Recent advances in the systemic treatment of AD and alopecia areata – JAK inhibitors

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JAK inhibitors, also known as Janus kinase inhibitors, are a class of medications that work by blocking the activity of Janus kinases, which are enzymes involved in the signaling pathways of various inflammatory and immune responses. JAK inhibitors have shown promising results in the systemic treatment of several inflammatory and autoimmune conditions, including atopic dermatitis and alopecia areata.

In the context of atopic dermatitis, JAK inhibitors have demonstrated efficacy in reducing the signs and symptoms of this chronic inflammatory skin condition. Atopic dermatitis is characterized by red, itchy, and inflamed skin lesions. The underlying cause of atopic dermatitis involves an imbalance in the immune response, particularly involving T cells and cytokines like interleukins IL-4, IL-13, and IL-31. JAK inhibitors interfere with the signaling pathways of these cytokines and block the inflammatory response. By inhibiting the activity of Janus kinases, JAK inhibitors help modulate the immune response, leading to reduced skin inflammation and improved symptoms in patients with atopic dermatitis.

Alopecia areata is an autoimmune condition characterized by hair loss in patches or complete baldness on the scalp or other areas of the body. It is caused by an immune attack on hair follicles, resulting in hair loss. JAK inhibitors have shown promise in the treatment of alopecia areata by suppressing the immune response directed against the hair follicles. By blocking the Janus kinase signaling pathway, JAK inhibitors interfere with the production of inflammatory cytokines and help restore the balance in the immune system. This can lead to hair regrowth and improved outcomes for individuals with alopecia areata.

It's important to note that while JAK inhibitors have shown effectiveness in the systemic treatment of atopic dermatitis and alopecia areata, they are not without potential side effects. Long-term safety and efficacy are still being studied, and close monitoring is recommended when using JAK inhibitors.