NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Secukinumab for treating plaque psoriasis in children and young people

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of secukinumab within its marketing authorisation for treating plaque psoriasis in children and young people.

Background

Plaque psoriasis is an inflammatory skin condition characterised by an accelerated rate of turnover of the upper layer of the skin (epidermis). This leads to an accumulation of skin cells forming raised plaques on the skin. These plaques can be flaky, scaly, itchy and red or a darker colour to the surrounding skin. Plaque psoriasis may affect the scalp, elbows, knees and lower back and sometimes the face, groin, nails, armpits or behind the knees. Although it is a chronic, persistent, severe condition, its course may be unpredictable, with flare-ups and remissions.

Psoriasis is generally graded as mild, moderate or severe and takes into account the location, surface area of skin affected and the impact of the psoriasis on the person. The Psoriasis Area and Severity Index (PASI) is an index of disease severity in adults and takes into account the size of the area covered with psoriasis as well as redness, thickness and scaling. In addition, the Children's Dermatology Life Quality Index (CDLQI) is a validated tool that can be used to assess the impact of psoriasis on physical, psychological and social wellbeing in children and young people. Although there are no standard tools or criteria for grading psoriasis as mild, moderate or severe, NICE has previously used a PASI score of 10 or above to define 'severe' psoriasis in its appraisals (for example, see TA455).

The prevalence of psoriasis in the United Kingdom is estimated to be between 1.3% and 2.2%[1]. The prevalence is lower in children and adolescents and is approximately 0.55% in children under 10 years and 1.4% in people aged between 10 and 19 years.[2] About 90% of people with the condition have plaque psoriasis and about 20% have moderate to severe disease (15% moderate, 5% severe),[3] equating to approximately 6000 children (under 10s) and 16,000 adolescents (aged 10 to 19) in England.[4]

There is no cure for psoriasis but there is a wide range of topical and systemic treatments that can manage the condition. Most treatments reduce the severity of psoriasis flares rather than prevent episodes. Psoriasis has to be treated continually and on a long-term basis. NICE clinical guideline 153 on psoriasis recommends that people with psoriasis should be offered topical therapies such as corticosteroids, vitamin D and vitamin D analogues. For people in whom topical therapy does not alleviate symptoms the guideline recommends phototherapy (broad- or narrow-band ultraviolet B light) and psoralen with ultraviolet A phototherapy (PUVA). The guideline recommends systemic non-biological therapies for people whose psoriasis cannot be controlled with topical therapy, has a significant impact on physical, psychological or social wellbeing and if one or more of the following apply:

- psoriasis is extensive or
- psoriasis is localised and associated with significant functional impairment and/or high levels of distress or
- phototherapy has been ineffective, cannot be used or has resulted in rapid relapse.

The guideline notes that methotrexate and ciclosporin do not have UK marketing authorisations for treating psoriasis in children and young people. The guideline recommends that acitretin should only be used in exceptional circumstances for children and young people.

NICE technology appraisal guidance 455 recommends adalimumab, etanercept, and ustekinumab in children and young people aged over 4, 6 or 12 years respectively, with severe psoriasis (as defined by a total PASI score of 10 or more) and whose disease has not responded to, or who are intolerant to or contraindicated to standard systemic therapies such as methotrexate or phototherapy.

Treatment options for adults include etanercept, adalimumab, ustekinumab, secukinumab, apremilast, ixekizumab, dimethyl fumarate, brodalumab, guselkumab, certolizumab pegol, tildrakizumab and risankizumab (NICE TA103, TA146, TA180, TA350, TA419, TA442, TA475, TA511, TA521, TA574, TA575 and TA596); these options are for adults with severe psoriasis whose disease has not responded to, or who are intolerant to or contraindicated to, standard systemic therapies. Technology appraisal guidance 134 recommends infliximab as a treatment option for adults with very severe psoriasis whose disease has not responded to, or who are intolerant to or contraindicated to standard systemic therapies.

Biosimilar products of some of the biological therapies are available for use in the NHS.

The technology

Secukinumab (Cosentyx, Novartis) is a high-affinity fully human monoclonal anti-human interleukin-17A (IL-17A) antibody of the IgG1/kappa isotype. It is administered by subcutaneous injection.

Secukinumab has a UK marketing authorisation for treating moderate to severe plaque psoriasis in people aged 6 to 17 years. It has been studied in clinical trials compared with placebo or etanercept in people aged 6 to 17 years with severe psoriasis for whom topical treatment, phototherapy and/or systemic therapy have been inadequately effective. Secukinumab has a marketing authorisation for treating moderate to severe plaque psoriasis in adults.

Intervention(s)	Secukinumab
Population(s)	Children and young people with severe plaque psoriasis (as defined by a total PASI score of 10 or more)

Comparators	If systemic non-biological treatment or phototherapy is suitable: • systemic non-biological therapies (including methotrexate and ciclosporin) • phototherapy with or without psoralen. If conventional systemic non-biological treatment or phototherapy are inadequately effective, not tolerated or contraindicated: • adalimumab • etanercept • ustekinumab • best supportive care.
Outcomes	The outcome measures to be considered include: • severity of psoriasis • psoriasis symptoms on the face, scalp, nails and joints • mortality • response and remission rate • duration of response • relapse rate • adverse effects of treatment • health-related quality of life.
Economic analysis	The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year. If the technology is likely to provide similar or greater health benefits at similar or lower cost than technologies recommended in published NICE technology appraisal guidance for the same indication, a cost-comparison may be carried out. The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared. Costs will be considered from an NHS and Personal Social Services perspective. The availability of any commercial arrangements for the intervention, comparator and subsequent treatment technologies will be taken into account.

Other considerations	Where the evidence allows, the following subgroups will be considered: • previous use of phototherapy and/or systemic non-biological therapy • previous use of biological therapy. Where the evidence allows, sequencing of different drugs and the place of secukinumab in such a sequence will be considered. The availability and cost of biosimilar products should be taken into account. Guidance will only be issued in accordance with the marketing authorisation. Where the wording of the therapeutic indication does not include specific treatment combinations, guidance will be issued only in the context of the evidence that has underpinned the marketing authorisation granted by the regulator.
Related NICE recommendations and NICE Pathways	**Related Technology Appraisals** Secukinumab for treating moderate to severe plaque psoriasis (2015) NICE technology appraisal guidance 350. Review date: July 2018. Certolizumab pegol for treating moderate to severe plaque psoriasis (2019) Technology appraisal guidance 574. Review date: April 2022. Tildrakizumab for treating moderate to severe plaque psoriasis' NICE technology appraisals guidance 575. Review date: April 2022. Guselkumab for treating moderate to severe plaque psoriasis' (2018) NICE technology appraisals guidance 52. Review date: June 2021. Brodalumab for treating moderate to severe plaque psoriasis (2018) NICE technology appraisals guidance 511. Review date: March 2021. Dimethyl fumarate for treating moderate to severe plaque psoriasis (2017) NICE technology appraisal guidance 475. Review date: September 2020. Ixekizumab for treating moderate to severe plaque psoriasis (2017) NICE technology appraisal guidance 442. Review date: April 2020. Apremilast for treating moderate to severe psoriasis [rapid review of technology appraisal guidance 368] (2016) NICE technology appraisal guidance 419. Review date: November 2019. Adalimumab, etanercept and ustekinumab for treating plaque psoriasis in children and young people (2017) NICE technology guidance 455. Review date July 2020. Risankizumab for treating moderate to severe plaque

	psoriasis (2019) Technology appraisal guidance 596. Review date August 2022. Ustekinumab for the treatment of adults with moderate to severe psoriasis (2009) NICE Technology Appraisal 180. Static list. Adalimumab for the treatment of adults with psoriasis (2008) NICE Technology Appraisal 146. Static list. Infliximab for the treatment of adults with psoriasis (2008) NICE Technology Appraisal 134. Static list. Etanercept and efalizumab for the treatment of adults with psoriasis (2006) NICE Technology Appraisal 103. Static list. Note: guidance for efalizumab has now been withdrawn. **Related Guidelines** 'Psoriasis: assessment and management' (2012) NICE guideline 153. No new evidence identified in June 2017. Review date to be confirmed. **Related Interventional Procedures** Grenz rays therapy for inflammatory skin conditions (2007) NICE interventional procedures guidance 236. **Related Quality Standards** Psoriasis (2013) NICE quality standard 40. **Related NICE Pathways** Psoriasis (2012; updated 2019) NICE Pathway.
Related National Policy	The NHS Long Term Plan, 2019. NHS Long Term Plan NHS England (2018/2019) NHS manual for prescribed specialist services (2018/2019) Chapter 61: Highly specialist dermatology services. Department of Health and Social Care, NHS Outcomes Framework 2016-2017: Domains 1 - 5. https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017

References

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2. Gelfand J, Weinstein R, Porter S et al. (2005) Prevalence and treatment of psoriasis in the United Kingdom A population based study. JAMA Dermatology 141: 1537-1541.

3. Menter A, Korman NJ, Elmets CA et al. (2011) Guidelines of care for the management of psoriasis and psoriatic arthritis. Section 6. Guidelines of care for the treatment of psoriasis and psoriatic arthritis: case-based presentations and evidence-based conclusions. J Am Acad Dermatol; 65:137–74.

4. Office for National Statistics (2019) Population Estimates for UK, England and Wales, Scotland and Northern Ireland mid-2018. Accessed September 2019.

