PRESS RELEASE

Treating a common skin condition - New drug shows promise for the treatment of chronic spontaneous urticaria

Patients with chronic spontaneous urticaria suffer from regularly recurring itchy wheals that appear on the skin with no clear cause. Frequently, additional swelling occurs in the facial area, so-called angioedema, which can persist for one to two days. Unfortunately, standard therapy with antihistamines is not efficacious in many patients with chronic spontaneous urticaria. However, these patients can now draw hope as a new drug yields promising results in a clinical trial involving Fraunhofer ITMP.

Chronic spontaneous urticaria (CSU) is a condition in which regularly recurring itchy wheals (pale red swollen skin with pin-size dots to large patches) that appear on the skin. The triggers for these are considered to involve autoallergic and autoimmune mechanisms. The wheals usually persist for several hours and can occur daily in most patients, with some also experiencing swelling, termed angioedema, on the face, largely on the eyes, lips, or tongue, which can persist for one to two days. CSU is said to occur when its symptoms recur over a period of at least six weeks. Some patients suffer from these symptoms for years.

The causes of CSU are complex and considered to involve the production of autoantibodies. Under normal circumstances, antibodies are produced against foreign substances for protection, for example, against pathogens such as bacteria or viruses that enter the body. In contrast, in CSU, antibodies are misdirected against the body's own proteins. These autoantibodies activate mast cells in the skin, which are often referred to as "allergy cells", which in turn release histamine. Histamine is a substance that plays a central role in the body's defense against foreign substances and is well-known to be involved in allergic reactions. As it plays a key role in the subsequent inflammatory process, it leads to swelling of tissues via activation of blood vessels and nerve fibers, thus producing the symptoms of CSU.

The standard therapy for CSU to date has been blockade of the action of histamine by antihistamines. Unfortunately, only a small proportion of patients with CSU are successfully treated by these "anti-allergy tablets". There is now hope for an adequate treatment option for these patients based on the results of a recently concluded clinical trial with the participation of Fraunhofer ITMP, the results of which have been published in "Nature Medicine", a premier peer-reviewed journal that has a focus on translational medicine and early-phase clinical research. In this study, patients with CSU who

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did not respond to standard treatment with antihistamines received the drug fenebrutinib or a placebo. Orally administered fenebrutinib was shown to prevent activation of mast cells and thus the release of histamine from the mast cells. In addition, this agent also has effects on antibody formation, so that it may even be possible to reduce the cause of mast cell activation, the production of the autoantibodies responsible for CSU.

Following the eight-week fenebrutinib treatment, the CSU symptoms were reduced significantly and in some cases were alleviated entirely. Fenebrutinib therefore has the potential to complement previous standard therapies to treat CSU.

"Compared to placebo, patients treated with medium and high doses of fenebrutinib during the course of the study had a greater average decrease in UAS7 levels at week 8 - the endpoint of the study - compared to baseline," said Prof. Marcus Maurer, who co-directs the Fraunhofer ITMP site for Immunology and Allergology in Berlin with Prof. Torsten Zuberbier. "Patients treated with fenebrutinib, which inhibits the BTK enzyme, had their disease well under control. Thus, the study has shown that the use of BTK inhibitors in CSU opens up new treatment perspectives."

Publication

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