Allergy in Pediatric Age: An Update

The increase in the prevalence of allergic diseases in children is a well-known phenomenon [1].

For this reason, Current Pediatric Review has allowed the creation of a supplement entitled "Allergy in pediatric age: an update".

Obviously, it was not possible to address the whole Pediatric Allergy. The most interesting aspects have been chosen, examined by experts in the sector.

Authors made a complete and clear development of the topic addressed.

The objective is to provide the reader with a useful tool in daily practice, based on the most recent scientific evidence.

Costagliola and coworkers remark how eosinophilia often poses problems in terms of etiologic research and differential diagnosis. It is classified into mild (500-1500 cells/µl), moderate (1500-5000 cells/µl) and severe for an eosinophil count > 5000 cells /µl. The term “hypereosinophilia” defines a condition characterized by a blood eosinophil count>1500 cells/µl in at least two consecutive tests made with a minimum of a 4-week interval. The various causes of eosinophilia are analyzed. The authors propose a diagnostic algorithm for children presenting with either blood eosinophilia or hypereosinophilia [2].

Musso and coworkers analyze the links between the composition of the microbiome and the presence of atopy’s clinical manifestations. The composition of the microbiome in fetal and neonatal period plays a key role in the development of the immune system: vaginal delivery, breastfeeding, childhood spent in rural environments and/or in contact with animals result in a greater biodiversity of microbiome, with the presence of protective species that reduce activation of Th2 lymphocytes, involved in allergic reactions. Finally, skin, gut or lung dysbiosis can be a cofactor in the pathogenesis of allergies and the remodulation of the microbiome becomes an important therapeutic challenge [3].

Cianferoni highlights the importance of food allergy and particularly of non IgE mediated food allergy. Non-IgE-Mediated gastrointestinal food allergies are a heterogeneous group of food allergies in which there is an immune reaction against food but the primary pathogenesis is not a production of IgE and activation of mastcells and basophils. Non-gE mediated food allergies (e.g.: FPIES, EoE, FPIAP, Non-EoE EGID) are object of intense investigation by Cianferoni [4].

Licari and coworkers analyze eosinophilic gastrointestinal diseases (EGIDs), distal to esophagus, including Eosinophilic Gastritis (EoG), Eosinophilic Gastroenteritis (EoGE) and Eosinophilic Colitis (EoC). These represent a heterogeneous group of disorders characterized by eosinophilic inflammation in the absence of known causes for eosinophilia, selectively affecting different segments of the gastrointestinal tract. EoE is a well-defined disease with established guidelines, EoG, EoGE and EoC remain a clinical enigma with evidence based on limited anecdotal case reports [5].

Dominguez and coworkers analyze relationships between atopic dermatitis and food allergy. The authors reiterate how atopic dermatitis and food allergy are two distinct entities even if food allergy can be often found in patients with atopic dermatitis. A skin barrier disturbance plays a main role in the development of sensitization and allergy. Therefore, and due to the early appearance of AD, preventive newborn skin care with emollients and early introduction of food appear to be very important to favor food tolerance [6].

Chiera and coworkers analyze the advances in management of food allergy. Food allergy is a potentially life-threatening condition and the current management includes food avoidance and use of emergency medications. New management, based on research and clinical trials, is represented by specific allergen immunotherapy (AIT) which consists in the gradual administration of growing amounts of the offending allergen in order to induce food desensitization with an oral immunotherapy. The desirable goal is to achieve "post desensitization effectiveness", which is the ability to introduce food without reaction even after a period of discontinuation of the offending food. Other therapeutic approaches are being studied alongside immunotherapy such as modified proteins, probiotics, Chinese herbal supplements, biologic therapies and DNA vaccines [7].

Caffarelli and coworkers analyze AIT for inhalants allergens. AIT for aeroallergens consists of the administration of standardized allergen extracts to patients with respiratory IgE-mediated diseases to the same allergen in order to achieve immune tolerance to the allergen and prevent onset of symptoms. AIT is usually delivered by sublingual, subcutaneous route. Both sublingual immunotherapy (SLIT) and subcutaneous immunotherapy (SCIT) are given at increasing doses in the build-up phase and then at maintenance dose. The allergen dose is regularly administered throughout the year or pre/co-seasonally, depending on the causal allergen and the type of allergen extract. AIT with one or multiple allergens currently represents the only causal treatment able to change the natural history of allergic airway diseases [8].

Licari and coworkers analyze use of biologics in children with allergic diseases and present the most recent evidence on biologic therapies for allergic diseases. They analyze biologic use in severe asthma (e.g.: anti IgE, omalizumab; anti IL-5, me-
polizumab, reslizumab, benralizumab), chronic spontaneous urticaria (e.g.: omalizumab), atopic dermatitis (e.g.: anti IL-4 and IL-13, dupilumab) and food allergy (e.g.: anti IgE, omalizumab) [9].

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REFERENCES


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