

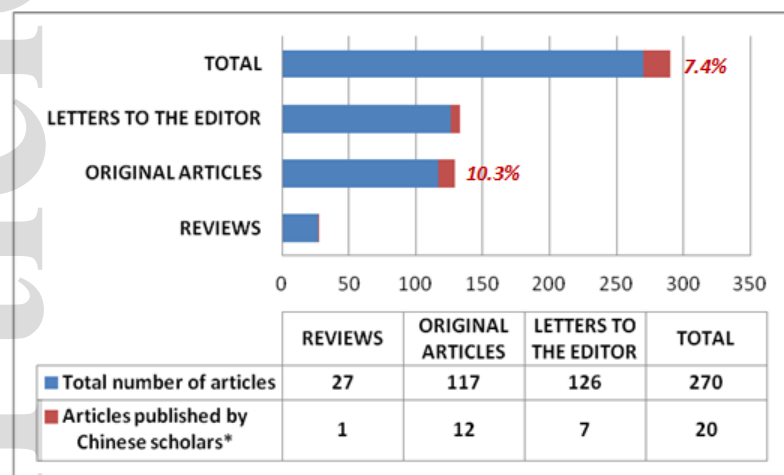
Drs. Akdis and Zhang are editors of *Allergy*.

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Figure legends

Figure 1. Summary of articles published by Chinese scholars in *Allergy* in 2019.



* Chinese scholars with affiliations in China were first authors or corresponding authors.

Figure 2. Home page of *Allergy*'s WeChat official account.

