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Certolizumab pegol (Cimzia) for chronic plaque psoriasis in adults

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LAY SUMMARY

Plaque psoriasis is the most common form of the disease and appears as patches of skin which are raised, red, inflamed and sometimes covered in white scales. Patches or plaques can develop anywhere on the body. They develop because sufferers have an overactive immune system, which causes inflammation when it is not required. The inflammation activates the production of new skin cells faster than old the cells can die and be shed from the skin. The new cells push the old cells to the surface of the skin where they build up in the form of plaques. Plaques can be highly visible, painful and itchy hence the condition can greatly impact on the quality of life of individuals. It is by nature a chronic disease and there is currently no therapy that would give hope for a complete cure of psoriasis.

Certolizumab pegol is an anti-TNF (anti-tumour necrosis factor) drug. It works by blocking the action of TNF protein and which reduces inflammation. It is currently licensed for the treatment of several chronic inflammatory conditions, including Crohn's Disease, rheumatoid arthritis, psoriatic arthritis and juvenile arthritis. If licensed for chronic plaque psoriasis in adults it will offer an additional treatment to relieve the symptoms of the condition.

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TARGET GROUP

- Plaque psoriasis in adults: chronic

TECHNOLOGY

DESCRIPTION

Certolizumab pegol [CDP-870; CDP-870 (IV); CDP-870 (SC); CDP870; CDP870 (IV); CDP870 (SC); certolizumab; certolizumab (IV); certolizumab (SC); certolizumab pegol; certolizumab pegol (IV); certolizumab pegol (SC); Cimzia; Cimzia (IV); Cimzia (SC); Perstymab; PHA-738144; PHA-738144 (IV); PHA-738144 (SC)] is a recombinant humanised high anti-affinity anti-TNF alpha antibody fragment, developed by UCB for the treatment of chronic inflammatory conditions, including Crohn's disease (CD), rheumatoid arthritis (RA), psoriatic arthritis and ankylosing spondylitis. It is also being developed for the treatment of psoriasis and juvenile arthritis. It is produced by fermentation in Escherichia coli, and is pegylated to provide a long t1/2.

In the phase III clinical trial for psoriasis certolizumab pegol is administered by 200mg or 400mg subcutaneously every 2 weeks for 12 weeks.

Certulizumab pegol currently has EU Marketing Authorisation for use in rheumatic arthritis, psoriatic arthritis, ankylosing spondylitis and axial spondyloarthritis.

INNOVATION and/or ADVANTAGES

If licenced, certolizumab pegol will offer an additional treatment option for chronic plaque psoriasis in adults. Preliminary results from trials showed that certolizumab pegol demonstrated significant improvements in patients with moderate to severe chronic plaque psoriasis.[1]

DEVELOPER

UCB/ Dermira Inc.

AVAILABILITY, LAUNCH or MARKETING

It is currently in clinical trials phase III.

PATIENT GROUP

BACKGROUND

Psoriasis is an inflammatory skin disease typically following a relapsing and remitting course. In the majority of cases it occurs before the age of 35 and is associated with joint disease in a significant proportion of patients. Plaque psoriasis is the most common form of this disease. It is characterised by well-delineated red, scaly plaques that vary in extent. The effect of living with a highly visible, stigmatised skin disease with symptoms such as chronic itch, bleeding or scaling, contribute to profound functional, psychological, and social morbidity. In addition, sufferers tend to have reduced levels of employment and income.[2]

CLINICAL NEED and BURDEN OF DISEASE

Studies on the incidence and prevalence of psoriasis show that the occurrence varies according to age and geographic location; occurring more frequently in countries further away from the equator. Furthermore, it is estimated to affect about 2 to 4% of the population in western countries.[3] The UK is estimated to have a prevalence of 1.3 to 2.2%, whereby men and women are equally affected.[2]

Approximately 90% of people with psoriasis suffer from plaque psoriasis, which is by far the most common form. Other forms include guttate psoriasis or pustular forms.[2] A significant proportion of individuals with psoriasis develop chronic, inflammatory arthritis that leads to joint deformations and disability. Nail changes are also seen in a large proportion of patients. Psoriasis increases the risk of developing other serious clinical conditions such as cardiovascular and other non-communicable diseases too.[4]

The condition can lead to a significant physical, emotional and social burden. Disfiguration, disability and marked loss of productivity are common challenges. Psoriasis has a significant impact on mental health and is associated with higher rates of depression, social exclusion, discrimination and stigma, causing suffering for individuals and their families.

PATIENT PATHWAY

RELEVANT GUIDANCE

NICE GUIDANCE

- NICE Technology appraisal guidance in development. Psoriasis (plaque, moderate, severe) - ixekizumab [ID904]. Expected April 2017.
- NICE Technology appraisal guidance in development. Psoriasis (plaque, chronic, severe, children, young people) - adalimumab, etanercept and ustekinumab [ID854]. Expected July 2017.
- NICE Technology appraisal guidance. Certolizumab pegol for treating rheumatoid arthritis after inadequate response to a TNF- alpha inhibitor [TA415]. October 2016.
- NICE Technology appraisal guidance. Apremilast for treating moderate to severe plaque psoriasis [TA419]. November 2016.
- NICE Technology appraisal guidance. Secukinumab for treating moderate to severe plaque psoriasis [TA350]. July 2015.
- NICE Technology appraisal guidance. Adalimumab for treatment of adults with psoriasis [TA146]. June 2008.
- NICE Technology appraisal guidance. Etanercept and Efalizumab for treatment of adults with psoriasis [TA103]. July 2006.
- NICE Technology appraisal guidance. Infliximab for the treatment of adults with psoriasis [TA134]. January 2008.
- NICE Technology appraisal guidance. Ustekinumab for the treatment of adults with moderate to severe psoriasis [TA180]. September 2009.
- NICE guidelines. Psoriasis: Assessment and Management [CG153]. October 2012.

NHS ENGLAND and POLICY GUIDANCE

- NHS England. 2013/14 NHS Standard Contract for Specialised dermatology services (All ages). A/12/S/a

OTHER GUIDANCE

No guidance is currently available.

CURRENT TREATMENT OPTIONS

Psoriasis is a chronic disease with an unpredictable course of symptoms and triggers. There is currently no therapy that would give hope for a complete cure of psoriasis. Life-long treatment to control symptoms must therefore be both highly effective and safe over long periods. A range of topical and systemic therapies as well as phototherapy are used, involving reducing pain and disability from arthritis and other manifestations.[4]

A holistic, whole person approach is needed rather than just management of the skin inflammation. This might include, screening for associated diseases such as hypertension, dyslipidaemia, diabetes mellitus and cardiovascular disorders as well as their complications such as myocardial infarction and stroke. Additionally, psoriasis patients are more likely to suffer from depression and anxiety disorders.

Three major forms of therapy exist – topical therapy, phototherapy, and systematic therapy. Treatment is based on severity and the time of presentation. Mild psoriasis usually is treated with topical therapy, progressing to phototherapy in the case of insufficient response. Moderate to severe psoriasis requires systemic therapy. Commonly used first-line drugs include methotrexate, ciclosporin, acitretin and etretinate. In some countries, other systemic therapies such as biologic agents and fumaric acid esters are available.[4]

EFFICACY and SAFETY

Trial	CIMPASI-2 CIMPASI-II EudraCT Number: 2014-003486-14 NCT02326272 PS0002 TrialTroveID-243230
Sponsor	Dermira, UCB
Status	Completed
Source of Information	Trialtrove
Location	Austria, Canada, Denmark, Poland, United States
Design	Randomized, efficacy, safety, placebo control, double blind/blinded, open label, active comparator, multiple arm
Participants	N=227; aged >18; chronic plaque psoriasis for at least more than 6 months; baseline psoriasis activity and severity index >12; body surface area ≥ 10%; Physician's Global Assessments score ≥3; candidate for systemic psoriasis therapy and/or phototherapy and/or chemophototherapy
Schedule	Randomised for up to 48 weeks and open-label treatment for up to an additional 96 weeks;

	1 Experimental: CZP 400mg certolizumab pegol subcutaneous injection at weeks 0, 2, 4; 200mg injection every 2 weeks starting week 6; 2 Experimental: CZP 400mg subcutaneous injection every 2 weeks; Patients were randomised to three dosing arms: 400mg every two weeks (n=87), 400mg at weeks 0,2 and 4 followed by 200mg every 2 weeks (n=91), or placebo every two weeks (n=49)
Follow-up	Not reported.
Primary Outcomes	Not reported.
Secondary Outcomes	Not reported.
Key Results	Not reported.
Adverse effects (AEs)	Not reported.
Expected reporting date	Not reported.

Trial	CIMPACT EudraCT Number: 2014-003492-36 NCT02346240 PS0003 TrialTroveID-057132.
Sponsor	Dermira, UCB
Status	Completed
Source of Information	Trialtrove
Location	EU (incl.UK), Canada, United States
Design	Randomized, efficacy, safety, placebo control, double blind/blinded, open label, active comparator, multiple arm
Participants	N=559; aged >18; chronic plaque psoriasis for at least more than 6 months; baseline psoriasis activity and severity index >12; body surface area ≥ 10%; Physician's Global Assessments score ≥ 3; candidate for systemic psoriasis therapy and/or phototherapy and/or chemophototherapy
Schedule	Randomised for up to 48 weeks and open-label treatment for up to an additional 96 weeks; 1 Experimental: CZP 400mg certolizumab pegol subcutaneous injection at weeks 0, 2, 4; 200mg injection every 2 weeks starting week 6; 2 Experimental: CZP 400mg subcutaneous injection every 2 weeks;
Follow-up	Not reported.
Primary Outcomes	Not reported.
Secondary Outcomes	Not reported.
Key Results	Not reported.
Adverse effects (AEs)	Not reported.

Expected reporting date	Not reported.

Trial	CIMPASI-1 CIMPASI-I EudraCT Number: 2014-003513-28 NCT02326298 PS0005 TrialTroveID-249402
Sponsor	Dermira, UCB
Status	Completed
Source of Information	Trialtrove
Location	Canada, Czech Republic, Germany, Hungary, United States
Design	Randomized, efficacy, safety, placebo control, pharmacokinetics, double blind/blinded, open label, multiple arm
Participants	N=234; aged >18; chronic plaque psoriasis for at least more than 6 months; baseline psoriasis activity and severity index >12; body surface area ≥ 10%; Physician's Global Assessments score ≥ 3; candidate for systemic psoriasis therapy and/or phototherapy and/or chemophototherapy
Schedule	1 Experimental: CZP 400mg certolizumab pegol subcutaneous injection at weeks 0,2,4, followed by certolizumab pegol subcutaneous injection 200mg every 2 weeks (Q2W) starting at week 6 2 Experimental: CZP 400mg certolizumab pegol subcutaneous injection every two weeks (Q2W) Placebo Comparator: Placebo subcutaneous injection every two weeks (Q2W) Patients will receive blinded treatment for up to 48 weeks and open label treatment with cerolizumab pegol for up to an additional 96 weeks
Follow-up	Not reported.
Primary Outcomes	Not reported.
Secondary Outcomes	Not reported.
Key Results	Not reported.
Adverse effects (AEs)	Not reported.
Expected reporting date	Not reported.

Trial	NCT03051217 PS00017 TrialTroveID-295789
Sponsor	UCB
Status	Open

Source of Information	Trialtrove
Location	Japan
Design	Randomized, efficacy, safety, placebo control, double blind/blinded, multiple arm
Participants	Planned N=227; aged >20; chronic plaque psoriasis for at least more than 6 months; baseline psoriasis activity and severity index >12; body surface area ≥ 10%; Physician's Global Assessments score ≥ 3; candidate for systemic psoriasis therapy and/or phototherapy and/or chemophototherapy Candidates for systemic PSO therapy and/or phototherapy and/or chemophototherapy. For subjects with generalized pustular PSO or erythrodermic PSO Diagnosis of generalized pustular PSO or erythrodermic PSO at screening. History of plaque-type PSO if subjects have a diagnosis of erythrodermic PSO. Baseline BSA affected by PSO .or=80% if subjects have a diagnosis of erythrodermic PSO.
Schedule	Arm 1: Placebo Comparator: Placebo subcutaneous injection every two weeks (Q2W) Assigned Interventions: Other: Placebo Pharmaceutical Form: Solution for injection in pre-filled syringe Concentration: 0.9% saline Route of Administration: Subcutaneous use Q2W Other Name: PBO Arm 2: Experimental: CZP 200 mg Certolizumab Pegol subcutaneous injection 400mg at weeks 0,2,4 followed by a Certolizumab Pegol subcutaneous injection 200mg every two weeks (Q2W) with PBO administered to maintain the blind, starting at week 6 Assigned interventions: Drug: Certolizumab Pegol Pharmaceutical Form: Solution for injection in pre-filled syringe Concentration: 200mg/mL Route of Administration: Subcutaneous use Other names: Cimzia, CDP870, CZP Arm 3: CZP 400mg Certolizumab Pegol subcutaneous injection 400mg every 2 weeks (Q2W). Assigned Interventions: Drug: Certolizumab Pegol Pharmaceutical Form: Solution for injection in pre-filled syringe Concentration: 200mg/mL Route of Administration: Subcutaneous use Other Names: Cimzia, CDP870, CZP
Follow-up	Not reported.
Primary Outcomes	Not reported.
Secondary Outcomes	Not reported.
Key Results	Not reported.
Adverse effects (AEs)	Not reported.
Expected reporting date	Not reported.

ESTIMATED COST and IMPACT

COST

IMPACT – SPECULATIVE

IMPACT ON PATIENTS and CARERS

- ☐ Reduced mortality/increased length of survival
- ☒ Reduced symptoms or disability
- ☒ Other: *improved patient convenience, wider societal benefits*
- ☐ No impact identified

IMPACT ON HEALTH and SOCIAL CARE SERVICES

- ☐ Increased use of existing services
- ☐ Decreased use of existing services
- ☐ Re-organisation of existing services
- ☐ Need for new services
- ☐ Other.
- ☒ None identified

IMPACT ON COSTS and OTHER RESOURCE USE

- ☐ Increased drug treatment costs
- ☐ Reduced drug treatment costs
- ☐ Other increase in costs
- ☐ Other reduction in costs:
- ☐ Other
- ☒ None identified

OTHER ISSUES

- ☐ Clinical uncertainty or other research question identified
- ☒ None identified

REFERENCES

1 Dermira Inc. New CIMZIA® (certolizumab pegol) data in moderate-to-severe plaque psoriasis and psoriatic arthritis presented at American Academy of Dermatology 2017 Annual Meeting. 2017 [cited 2017 27.03.]; Available from: https://globenewswire.com/news-release/2017/03/04/931606/0/en/New-CIMZIA-certolizumab-pegol-data-in-moderate-to-severe-plaque-psoriasis-and-psoriatic-arthritis-presented-at-American-Academy-of-Dermatology-2017-Annual-Meeting.html

2 NICE. Psoriasis: Assessment and Management. Clinical Guideline. 2012.

3 The Society for Investigative Dermatology. Global Epidemiology of Psoriasis: A Systematic Review of Incidence and Prevalence. 2013.

4 World Health Organization. Global Report on Psoriasis. 2016.