ATOPICS DERMATITIS

Atopic dermatitis: one of the most common skin conditions, yet too little known

Atopic dermatitis is a chronic, recurrent and remittent type 2 inflammatory disease, with significant negative impact on both patients and their families. It occurs in about 3-10% of adult patients and 15-25% of children, and in 20-30% of patients it takes moderate-to-severe forms.

The onset of the disease usually occurs at an early age: 85-90% of the patients develop atopic dermatitis before the age of 5. The risk factors for the disease persistence in adulthood may include: onset of AD later than 2 years of age, higher severity, childhood AD that persists ≥5 years of age, family history

It is characterized by intense pruritus, recurrent eczematous lesions, unpredictable episodic exacerbation of signs and symptoms, sleep disorders, deterioration of the quality of life. Patients often deal with lifestyle limitations because of the appearance, and lack of sleep due to itching.

Patients with atopic dermatitis often suffer from a series of comorbidities, such as the presence of other atopic manifestations (asthma, rhinitis, keratoconjunctivitis, food allergies).

Although the morphology and distribution of skin lesions are heterogeneous and vary by age group, the general characteristics of this condition and its debilitating effects are similar in children, adolescents and adults.

Atopic dermatitis – a chronic inflammatory disease

Type 2 immunity has evolved to fight infections with helminthic parasites. However, if dysfunctions occur, they lead to type 2 inflammation.

Type 2 inflammation (dysfunctional type 2 immunity) can trigger atopic diseases, including asthma, chronic rhinosinusitis with nasal polyposis, eosinophilic esophagitis and atopic dermatitis. Therefore, quite frequently, patients with atopic dermatitis suffer from a number of the above-mentioned comorbidities.

Type 2 inflammatory cytokines, especially IL-4 and IL-13 are the factors linking skin barrier, immune activation and pruritus in atopic dermatitis.

Skin barrier defects trigger the release of epithelial alarmins, which initiate innate and adaptive type 2 immune responses. Then, Th2 and ILC2 cells migrate from the circulation into the skin, where they produce type 2 inflammatory cytokines, especially IL-4 and IL-13, which are key factors and promoters of type 2 inflammation.

Barrier dysfunction and inflammation are present even in the non-lesional skin of an AD patient and they are worsened in the skin with lesions.

The first biological treatment targeting the mechanism of type 2 inflammation is Dupixent (Dupilumab). It blocks the IL-4Rα receptor to inhibit the signalling pathways of both IL-4 and IL-13, the central factors of type 2 inflammation, reducing the expression of genes associated with inflammation in lesional skin

Dupixent (Dupilumab) is indicated to date for the long-term treatment of moderate-to-severe atopic dermatitis in adult and adolescent patients 12 years of age and older, who are candidates for systemic therapy.

The efficacy and safety of **Dupixent (Dupilumab)** have been assessed in a significant number of patients, so that, at this point, it is the molecule with the largest clinical development program in atopic dermatitis (for adults and adolescents)

The inhibition of IL-4 and IL-13 signalling by **Dupixent (Dupilumab)** leads to:

- Significant and sustained improvements in the signs of atopic dermatitis, measured by EASI-75 response rates;
- Rapid, significant and sustained improvement in the symptoms of atopic dermatitis, measured by improved NRS pruritus maximum scores;
- Multi-dimensional improvement of atopic dermatitis (signs, symptoms and QoL):
  - Most patients have achieved clinically significant improvements in at least one area;
  - Improvements were observed even in patients who did not achieve clear or almost clear skin (an IGA score of 0 or 1).
- The clinical benefits obtained with **Dupixent (Dupilumab)** were consistent between clinical trials, in both adult and adolescent patients;
- The safety profile of **Dupixent (Dupilumab)**, assessed in clinical trials, confirms and supports that this molecule is generally well-tolerated and provides a favourable safety profile:
  - The most common adverse events were reactions at the injection site and eye disorders;
  - Skin infections and serious or severe infections were uncommon in patients treated with **Dupixent (Dupilumab)**, as opposed to patients receiving placebo.

Also, on September 14, 2021, we celebrate the World Day of Atopic Dermatitis, dedicated to raising awareness and understanding atopic dermatitis, as well as to showing respect for the people living with this disease.

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