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Omalizumab's Effectiveness and Safety in Treating Adult Patients with Exercise-Induced Anaphylaxis caused by Wheat: decrease of in Vitro Basophil Activation and Allergic Reactivity to Wheat

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Abstract

Anaphylactic shock usually occurs in people with wheat-dependent exercise-induced anaphylaxis (WDEIA), hence avoiding wheat products is advised. For adult patients with WDEIA, our goal was to assess the effectiveness and safety of long-term omalizumab treatment. 20 adult WDEIA patients were enrolled in this phase 2, multicenter, single-arm experiment (UMIN 000019250). Every patient received 150-600 mg of omalizumab subcutaneously, and during the administration period (0-48 weeks) and observation period, assessments (basophil activation and blood testing) were carried out at regular intervals (48–68 weeks). The proportion of patients who reached a basophil activation rate of less than 10% with fractionated wheat preparations served as the primary endpoint, while the proportion of patients who experienced no allergic reactions after consuming wheat products served as the secondary endpoint.

Basophil Activation and Allergic Reactivity to Wheat. J Mucosal Immunol Res 7: 173.

: Omalizumab; Allergic reaction; Anaphylaxis

Food-dependent exercise-induced anaphylaxis (FDEIA) is a subtype of IgE-mediated food allergies in which in addition to consuming the o ending foods, exercise or other secondary causes can also trigger allergic symptoms. 1 More than 60% of the meals that cause FDEIA in adults are made of wheat. Anaphylactic shock is a common occurrence in FDEIA patients, hence avoiding the o ending foods is typically advised in these situations. ere isn't a proven e ective treatment for FDEIA at the moment

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At the time of enrollment, we received participants' written informed permission. e study received clearance from Shimane University's ethical committee and the dean of the faculty of medicine (approval number 1945), and it was preregistered with a public registry (UMIN 000019250).

reaction patterns. is outcome is very consistent with what we had previously noticed. is outcome is consistent with our earlier nding that CO-WDEIA patients primarily reacted to pure -5 gliadin but not to HWP, whereas HWP-WDEIA patients largely reacted to HWP.

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Since more than 80% of the patients achieved basophil activation below 10% with all four wheat preparations in the present study, it was clear that the present long-term open study had a greater inhibitory e ect on basophil activation with wheat preparations than our previous pilot study using short-term 150 mg xed dose omalizumab. ese ndings suggest that the dose and duration of omalizumab treatment are crucial elements for obtaining e ective basophil/mast cell suppression of wheat allergen sensitization. Also, the current study showed that omalizumab is e ective for treating HWP-WDEIA, which involves sensitised percutaneous and/or rhino-conjunctival pathways, and CO-WDEIA, which is thought to include sensitization through the gastrointestinal system. e lack of an omalizumab randomised placebo-controlled study and the small number of patients included are two drawbacks of our current investigation.

In conclusion, this study shows the e ectiveness and safety of omalizumab when administered in accordance with the administration guidelines for Xolair for bronchial asthma. It also o ers important information on the treatment of adult patients with WDEIA who avoid eating wheat.

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