Asthma Allergy Immunology

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FROM THE EDITOR

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Dear Colleagues,

On behalf of the Editorial Board, we are delighted to announce the publication of the first issue of the Asthma Allergy Immunology Journal in 2026, which includes articles of high scientific level related to clinically important subjects in the allergy, asthma, and immunology areas. In this issue, the readers will find 3 detailed reviews, 9 interesting research articles, 3 case reports, and 1 letter to the editor.

The current issue includes 3 valuable reviews that you can use in your clinical practice on very important topics in the field of allergy and immunology science. Our issue's first review article is about the Immunological Mechanisms of COVID-19 Vaccines and their Implications for Respiratory and Allergic Diseases (1). This review emphasizes the interplay between innate and adaptive responses, the synergistic benefits of hybrid immunity, and the clinical considerations for at-risk populations, thereby supporting the development of inclusive, adaptive, and evidence-based vaccination approaches that address the evolving challenges of SARS-CoV-2 and ensure equitable protection across diverse global settings. In the review, Maulaningtyas H et al. concluded that although COVID-19 vaccine development has achieved unprecedented speed and scale, several critical gaps remain—particularly in addressing the needs of individuals with allergic predispositions and chronic respiratory conditions. As the pandemic continues to evolve, future research must move beyond generalized efficacy metrics and adopt more personalized, adaptive, and interdisciplinary approaches

Asthma exhibits substantial global variability in treatment response, much of which remains unexplained by conventional clinical and biomarker-based assessments. Pharmacogenomics offers a promising approach to understanding this heterogeneity; however, its integration into routine clinical practice has been slow. Our second review synthesizes evidence available up to 2025 on key pharmacogenomic markers influencing responses to inhaled corticosteroids, beta-agonists, leukotriene modifiers, and biologic therapies (2). A structured methodology was employed, incorporating risk-of-bias assessment, quantitative and narrative synthesis, and GRADE evaluation. Among the identified markers, GLCCI1 and CRHR1 demonstrate the most consistent associations with corticosteroid responsiveness, although effect sizes remain modest and lack validation in large randomized trials (2). Variants in ADRB2 and the leukotriene pathway show limited and inconsistent clinical utility, while pharmacogenomic predictors of biologic response remain preliminary (2).

Acute transfusion reactions (ATRs) in children can be life-threatening and clinically indistinguishable, particularly in immunocompromised cohorts. Our third review article summarizes the current literature on the spectrum of pediatric ATRs, focusing on pathophysiological mechanisms, diagnostic hurdles, and management strategies (3). The discussion of this review is framed by two pediatric cases involving four distinct ATRs: first, a child with DOCK8 deficiency undergoing hematopoietic stem cell transplantation who experienced urticaria and subsequent anaphylaxis due to suspected passive allergen transfer; and second, a child with malignancy who developed febrile non-hemolytic and acute hemolytic reactions despite ABO compatibility (3). Ozdamiral C et al. analyzed scenarios alongside critical entities such as transfusion-associated circulatory overload (TACO) and transfusion-related acute lung injury (TRALI) (3). This review underscores recognition of passive allergen transfer and consideration of individualized preventive measures—including donor screening and dietary guidance that are essential to improve transfusion safety, particularly in high-risk or allergic recipients (3).

Our first original article authored by Uflaz H et al., provides descriptive real-world data on adults with hereditary angioedema (HAE) in a setting with limited access to first-line prophylactic therapies (4). This study aimed to describe the demographic and clinical characteristics of adults with HAE while focusing on triggers, diagnostic delay, and treatment approaches (4). This retrospective single center cohort study included 15 patients aged ≥18 years. The diagnostic delay was 8 years (range: 0–49), and patient age was positively correlated with diagnostic delay ($r=0.706$, $p=0.003$) (4). Thirteen patients had HAE-1 and two HAE-2; the attacks most commonly involved the face/extremities (46.7%) and gastrointestinal tract (33.3%). Laryngeal attacks occurred in 60% of patients, with

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13.3% requiring intensive care unit (ICU) follow-up but no intubation. Attacks were most frequently reported by the patients in association with stress or fatigue (86.7%), followed by trauma. Among female patients, 27.3% reported a temporal association between menstrual cycles and attack occurrence. Icatibant was used on demand (median response: 60 min). Patients with prior ICU admission were more likely to receive LTP ($p = 0.029$), likely reflecting greater disease severity and reverse causality rather than a causal effect of LTP on ICU admission. The authors have particularly emphasized that restricted access to first-line LTP remains a relevant clinical challenge in their cohort and indicated that limited access to first-line LTP agents may hinder optimal attack control (4).

Patients receiving repeated chemotherapy cycles may develop hypersensitivity reactions due to sensitization. Rapid drug desensitization (RDD) is a safe and effective approach for managing chemotherapy-induced hypersensitivity reactions. Our second original article is related to rapid drug desensitization protocols allowing safe reintroduction of the culprit chemotherapeutics (5). Hocaoglu MA et al. reported rapid drug desensitizations performed with platinum agents in 18 patients and with taxanes in 11 patients in this study (5). During desensitization protocols, initial hypersensitivity reactions were type I (immediate) hypersensitivity reactions in 14, cytokine release reaction in 1, and mixed-type in 3 platinum cases, and type I (immediate) hypersensitivity reactions in 8, cytokine release reaction in 1, and mixed-type in 2 taxane cases (5). As a result, the authors have reported that taxane-related reactions occur earlier, and positive skin test results or urogenital malignancy may predict breakthrough reactions. As a result, this study emphasized that individualized risk assessment and tailored management strategies must be implemented to optimize the safety of RDD protocols in oncology patients (5).

Our third original article is related to a retrospective analysis of clinical management and diagnostic testing of nitroimidazole hypersensitivity. Nitroimidazoles, most notably metronidazole and ornidazole, continue to play a central role in the management of anaerobic and protozoal infections. However, as highlighted in this study, suspected hypersensitivity reactions to these agents present a nuanced and often overestimated clinical challenge. While nitroimidazole hypersensitivity is clinically important, it is confirmed far less frequently than initially suspected. Gumusburun et al. demonstrated that the majority of patients labeled as allergic were not truly hypersensitive when evaluated through a structured diagnostic approach, underscoring the limitations of conventional diagnostic tools (6). Skin testing alone proved insufficient, whereas drug provocation testing retained its role as the definitive method for diagnosis. Importantly, the integration of these modalities within a systematic algorithm allowed for more accurate differentiation between true hypersensitivity and non-allergic reactions. Such precision is essential not only for individual patient safety but also for preserving access to first-line therapies (6).

Our following original article authored by Guvenir F.A. is related to the diagnostic value of exercise bronchial provocation testing in pediatric asthma (7). Exercise-induced bronchoconstriction (EIB) is characterized by transient airway narrowing that occurs during or after physical activity. This study aimed to investigate the relationship between the frequency of EIB and the diagnosis of asthma in pediatric patients who underwent exercise bronchial provocation testing. Among the 79 patients included in the study, a positive exercise bronchial provocation test was observed in 54 patients (68.4%) (7). Of these, 44 were diagnosed with EIB associated with asthma (EIBa), and 10 were diagnosed with exercise-induced bronchoconstriction without asthma (EIBwa). Despite a negative exercise provocation test, clinical evaluation revealed symptom patterns consistent with asthma in 7 patients, leading to a confirmed diagnosis. The positive predictive value for asthma diagnosis was 81.5%, and the negative predictive value was 72%. The authors concluded that exercise bronchial provocation testing is a useful tool for evaluating exercise-induced respiratory symptoms, and its diagnostic value increases when correlated with clinical findings and allergologic assessment, particularly in the context of suspected asthma (7).

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Drug hypersensitivity reactions (DHRs) refer to unpredictable reactions to medications. The gold standard diagnostic method for drug allergies is drug provocation testing. The study authored by Alpagat G et al. aimed to retrospectively evaluate the clinical characteristics, culprit drug classes, diagnostic approaches, and management strategies of DHRs (8). The study included 260 patients with 511 suspected drug reactions. Oral administration accounted for 82.7% of the responses, with nonsteroidal anti-inflammatory drugs being the most common culprit drug group (45.8%). In immediate reactions, skin symptoms were predominantly urticaria (91.2%) and angioedema (63.8%). Although anaphylaxis was frequently observed, epinephrine administration was disproportionately low. Despite high suspicion rates, confirmation via diagnostic tests was low, emphasizing the need for referral to specialized clinics and appropriate diagnostics for accurate management. Therefore, all diagnostic drug-testing procedures must be performed under strict medical supervision in appropriately equipped clinical settings to ensure patient safety. Without such structured evaluation, patients may inadvertently be re-exposed to the unsafe or structurally similar drugs, placing them at risk for more severe hypersensitivity reactions, including anaphylaxis.

In this issue, our readers can also find an original article aimed to determine the prevalence of asthma and allergic diseases in the province of Giresun and to evaluate their associations with demographic, geographic, and environmental factors using a two-stage population-based epidemiological design (9). Asthma and allergy definitions were based on standardized European Community Respiratory Health Survey (ECRHS) criteria. Logistic regression analyses were performed to identify independent predictors of current asthma and allergic disease. The prevalence of current asthma was 14.5%. Narrow-definition allergy was present in 57.3% of participants, and broad-definition allergy in 72.5%. Early childhood respiratory infections, shared-room exposure before the age of 5 and occupational respiratory symptoms were significantly associated with current asthma in univariate analyses. In multivariable models, pollen-triggered respiratory symptoms remained the only independent predictor of current asthma. For narrow-definition allergy, animal-induced and pollen-induced atopic symptoms were significant predictors. Asthma/allergic diseases are highly prevalent in Giresun and appear to be predominantly associated with environmental allergen exposures rather than traditional demographic risk factors. Simsek SM et al. concluded that the strong influence of pollen- and animal-related atopic symptoms underscores the role of regional ecological characteristics in shaping respiratory health and highlights the need for environmentally targeted public health strategies in similar settings (9).

The following original article in our issue is named "Effects of Atopy and Allergen Types on Disease Course in Patients with Chronic Spontaneous Urticaria" (10). Cıldag S and Sargın G aimed to investigate the frequency of atopy and the effects of atopy and allergen types on the course of the disease in patients with CSU. The study included 261 CSU patients. According to aeroallergen-specific IgE, 89 patients (34.1%) were considered atopic. Female gender, thyroid autoantibody (TPO, Tg) positivity, and ANA positivity were significantly higher in the nonatopic group. Total IgE levels, and high total IgE and C4 level rates were higher in the atopic group. High total IgE and elevated C4 were independent risk factors for atopy. The study concluded that a possible association was present between atopy and chronic spontaneous urticaria, and that atopy may predispose to chronic urticaria. Patients with CSU can be classified as atopic and nonatopic (autoimmune), and this classification could be effective in determining the step treatment modality (10).

Our next original article is related to "Perioperative Hypersensitivity Reactions: Culprit Agents and Management Outcomes" (11). Sagun F et al. designed this research to identify culprit agents in patients evaluated for suspected perioperative hypersensitivity and to assess the safety of subsequent anesthetic procedures guided by allergological evaluation (11). This retrospective observational study included 34 patients referred with suspected perioperative hypersensitivity. Reactions most frequently occurred during the emergence phase (41.2%), followed by the induction phase (38.2%). Patients reacting during the emergence phase were significantly older than those reacting during induction or maintenance. A culprit agent was identified in 13 patients (38.2%), and a total of 15 culprit agents were identified in this group; antiseptics were the most frequent, particularly chlorhexidine. A history of atopy

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was more frequent in the confirmed group. All patients underwent subsequent surgery under an evaluation-guided anesthesia plan, and no immediate hypersensitivity reactions occurred at first re-exposure. Antiseptics, especially chlorhexidine, were the most frequently identified cause of perioperative hypersensitivity in this cohort. The authors concluded that advanced age and delayed reaction onset may help to guide suspicion toward cutaneous sensitizers. A standardized allergological evaluation is essential for ensuring safe future anesthetic exposure (11).

Yıldız E published a very interesting and important research article named "The Relationship Between Chronic Urticaria Development and Sensitization to House Dust Mites After the 2023 Kahramanmaraş Earthquakes in Türkiye" in this issue of our journal (12). Chronic spontaneous urticaria (CSU) is a skin disease often seen after earthquakes. Sensitization to house dust mites is a frequently seen condition in CSU patients in clinical practice. This study aims to determine the frequency of house dust mites sensitization in CSU patients who underwent a skin prick test (SPT) with aeroallergens after the earthquakes that occurred in Türkiye in 2023. The study included 408 CSU patients aged ≥18 years who presented between January 2022 and May 2025, and underwent SPT. The patients were separated into two groups according to the time of CSU onset: patients whose complaints began before the earthquake (n=233, 57%), and patients whose complaints began for the first time after the earthquake (n=175, 43%). HDM sensitization was determined to be higher in the CSU patients diagnosed after the earthquake compared to those diagnosed before (45.7%, 29.1%, $p<0.001$). House dust mites sensitization was determined to be higher in the CSU patients living in temporary housing compared to those living at home. The risk of developing CSU after the earthquake was increased approximately 2-fold by house dust mites sensitization and approximately 6-fold by living in temporary housing (12). This study suggests a significant association between house dust mites sensitization and CSU following an earthquake.

In this issue, we also have three interesting case reports. In our first case report, Hakoglu B et al. report the successful rapid desensitization in a patient with osimertinib-induced immediate-type hypersensitivity reaction (13). They present successful rapid desensitization with osimertinib in a 64-year-old female with lung adenocarcinoma (13).

We also publish another case report related to "Successful Meropenem Desensitization in an Elderly Patient With Meropenem Hypersensitivity" (14). The authors describe an 81-year-old woman with chronic renal failure and malignancies who developed a Klebsiella pneumoniae infection. She had a remote, unconfirmed history of a penicillin-associated adverse reaction and experienced an immediate hypersensitivity reaction to meropenem. Given her age and comorbidities, direct 12-step meropenem desensitization was performed without prior testing. The patient tolerated the full dose without further reaction. This case report illustrates the safety and effectiveness of individualized meropenem desensitization in high-risk elderly patients.

Our third case report is related to oral penicillin desensitization in a pregnant patient with syphilis and a history of ımmediate hypersensitivity to penicillin. This case illustrates that oral penicillin desensitization, when performed with appropriate monitoring, can enable safe administration of first-line therapy in pregnant patients with high-risk penicillin allergy histories (15).

Finally we publish an interesting letter to the editor named "Beyond the Usual Suspects: Single-Center Hypersensitivity Reactions to Purslane, Lettuce, and Thyme" (16).

On behalf of the entire editorial team, as editor-in-chief I hope our dear readers read the articles we have published in our April issue with interest and pleasure, and benefit from them in their clinical and scientific lives.

Sincerely,
Özlem Keskin, MD, PhD, Professor
Editor-in-Chief

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