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Newcastle University

Health Technology Briefing
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Omalizumab biosimilar for treating chronic spontaneous urticaria

Company/Developer	Celltrion Inc.

☒ New Active Substance ☐ Significant Licence Extension (SLE)

NIHRIO ID: 30071	NICE ID: 11832	UKPS ID: 669089

Licensing and Market Availability Plans

Currently in phase III clinical trial.

Summary

Omalizumab biosimilar is in development as a biosimilar medicine to the approved reference medicine, omalizumab for the treatment of chronic spontaneous urticarial (CSU) in patients who have symptoms despite antihistamine treatment. CSU is debilitating skin condition that causes red, raised, itchy and sometimes painful hives or wheals (raised rash or patches) on the skin. In CSU, the wheals (urticaria) are present daily for at least six weeks and the symptoms are not triggered by a known cause, hence considered 'spontaneous'. Urticaria is caused by an immune response. Aggravating factors can include medication, stress, infection, and autoimmune diseases. A biosimilar medicine is a biological medicine which has not shown any clinically meaningful differences in quality, safety and efficacy from the reference medicine. Biosimilars offer a cost saving alternative to biologics, potentially increasing patient access to biologic therapy.

Omalizumab biosimilar contains the active ingredient omalizumab and is a recombinant humanized monoclonal antibody. Omalizumab binds to immunoglobulin E (IgE; an antibody) and prevents binding of IgE to it's high-affinity IgE receptor on immune cells, thereby reducing the amount of free IgE that is available to trigger an allergic cascade. Omalizumab biosimilar will be administered as a subcutaneous injection. If licensed, omalizumab biosimilar will offer a more affordable alternative option to the reference medicine omalizumab for patients with CSU symptoms after antihistamine treatment.

Proposed Indication

Treatment of chronic spontaneous urticaria (CSU) which remains symptomatic despite H1 antihistamine treatment.[1]

Technology

Description

Omalizumab biosimilar (CT-P39) contains the active ingredient omalizumab and is a recombinant humanised monoclonal antibody that is being developed and manufactured as a proposed biosimilar to omalizumab (Xolair). Omalizumab biosimilar is identical to omalizumab with respect to concentration and presentation.[1] Omalizumab binds to human immunoglobulin E (IgE) and prevents binding of IgE to FcεRI (high-affinity IgE receptor) on basophils and mast cells, thereby reducing the amount of free IgE that is available to trigger the allergic cascade.[2] A biosimilar medicine is a biological medicine, which has been shown not to have any clinically meaningful differences from the originator medicine in terms of quality, safety and efficacy.[3]

Omalizumab biosimilar is in clinical development for the treatment of symptomatic CSU despite H1 antihistamine treatment. In the phase III trial (NCT04426890), omalizumab biosimilar will be administered as a subcutaneous (SC) injection via a prefilled syringe.[1]

Key Innovation

The cost of biologic therapies used to treat allergic diseases is high, which can limit patient access to these treatments. Biosimilars can offer cost savings, potentially allowing more patients globally to benefit from biologic therapy.[4] There are currently no biosimilars for omalizumab that are FDA-approved or authorized for use under the European Medicines Agency (EMA).[5] Omalizumab biosimilar demonstrated comparable safety and pharmacokinetic (PK) profiles compared with the reference product (omalizumab) in healthy volunteers in a phase I trial, which demonstrated PK evidence of high similarity for omalizumab biosimilar and reference omalizumab.[4,5]

If licensed, omalizumab biosimilar would offer an alternative treatment option for the treatment of symptomatic CSU that is as effective as omalizumab but more affordable.

Regulatory & Development Status

Omalizumab biosimilar does not currently have Marketing Authorisation in the EU/UK for any indication.

Patient Group

Disease Area and Clinical Need

CSU is a common and distressing skin condition that causes red, raised, itchy and sometimes painful hives or wheals (raised rash or patches) on the skin with no known obvious trigger. To be considered chronic, the wheals (urticaria) must be present daily for at least six weeks and is referred to as 'spontaneous' when symptoms are not triggered by a known cause. CSU is an unpredictable and debilitating condition which can affect daily life in many ways, including sleep deprivation, anxiety and social isolation. Urticaria is caused by an immune response. Mast cells that circulate in the blood release chemicals, including histamine, into the skins tissue and this causes the red, itchy raised rash often referred to as hives. Research has linked autoimmune disease with about 50% of people with CSU, especially in individuals not

responding to antihistamine therapy. Other aggravating factors can include medication, stress and infection.[6]

0.5-1% of the UK population is thought to be affected. Females are twice as likely than males to be diagnosed with CSU. It can affect both children or adults, although it is more common in older children and adolescents than infants. People aged 20-40 are most likely to develop symptoms.[6] In England (2021-22), there were 7,083 finished consultant episodes (FCE) for urticaria (ICD-10 code: L50), with 6,675 hospital admissions that resulted in 3,908 day cases and 1,886 FCE bed days.[7]

Recommended Treatment Options

NICE recommend the following treatment option for chronic urticaria after previous antihistamine treatment:[8,9]

- A non-sedating antihistamine.
- A leukotriene receptor antagonist (such as montelukast or zafirlukast) in addition to the non-sedating antihistamine.
- A topical antipruritic treatment (such as calamine lotion or topical menthol 1% in aqueous cream) to relieve itch.
- Prescribing additional sedative antihistamine (such as chlorphenamine) at night, if itch is interfering with sleep.
- Secondary care treatment options also include cyclosporine, omalizumab, mycophenolate mofetil, or tacrolimus.
- Omalizumab as an add-on therapy for treating severe CSU in adults and young people aged 12 years and over.

Clinical Trial Information

Trial	NCT04426890; EudraCT- 2020-000952-36; A Double-blind, Randomized, Active-controlled, Parallel Group, Phase 3 Study to Compare Efficacy and Safety of CT-P39 and Xolair in Patients With Chronic Spontaneous Urticaria Who Remain Symptomatic Despite H1 Antihistamine Treatment **Phase III –** Active, not recruiting **Location(s) –** 1 country in EU **Primary completion date –** February 2023
Trial Design	Randomised, parallel assignment, quadruple-masked
Population	N = 634 (actual); Diagnosed with CSU; Diagnosed as CSU refractory to H1-antihistamine; 12 Years to 75 Years
Intervention(s)	• 300 mg of Omalizumab biosimilar in a prefilled syringe 1mL solution, SC injection • 150 mg of Omalizumab biosimilar in a prefilled syringe 1mL solution, SC injection
Comparator(s)	• 300 mg of EU-approved Xolair (Omalizumab) in a prefilled syringe 1mL solution, SC injection • 150 mg of EU-approved Xolair (Omalizumab) in a prefilled syringe 1mL solution, SC injection
Outcome(s)	**Primary outcomes:**

	• Demonstrate the equivalence of efficacy [Time Frame: Change from baseline in Weekly Itch Severity Score(ISS7) at Week 12] • Evaluate the relative potency CT-P39 compared to EU-approved Xolair [Time Frame: Change from baseline in Weekly Itch Severity Score(ISS7) at Week 12] See trial record for full list of other outcomes.
Results (efficacy)	-
Results (safety)	-

Estimated Cost

The cost of omalizumab biosimilar is not yet known.

Relevant Guidance

NICE Guidance

- NICE technology appraisal in development. Ligelizumab for previously treated chronic spontaneous urticaria in people 12 years and over (GID-TA10891). Expected date of issue to be confirmed.
- NICE technology appraisal guidance. Omalizumab for previously treated chronic spontaneous urticaria (TA339). June 2015.

NHS England (Policy/Commissioning) Guidance

- NHS England. 2013/14 NHS Standard Contract For Specialised Allergy Services (All Ages). B09/S/b.
- NHS England. 2013/14 NHS Standard Contract For Specialised Dermatology Services (All Ages). A12/S/a.

Other Guidance

- British Association of Dermatologists. British Association of Dermatologists guidelines for the management of people with chronic urticaria 2021. November 2021.[10]
- NHS North Central London Joint Formulary Committee. Guideline for the treatment of Chronic Spontaneous Urticaria in adult patients. February 2020.[11]
- British Society for Allergy and Clinical Immunology (BSACI). BSACI guideline for the management of chronic urticaria and angioedema. March 2015.[12]

Additional Information

References

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