

Recent Treatment for Atopic Dermatitis

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What is atopic dermatitis?

Atopic dermatitis is an inflammatory skin disease that chronically repeats. Its main symptom is itchy eczema, and commonly appears particularly on areas such as the head, face, and neck, as well as flexural areas in children such as the elbows and knees.

Itchiness may cause patients with atopic dermatitis to lose concentration on their work or study during the daytime and to wake up during the night, resulting in insufficient sleep. Atopic dermatitis is often accompanied by other concomitant conditions including bronchial asthma, allergic rhinitis, and conjunctivitis.

What are the causes of atopic dermatitis?

In many cases, atopic dermatitis is caused by genetic origin: the outermost surface of the skin, namely the stratum corneum and epidermis, is not functioning normally, so the ability of the stratum corneum to retain moisture and the essential skin barrier function are weak. With a weak barrier function, the skin is less able to prevent external causative substances of allergies from invading the skin. In atopic dermatitis, an allergic reaction called type 2 immune response excessively occurs, causing itchiness and "lichenification," which is a condition in which the skin becomes rough and thick.

What treatment is available for atopic dermatitis?

The treatment of atopic dermatitis is basically the external application of ointments. Since the skin's barrier function is weak, first it is important to properly apply a moisturizer. In recent years, thoroughly moisturizing the skin during infancy has been reported to have an effect on preventing allergic diseases including atopic dermatitis and asthma. Steroids and immunosuppressants are used to reduce inflammation in skin areas where symptoms including eczema appear. Oral medicines such as antihistamines and antiallergic drugs may be used in combination to alleviate itchiness.

Mild atopic dermatitis may often be controlled with these treatments, but if not, ultraviolet irradiation and oral immunosuppressants may be considered. In addition, even when skin

symptoms appear to have subsided, there may be a period during which mild inflammation smolders.

During this period, proactive therapy to continue treatment, for example, with a reduction in the frequency of external application to two or three times weekly to prevent the next relapse of inflammation is important.

Novel treatment for atopic dermatitis

In many patients with moderate or more severe atopic dermatitis, symptoms cannot be controlled with these conventional therapies. Under such circumstances, various new drugs for atopic dermatitis have emerged since 2018. The new drugs are mainly classified into injections called biological products and oral medicines called Janus kinase (JAK) inhibitors. The biological products specifically inhibit molecules principally involved in the pathology of atopic dermatitis to exert their effect of improving symptoms. Currently, three products, dupilumab, nemolizumab and tralokinumab, are approved for the indication of atopic dermatitis. An option for home self-injection is available so that busy patients can visit the hospital less frequently and may more easily continue treatment. It has been reported that these biological products do not substantially suppress immunity to bacterial and viral infections and thus are relatively highly safe therapies.

JAK inhibitors are drugs that inhibit intracellular signaling molecules of the immune system to suppress inflammation and immunity. They are effective for improving symptoms and particularly at promptly relieving itching, but they may reduce immunity against bacterial and viral infections.

Thus, treatment with JAK inhibitors is continued while checking whether any adverse drug reactions occur with blood tests. Some of these biological products and JAK inhibitors have been approved in children as well. Furthermore, external agents such as delgocitinib and difamilast, which are drugs that are effective for the treatment of smoldering inflammation in the subacute to chronic periods, have been approved for the indication of atopic dermatitis. Treatment options of both injections and oral medicines for systemic and external therapies have drastically increased over the last several years.

Summary

In recent years, options for the treatment of atopic dermatitis have greatly grown. Novel systemic therapies may significantly ameliorate the quality of life for patients with moderate or more severe atopic dermatitis that has not been successfully treated. For patients with mild disease, treatment of chronic inflammation in the smoldering period has enabled the maintenance of a well-controlled stable skin condition for a long time. Advancement of research on the pathology of atopic dermatitis is expected to lead to the development of effective drugs for treatment in the future and a further increase in therapeutic options.