Health Technology Briefing
April 2022

Bimekizumab for Hidradenitis Suppurativa

Company/Developer	UCB Pharma Ltd

☐ New Active Substance ☒ Significant Licence Extension (SLE)

NIHRIO ID: 24020	NICE ID: 10637	UKPS ID: 656546

Licensing and Market Availability Plans

Currently in phase III clinical trials.

Summary

Bimekizumab is in clinical development for the treatment of Hidradenitis Suppurativa (HS) in adults. HS is a painful, long-term skin condition that causes abscesses and scarring on the skin. The exact cause of hidradenitis suppurativa is unknown, but it occurs near hair follicles where there are sweat glands, usually around the groin, bottom, breasts and armpits. Mild to moderate HS has been successfully treated with oral antibiotics, topical therapy, and lifestyle modifications. However, moderate to severe HS is known to be unresponsive to normal treatments. Surgery is an option for severe HS, but it can cause problems for the patient and the disease may still return. There is a need for safe and effective treatments for patients with moderate to severe HS.

Bimekizumab is a humanised monoclonal antibody that is administered via subcutaneous injection. It is a protein designed to attach to interleukins IL-17A, IL-17F and IL-17AF, which have been identified as drivers of chronic joint and skin inflammation. Bimekizumab inhibits these proteins, resulting in the normalization of skin inflammation and as a consequence improvement in clinical symptoms. If licensed, bimekizumab will provide an additional targeted treatment option for adults with moderate to severe HS.

Proposed Indication

Moderate to severe Hidradenitis Suppurativa.[1]

Technology

Description

Bimekizumab (Bimzelx, UCB4940) is a humanised IgG1/κ monoclonal antibody that selectively binds with high affinity to IL-17A, IL-17F and IL-17AF cytokines, blocking their interaction with the IL-17RA/IL-17RC receptor complex. Bimekizumab inhibits these proinflammatory cytokines, resulting in the normalization of skin inflammation and consequently, improvement in clinical symptoms associated with psoriasis and other inflammatory diseases such as HS.[2,3]

Bimekizumab has completed phase II (NCT03248531) trials and is currently in phase III clinical trials (NCT04242446, NCT04242498, NCT04901195) for treating HS in adults.[1,4-6] Participants were randomized 2:1:1 to receive 320 mg of bimekizumab via subcutaneous injection every 2 weeks (after a 640-mg loading dose at baseline).[2]

Key Innovation

Preclinical data of anti-IL-17A inhibitors has shown this to be an effective target for treatment of various diseases such as HS, psoriasis and ankylosing spondylitis. However, many patients respond only partially, or not at all, to inhibition of IL-17A alone. Bimekizumab offers dual-cytokine blockade of both IL-17A and IL-17F, which is hypothesised to profoundly affect chronic tissue inflammation and provide additional efficacy in immune-mediated diseases, such as HS, in which IL-17–producing TH cells infiltrate the lesional dermis.[2] If licensed, bimekizumab will provide an additional targeted treatment option for adults with moderate to severe HS.

Regulatory & Development Status

Bimekizumab currently has market authorization in the UK/EU for the treatment of moderate to severe plaque psoriasis in adults who are candidates for systemic therapy.[3,7]

Bimekizumab is currently in phase II/III clinical trials for the following indications:[8]

- Psoriatic arthritis
- Ankylosing spondylitis
- Non-radiographic axial spondyloarthritis

Patient Group

Disease Area and Clinical Need

Hidradenitis suppurativa (HS) /acne inversa is a chronic, physically and emotionally debilitating inflammatory disease that causes painful, deep-seated, inflammatory nodules and abscesses in the armpits, genital area, groin, buttocks/anus, and breasts resulting in inflamed lesions, lumps, cysts, scarring, unpleasant smell and decreased mobility.[9,10] HS tends to start after puberty. It can persist for many years and worsen over time, with serious effects on daily life, social functioning, and emotional well-being.[11] HS is three times more prevalent in women than men and strongly associated with obesity and smoking.[12] Other comorbidities include: arthropathies, metabolic syndrome, increased cardiovascular disease risk,

inflammatory disorders, lymphedema, squamous cell carcinoma, depression and increased risk of suicide.[12,13] HS is managed by combined medical and surgical therapy.[14]

HS is estimated to affect about 1% of the population in any one year.[7] In England (2020-21), there were 1,998 finished consultant episodes (FCE) and 1,841 admissions for HS (ICD-10 code L73.2), which resulted in 1,586 FCE bed days and 967 day cases.[15]

Recommended Treatment Options
NICE currently recommends adalimumab for treating moderate to severe HS.[16 17]

Clinical Trial Information

Trial	NCT03248531, 2017-000892-10; A Phase 2 Multicenter, Investigator-Blind, Subject-Blind, Placebo-Controlled Study of the Efficacy, Safety, and Pharmacokinetics of Bimekizumab in Subjects With Moderate to Severe Hidradenitis Suppurativa **Phase II**: Completed **Location(s)**: 5 EU countries, US and other countries **Primary completion date**: November 2018
Trial Design	Randomized, parallel assignment, quadruple masking
Population	N=90, aged 18 to 70 years, must have a diagnosis of HS for at least 1 year prior to baseline
Intervention(s)	Participants received one bimekizumab 640 mg subcutaneous (SC) injection as loading dose started from baseline, followed by bimekizumab 320 mg SC injections at weeks 2, 4, 6, 8 and 10.[2]
Comparator(s)	Active comparator: Participants received one adalimumab 160 mg SC injection as loading dose started from baseline, followed by adalimumab 80 mg SC injection at week 2 and adalimumab 40 mg SC injections from weeks 4 to 10.[2] Placebo comparator: Participants received matching placebo SC injections.[2]
Outcome(s)	Primary outcome: Percentage of participants achieving clinical response as measured by Hidradenitis Suppurativa Clinical Response (HiSCR) at Week 12 [Time Frame: Week 12] See trial record for full list of outcomes
Results (efficacy)	Bimekizumab demonstrated a higher HiSCR rate vs placebo at week 12 (57.3% vs 26.1%; posterior probability of superiority equalled 0.998, calculated using Bayesian analysis). Bimekizumab demonstrated greater clinical improvements compared with placebo. Improvements in the International Hidradenitis Suppurativa Severity Score (IHS4) were seen at week 12 with bimekizumab (mean [SD] IHS4, 16.0 [18.0]) compared with placebo (mean [SD] IHS4, 40.2 [32.6]). More bimekizumab-treated participants achieved positive results on stringent outcome measures compared with placebo.

	At week 12, 46% of bimekizumab-treated participants achieved $HiSCR_{75}$ and 32% achieved $HiSCR_{90}$, whereas 10% of placebo-treated participants achieved $HiSCR_{75}$ and none achieved $HiSCR_{90}$; in adalimumab-treated participants, 35% achieved $HiSCR_{75}$ and 15% achieved $HiSCR_{90}$.[2]
Results (safety)	One participant withdrew because of adverse events. Serious adverse events occurred in 2 of 46 bimekizumab-treated participants (4%), 2 of 21 placebo-treated participants (10%), and 1 of 21 adalimumab-treated participants (5%).[2]

Clinical Trial Information	
Trial	**BE HEARD I,** NCT04242446, 2019-002550-23, A Phase 3, Randomized, Double-Blind, Placebo-Controlled, Multicenter Study Evaluating the Efficacy and Safety of Bimekizumab in Study Participants With Moderate to Severe Hidradenitis Suppurativa **Phase III**: Active, not recruiting **Location(s)**: 8 EU countries, US, Canada and other countries **Primary completion date**: May 2022
Trial Design	Randomized, parallel assignment, quadruple masking
Population	N=505, 18 years of age, participants must have a diagnosis of HS
Intervention(s)	Subjects participating in the study will receive one of 3 assigned dosing regimens Treatment Period.
Comparator(s)	Subjects randomized to this arm will receive placebo during the Initial Treatment Period and bimekizumab during the Maintenance Treatment Period.
Outcome(s)	Primary outcome: Percentage of participants achieving clinical response as measured by Hidradenitis Suppurativa Clinical Response 50 (HiSCR50) at Week 16 [Time Frame: Week 16] See trial record for full list of outcomes
Results (efficacy)	-
Results (safety)	-

Clinical Trial Information	
Trial	**BE HEARD II,** NCT04242498, 2019-002551-42, A Phase 3, Randomized, Double-Blind, Placebo-Controlled, Multicenter Study Evaluating the Efficacy and Safety of Bimekizumab in Study Participants With Moderate to Severe Hidradenitis Suppurativa **Phase III**: Active, not recruiting **Location(s)**: 8 EU countries, UK, US, Canada and other countries **Primary completion date**: May 2022
Trial Design	Randomized, parallel assignment, quadruple masking
Population	N=509, 18 years of age, must have a diagnosis of HS

Intervention(s)	Subjects participating in the study will receive assigned bimekizumab dosing regimen 1, 2 or 3 during the Treatment Period.
Comparator(s)	Matched placebo
Outcome(s)	Primary outcome: Percentage of participants achieving clinical response as measured by HiSCR50 at Week 16 [Time Frame: Week 16] See trial record for full list of outcomes
Results (efficacy)	-
Results (safety)	-

Clinical Trial Information	
Trial	**BE HEARD EXIT**, NCT04901195, 2020-004179-42, A Phase 3, Open-Label, Parallel Group, Multicenter, Extension Study Evaluating the Long-Term Treatment of Bimekizumab in Study Participants With Moderate to Severe Hidradenitis Suppurativa **Phase III**: Enrolling by invitation **Location(s)**: 10 EU countries, US, Canada and other countries **Primary completion date**: December 2024
Trial Design	Non-randomized, parallel assignment, open label
Population	N=830 (estimated), 18 years of age, completed the Maintenance Treatment Period through Week 48 in HS0003 (NCT04242446) or HS0004 (NCT04242498), was eligible to receive bimekizumab at the time of completing the feeder study, and did not meet any withdrawal criteria of the feeder study
Intervention(s)	Subjects participating in the study will receive assigned bimekizumab dosing regimen 1 or 2 during the open-label extension period.
Comparator(s)	N/A
Outcome(s)	Primary outcome: Percentage of participants with treatment-emergent adverse events (TEAEs) during the study [Time Frame: From Baseline (Day 1) until end of Safety Follow-Up (up to Week 120)] See trial record for full list of outcomes
Results (efficacy)	-
Results (safety)	-

Estimated Cost

Bimekizumab is already marketed in the UK; 160 milligrams (mg)/1ml solution for pre-filled injection pens at the cost of £2443 per dose.[18] A confidential discount is available for bimekizumab in line with the NICE technology appraisal of bimekizumab in moderate to severe plaque psoriasis (TA723).[19]

Relevant Guidance

NICE Guidance

- NICE technology appraisal. Adalimumab for treating moderate to severe hidradenitis suppurativa (TA392). June 2016.

NHS England (Policy/Commissioning) Guidance

- NHS England. 2013/14 NHS Standard Contract for Specialised Dermatology Services (All Ages). A12/S/a.
- NHS England. Clinical Commissioning Policy: Infliximab for the treatment of hidradenitis suppurativa. 16018/P. July 2016.

Other Guidance

- Journal of the American Academy of Dermatology. North American clinical management guidelines for hidradenitis suppurativa: A publication from the United States and Canadian Hidradenitis Suppurativa Foundations. 2019.[20]
- British Association of Dermatologists. Guidelines for the management of hidradenitis suppurativa (acne inversa). 2018.[14]
- European S1 guideline for the treatment of hidradenitis suppurativa/acne inversa. 2015.[10]

Additional Information

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