NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Tezepelumab for treating severe asthma

Draft scope

Draft remit/appraisal objective

To appraise the clinical and cost effectiveness of tezepelumab within its marketing authorisation for treating severe asthma.

Background

Asthma is a chronic inflammatory disease associated with variable airflow obstruction and airway hyperresponsiveness. It is characterised by exacerbations associated with symptoms such as breathlessness, chest tightness, wheezing, sputum production and cough. Asthma is classified as severe when it does not improve with standard therapy.[1] Eosinophils are thought to play a major role in airway inflammation in asthma. Asthma can also have an allergic component, resulting in over-production of human immunoglobulin E (IgE).

People with severe asthma often have a severely impaired quality of life which can lead to fatigue, absence from school or work and psychological problems including stress, anxiety and depression. There were 1,484 deaths from asthma in the UK in 2017.[2] Around 4.8 million people in England and Wales currently have treatment for asthma.[2]

NICE guideline [NG80] on asthma: diagnosis, monitoring and chronic asthma management, and guidelines from the Global Initiative for Asthma (GINA)[3] recommend a stepwise approach for treating asthma. Control is maintained by stepping up treatment as necessary using combinations of inhaled corticosteroids (ICS), leukotriene receptor antagonists (LTRAs) and long-acting beta-2 agonists (LABAs), and stepping down when control is good. People whose asthma is inadequately controlled by medium-dose ICS plus a LABA with or without an LTRA should be stepped up to have high-dose ICS or offered a trial of an additional drug (for example, a long-acting muscarinic receptor agonist or theophylline).

NICE TA278 recommends omalizumab for treating severe persistent confirmed allergic IgE-mediated asthma as an add-on to optimised standard therapy in people aged 6 and older who need continuous or frequent treatment with oral corticosteroids (4 or more courses in the previous year). Optimised standard therapy is defined as a full trial of and, if tolerated, documented compliance with high-dose ICS, LABAs, LTRAs, theophyllines, oral corticosteroids, and smoking cessation if clinically appropriate.

NICE TA479 recommends reslizumab as an add-on for treating severe eosinophilic asthma that is inadequately controlled in adults despite maintenance therapy with high-dose ICS plus another drug, only if the blood eosinophil count has been recorded as 400 cells per microlitre or more with 3 or more severe asthma exacerbations needing systemic corticosteroids in the past 12 months.

NICE TA565 and NICE TA671 recommend benralizumab and mepolizumab in adults as add-ons for treating severe refractory eosinophilic asthma, only if:

- the blood eosinophil count has been recorded as 300 cells per microlitre or more with 4 or more exacerbations needing systemic corticosteroids in the previous 12 months, or the person has had continuous oral corticosteroids of at least the equivalent of prednisolone 5 mg per day over the previous 6 months, or

- the blood eosinophil count has been recorded as 400 cells per microlitre or more with 3 or more exacerbations needing systemic corticosteroids in the past 12 months.

The technology

Tezepelumab (brand name unknown, AstraZeneca) is a monoclonal antibody against thymic stromal lymphopoietin (TLSP). Blocking TLSP may prevent the release of pro-inflammatory cytokines by immune cells, preventing asthma exacerbations and improving disease control. Tezepelumab is administered subcutaneously in addition to best standard asthma care.

Tezepelumab does not currently have a marketing authorisation in the UK for treating severe asthma. It has been studied in clinical trials compared with placebo in people with severe asthma that is inadequately controlled by medium- or high-dose ICS plus at least 1 other maintenance treatment.

Intervention(s)	Tezepelumab as an add-on to standard therapy
Population(s)	People with severe asthma that is inadequately controlled by standard therapy
Comparators	For people for whom biologics are indicated or suitable according to NICE guidance, in addition to standard therapy: • Reslizumab • Benralizumab • Mepolizumab • Omalizumab • Dupilumab (subject to ongoing NICE appraisal) For people for whom currently available biologics are not indicated or suitable: • Optimised standard therapy without biologics
Outcomes	The outcome measures to be considered include: • asthma control • incidence of clinically significant exacerbations, including those which require unscheduled contact with healthcare professionals or hospitalisation • use of oral corticosteroids

	• patient and clinician evaluation of response • lung function • mortality • time to discontinuation • 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	If the evidence allows, the following subgroups will be considered: • baseline eosinophil levels • people who require maintenance oral corticosteroid treatment • people who require frequent oral corticosteroid treatment. The availability and cost of biosimilar and generic 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:** 'Mepolizumab for treating severe eosinophilic asthma' (2021). NICE Technology Appraisal 671. Review date 2024 'Benralizumab for treating severe eosinophilic asthma'

	(2019). NICE Technology Appraisal 565. Review date 2022 'Reslizumab for treating severe eosinophilic asthma' (2017). NICE Technology Appraisal 479. Review date 2020 'Omalizumab for treating severe persistent allergic asthma' (2013). NICE Technology Appraisal 278. Guidance on static list 'Inhaled corticosteroids for the treatment of chronic asthma in adults and in children aged 12 years and over' (2008). NICE Technology Appraisal 138. Guidance on static list 'Inhaler devices for routine treatment of chronic asthma in older children (aged 5–15 years)' (2002). NICE Technology Appraisal 38. Guidance on static list **Appraisals in development (including suspended appraisals):** 'Dupilumab for treating severe asthma' NICE technology appraisals guidance [ID1213]. Publication date to be confirmed. **Related Guidelines:** 'Asthma: diagnosis, monitoring and chronic asthma management' (2017, updated 2020). NICE guideline 80 'COVID-19 rapid guideline: severe asthma' (2020). NICE guideline 166 **Related Interventional Procedures:** 'Bronchial thermoplasty for severe asthma' (2018). NICE interventional procedures guidance 635. **Related Quality Standards:** 'Asthma' (2013, updated 2018). NICE quality standard 25 **Related NICE Pathways:** Asthma (2020) 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) Department of Health and Social Care, NHS Outcomes Framework 2016-2017: Domains 1, 2 and 3. https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017 NHS England (2019) PSS8 Severe Asthma Specialised Care Review PSS CQUIN Indicator NHS England (2019) Specialised Respiratory Services (adult) – Severe Asthma. Reference 170002/S

Questions for consultation

Which treatments are considered to be established clinical practice in the NHS for treating severe asthma that is inadequately controlled by standard therapy?

Have all relevant comparators for tezepelumab been included in the scope? In particular:

- Is omalizumab a relevant comparator?
- Is bronchial thermoplasty a relevant comparator?

Which other treatments for severe asthma will tezepelumab be used in combination with?

Are the outcomes listed appropriate?

Are the subgroups suggested in 'other considerations appropriate? Are there any other subgroups of people in whom tezepelumab is expected to be more clinically effective and cost effective or other groups that should be examined separately?

Where do you consider tezepelumab will fit into the existing NICE pathway, asthma?

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. Please let us know if you think that the proposed remit and scope may need changing in order to meet these aims. In particular, please tell us if the proposed remit and scope:

- could exclude from full consideration any people protected by the equality legislation who fall within the patient population for which tezepelumab will be licensed;

- could lead to recommendations that have a different impact on people protected by the equality legislation than on the wider population, e.g. by making it more difficult in practice for a specific group to access the technology;

- could have any adverse impact on people with a particular disability or disabilities.

Please tell us what evidence should be obtained to enable the Committee to identify and consider such impacts.

Do you consider tezepelumab to be innovative in its potential to make a significant and substantial impact on health-related benefits and how it might improve the way that current need is met (is this a 'step-change' in the management of the condition)?

Do you consider that the use of tezepelumab can result in any potential significant and substantial health-related benefits that are unlikely to be included in the QALY calculation?

Please identify the nature of the data which you understand to be available to enable the Appraisal Committee to take account of these benefits.

To help NICE prioritise topics for additional adoption support, do you consider that there will be any barriers to adoption of this technology into practice? If yes, please describe briefly.

NICE intends to appraise this technology through its Single Technology Appraisal (STA) Process. We welcome comments on the appropriateness of appraising this topic through this process. (Information on the Institute's Technology Appraisal processes is available at http://www.nice.org.uk/article/pmg19/chapter/1-Introduction).

NICE has published an addendum to its guide to the methods of technology appraisal (available at https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/NICE-technology-appraisals/methods-guide-addendum-cost-comparison.pdf), which states the methods to be used where a cost comparison case is made.

- Would it be appropriate to use the cost comparison methodology for this topic?
- Is the new technology likely to be similar in its clinical efficacy and resource use to any of the comparators?
- Is the primary outcome that was measured in the trial or used to drive the model for the comparator(s) still clinically relevant?
- Is there any substantial new evidence for the comparator technology/ies that has not been considered? Are there any important ongoing trials reporting in the next year?

References

1. Asthma UK. What is severe asthma? Accessed February 2021
2. Asthma UK. Asthma facts and statistics. Accessed February 2021
3. Global Initiative for Asthma (2019) Global strategy for asthma management and prevention. Accessed February 2021