NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Reslizumab for treating asthma with elevated blood eosinophils inadequately controlled by inhaled corticosteroids [ID872]

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of reslizumab within its marketing authorisation for treating asthma with elevated blood eosinophils inadequately controlled by inhaled corticosteroids.

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. Severe eosinophilic asthma is a subset of the condition that is associated with blood and sputum elevated eosinophils and recurrent exacerbations. Eosinophilic nasal polyps may also be present. Eosinophils are thought to play a major role in airway inflammation in asthma.

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 1242 deaths from asthma in the UK in 2012.[1] Estimates suggest that around 5.4 million people in England and Wales currently receive treatment for asthma.

Current British guidelines from the British Thoracic Society (BTS) and Scottish Intercollegiate Guidelines Network (SIGN) recommend a stepwise approach to treatment in adults. Control is maintained by stepping up treatment as necessary and stepping down when control is good. The guideline steps are summarised as follows:

- Step 1. Inhaled short-acting beta-2 agonist as required.
- Step 2. Add inhaled corticosteroid (200–800 micrograms per day).
- Step 3. Add an inhaled long-acting beta-2 agonist. If control remains inadequate, increase the dose of the inhaled corticosteroid to 800 micrograms per day. If there is no response to the inhaled long-acting beta-2 agonist, stop this drug and increasing the inhaled corticosteroid dose 800 micrograms per day. If control is still inadequate, try a leukotriene receptor antagonist or slow-release theophylline.

- Step 4: Consider increasing the dose of inhaled corticosteroid up to 2000 micrograms per day. Consider adding a fourth drug (for example, a leukotriene receptor antagonist, slow-release theophylline or a beta-2 agonist tablet).

- Step 5: Use daily steroid tablets at the lowest dose providing adequate control. Maintain high-dose inhaled corticosteroid at 2000 micrograms per day. Consider other treatments to minimise the use of steroid tablets. Refer patients to specialist care.

NICE technology appraisal guidance 278 recommends omalizumab as an option for treating severe persistent allergic IgE-mediated asthma as add-on therapy to optimised standard therapy in people aged 6 years and older who need continuous or frequent treatment with oral corticosteroids (defined as 4 or more courses in the previous year), and only if the manufacturer makes omalizumab available with the discount agreed in the patient access scheme. Optimised standard therapy is defined in the recommendations as a full trial of and, if tolerated, documented compliance with inhaled high-dose corticosteroids, long-acting beta2 agonists, leukotriene receptor antagonists, theophyllines, oral corticosteroids, and smoking cessation if clinically appropriate.

The technology

Reslizumab (Cinquil, Teva Pharmaceuticals) is an anti-interleukin-5 monoclonal antibody. By reducing the effects of interleukin-5, reslizumab causes a reduction in circulating eosinophils, a type of white blood cell involved in allergic response and tissue inflammation. Reslizumab is administered intravenously in addition to best standard asthma care.

Reslizumab does not currently have a marketing authorisation in the UK for treating asthma with elevated blood eosinophils inadequately controlled by inhaled corticosteroids. Reslizumab has been studied in clinical trials in comparison with placebo in people aged 12–75 years with asthma with elevated blood eosinophils inadequately controlled by inhaled corticosteroids.

Intervention(s)	Reslizumab (in addition to best standard care)
Population(s)	Adults with asthma with elevated blood eosinophils inadequately controlled by inhaled corticosteroids
Comparators	• Best standard care without reslizumab For people with severe persistent allergic IgE-mediated asthma with elevated blood eosinophils: • Omalizumab

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. 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 patient access schemes for the intervention or comparator technologies should be taken into account.

Other considerations	Best standard care for this population is considered to be step 4 and/or step 5 in the stepwise approach to treatment from the SIGN/BTS guideline (for example, high-dose inhaled corticosteroids and oral corticosteroids). If the evidence allows, the following subgroups will be considered: • People who require maintenance oral corticosteroid treatment • People who require frequent oral corticosteroid treatment. 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:** 'Omalizumab for treating severe persistent allergic asthma (review of technology appraisal guidance 133 and 201)' (2013) NICE technology appraisal 278. Review proposal date currently being reviewed. '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. **Appraisals in development:** 'Mepolizumab for treating severe eosinophilic asthma' NICE technology appraisal guidance [ID798]. Publication expected July 2016. **Guidelines in development:** 'Asthma – diagnosis and monitoring'. Publication date to be confirmed. 'Asthma management'. Publication expected June 2017. **Related Interventional Procedures:** 'Bronchial thermoplasty for severe asthma' (2012). NICE interventional procedures guidance 419, **Related Quality Standards:** 'Asthma' (2013) NICE quality standard 25.

	Related NICE Pathways: Asthma (2014). http://pathways.nice.org.uk/pathways/asthma
Related National Policy	NHS England (January 2014) Adult Highly specialised respiratory services. Manual for prescribed specialised services 2013/14. NHS England (2014) Internal Medicine's Group: A14. Specialised Respiratory. Department of Health (2014) The NHS Outcomes Framework 2015/16 Domains 1, 2, 3 and 4

References

1. Royal College of Physicians (2014) National review of asthma deaths. Accessed April 2015