

Selection from International Journals

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Rhinitis associated with asthma is distinct from rhinitis alone: The ARIA-MeDALL hypothesis

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Bom , P V Tomazic , M Urrutia-Pereira , M Valentin-Rostan , E Van Ganse , M van Hage , T Vasankari , P Vichyanond , G Viegi , D Wallace , D Y Wang , S Williams , M Worm , P Yiallourous , O Yusuf , F Zaitoun , M Zernotti , M Zidarn , J Zuberbier , J A Fonseca , T Zuberbier , J M Anto.

Asthma, rhinitis, and atopic dermatitis (AD) are interrelated clinical phenotypes that partly overlap in the human interactome. The concept of "one-airway-one-disease," coined over 20 years ago, is a simplistic approach of the links between upper- and lower-airway allergic diseases. With new data, it is time to reassess the concept. This article reviews (i) the clinical observations that led to Allergic Rhinitis and its Impact on Asthma (ARIA), (ii) new insights into polysensitization and multimorbidity, (iii) advances in mHealth for novel phenotype definitions, (iv) confirmation in canonical epidemiologic studies, (v) genomic findings, (vi) treatment approaches, and (vii) novel concepts on the onset of rhinitis and multimorbidity. One recent concept, bringing together upper- and lower-airway allergic diseases with skin, gut, and neuropsychiatric multimorbidities, is the "Epithelial Barrier Hypothesis." This review determined that the "one-airway-one-disease" concept does not always hold true and that several phenotypes of disease can be defined. These phenotypes include an extreme "allergic" (asthma) phenotype combining asthma, rhinitis, and conjunctivitis. Rhinitis alone and rhinitis and asthma multimorbidity represent two distinct diseases with the following differences: (i) genomic and transcriptomic background (Toll-Like Receptors and IL-17 for rhinitis alone as a local disease; IL-33 and IL-5 for allergic and non-allergic multimorbidity as a systemic disease), (ii) allergen sensitization patterns (mono- or pauci-sensitization versus polysensitization), (iii) severity of symptoms, and (iv) treatment response. In conclusion, rhinitis alone (local disease) and rhinitis with asthma multimorbidity (systemic disease) should be considered as two distinct diseases, possibly modulated by the microbiome, and may be a model for understanding the epidemics of chronic and autoimmune diseases.

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The Middle East and North Africa Diagnosis and Management Guidelines for Inborn Errors of Immunity

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Human inborn errors of immunity (IEI) are a group of 485 distinct genetic disorders affecting children and adults. Signs and symptoms of IEI are heterogeneous, and accurate diagnosis can be challenging and depends on the available human expertise and laboratory resources. The Middle East and North Africa (MENA) region has an increased prevalence of IEI because of the high rate of consanguinity with a predominance of autosomal recessive disorders. This area also exhibits more severe disease phenotypes compared with other regions, probably due to the delay in diagnosis. The MENA-IEI registry network has designed protocols and guidelines for the diagnosis and treatment of IEI, taking into consideration the variable regional expertise and resources. These guidelines are primarily meant to improve the care of patients within the region, but can also be followed in other regions with similar patient populations.

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Novel method to quantify peptidylarginine deiminase activity shows distinct citrullination patterns in rheumatoid and juvenile idiopathic arthritis

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Introduction: Peptidylarginine deiminases (PADs) mediate citrullination, an irreversible posttranslational modification that converts arginine to citrulline residues in proteins. Rheumatoid arthritis (RA) is characterized by unique autoantibodies that recognize citrullinated peptides, which are highly specific for this disease. However, the mechanism preceding the anti-citrulline response remains largely unclear. PAD enzymes are known to fuel the autoimmune response by generating autoreactive epitopes, and sustain local synovial inflammation through neutrophil extracellular trap formation. Therefore, detecting endogenous PAD activity is important to understand the pathogenesis of arthritis. Methods: In this study, we improved a fluorescent in vitro assay to enable endogenous PAD activity characterization in complex samples. We combine the use of an in-house synthetic, arginine-rich substrate and a negatively charged dye molecule to visualize enzyme activity. Results: This pioneering PAD assay allowed profiling of active citrullination in leukocytes and in local and systemic samples of an arthritis cohort. Our results reveal that RA and juvenile idiopathic arthritis (JIA) synovial fluids display similar levels of PAD activity. In contrast, citrullination was limited in joints of patients suffering from gout or Lyme's disease. Interestingly, in blood, a higher level of extracellular citrullination was only found in anti-CCP-positive RA patients. Discussion: Our finding suggests that enhanced synovial PAD activity drives the loss in tolerance towards citrullinated proteins and that systemic citrullination may indicate the risk for developing citrulline-specific autoimmunity.

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Clinical guidance for the use of dupilumab in eosinophilic esophagitis: A yardstick

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The Joint Task Force for the American Academy of Allergy Asthma Immunology and American College of Allergy Asthma Immunology and the American Gastroenterology Association recently published guidelines for the management of eosinophilic esophagitis (EoE). Because the guideline was published, dupilumab became the first and only medication to gain regulatory approval for the treatment of EoE. This expert opinion document provides a framework for how the clinician can consider using dupilumab in the treatment strategy for patients with EoE.