Healthcare Improvement Scotland | SMC Advice on new medicines

Advice document
SMC2765

mepolizumab solution for injection in pre-filled pen & pre-filled syringe (Nucala®)

GlaxoSmithKline UK Ltd

04 April 2025

The Scottish Medicines Consortium (SMC) has completed its assessment of the above product and, following review by the SMC executive, advises NHS Boards and Area Drug and Therapeutics Committees (ADTCs) on its use in NHSScotland. The advice is summarised as follows:

ADVICE: following an abbreviated submission

mepolizumab (Nucala®) is accepted for restricted use within NHSScotland.

Indication under review: as an add-on treatment for severe refractory eosinophilic asthma in adults, adolescents and children aged 6 years and older.

SMC restriction: patients who have eosinophils of at least 150 cells per microlitre (0.15×10^9/L) at initiation of treatment and have had at least three asthma exacerbations in the preceding year or are receiving maintenance treatment with oral corticosteroids.

Mepolizumab offers an additional treatment choice in the therapeutic class of monoclonal antibodies.

This advice applies only in the context of an approved NHSScotland Patient Access Scheme (PAS) arrangement delivering the cost-effectiveness results upon which the decision was based, or a PAS/ list price that is equivalent or lower.

This advice supersedes SMC advice for mepolizumab as an add-on treatment for severe refractory eosinophilic asthma in adult patients (SMC 1149/16) and adolescents and children aged 6 years or older (SMC2139).

Chair
Scottish Medicines Consortium

1. Clinical Context

1.1. Medicine background

Mepolizumab is a humanised monoclonal antibody that inhibits binding of interleukin-5 (IL-5) to the IL-5 receptor expressed on the surface of eosinophils. IL-5 is a key cytokine involved in the regulation of blood and tissue eosinophils and its inhibition reduces production and survival of eosinophils.[1] It is licensed as an add-on treatment for severe refractory eosinophilic asthma in adults, adolescents and children aged 6 years and older.

Mepolizumab was previously accepted for restricted use by SMC in adult patients (1149/16) and in adolescents and children aged 6 years and older (SMC2139), restricted for use in patients who have eosinophils of at least 150 cells per microlitre (0.15×10^9/L) at initiation of treatment and have had at least four asthma exacerbations in the preceding year or are receiving maintenance treatment with oral corticosteroids. This submission extends use of mepolizumab to patients who have eosinophils of at least 150 cells per microlitre (0.15×10^9/L) at initiation of treatment and have had at least three asthma exacerbations in the preceding year or are receiving maintenance treatment with oral corticosteroids.

The recommended dose of mepolizumab for severe eosinophilic asthma is 100 mg (for adults and adolescents aged ≥12 years) or 40 mg (for children aged 6 to 11 years old) administered subcutaneously once every 4 weeks. See the Summary of Product Characteristics (SPC) for details.[1]

1.2. Relevant comparator(s)

The submitting company considered that tezepelumab is the relevant comparator for this submission. Tezepelumab is a human monoclonal antibody that is directed against thymic stromal lymphopoietin (TSLP), preventing its interaction with the TSLP receptor.[2] It is accepted for restricted use within NHSScotland as an add-on maintenance treatment in adults and adolescents 12 years and older with severe asthma who are inadequately controlled despite high dose inhaled corticosteroids plus another medicinal product for maintenance treatment. It is restricted for use in adults and adolescents 12 years and older who either (i) experienced at least three exacerbations in the previous year and are not receiving maintenance treatment with oral corticosteroids or (ii) have blood eosinophils ≥150 cells/microlitre and are receiving maintenance treatment with oral corticosteroids (SMC2541).

2. Summary of Clinical Evidence

2.1. Evidence to support comparable efficacy with relevant comparators

Three randomised, double-blind, placebo-controlled studies have evaluated the efficacy and safety of mepolizumab for this indication: two phase III studies (MENSA and MUSCA) and one phase II study (DREAM). All studies included adults and adolescents with severe eosinophilic asthma, who had ≥2 exacerbations requiring treatment in the previous year despite regular treatment with high dose inhaled corticosteroids and additional controller medicine(s).

Patients had a forced expiratory volume in 1 second (FEV1) <80% of the predicted value (for adults) or <90% of the predicted value (for adolescents <18 years), or in the MENSA study only, a forced vital capacity (FVC) ratio <0.8. All studies except DREAM, which was a dose-ranging study that used intravenous mepolizumab, assessed the licensed mepolizumab regimen for adults and adolescents.[1, 3-6]

The MENSA and DREAM studies demonstrated that mepolizumab significantly reduced asthma exacerbation rates compared with placebo. In the MUSCA study, mepolizumab was associated with significant improvements in health-related quality of life, compared with placebo.[1, 3-6]

In the absence of direct evidence versus tezepelumab, the submitting company presented evidence from two published indirect treatment comparisons (ITCs) in the overall study populations and a subgroup of patients with eosinophils ≥150 cells per microlitre. Both used a Bayesian network meta-analysis (NMA) to compare biological treatments licensed for patients aged ≥12 years with severe uncontrolled asthma. One ITC also used an anchored simulated treatment comparison (STC). Eight and sixteen studies were included in each ITC respectively. Both ITCs assessed the annualised exacerbation rate, with a total of five and two outcomes respectively. The submitting company claimed that it was not possible to conduct an ITC in the subgroup of patients who had ≥3 asthma exacerbations in the previous year. Two mepolizumab studies (MENSA and MUSCA) and the key tezepelumab study (NAVIGATOR) were included in both ITCs. Overall, the results from the overall study populations and subgroup with eosinophils ≥150 cells per microlitre suggested that there were no significant differences in efficacy between treatments.[7, 8]

3. Company Estimate of Eligible Population, Uptake and Budget Impact

3.1. Company's number of patients assumed to be eligible for treatment*

The company estimated that there would be 118 patients eligible for treatment with mepolizumab in year 1, rising to 224 patients in year 5.

3.2. Budget Impact assumption

Medicines reviewed under the abbreviated submissions process are estimated to have a limited net budget impact and resource allocation across NHS Scotland.

References

1. GlaxoSmithKline UK Ltd. Mepolizumab solution for injection (Nucala®) Summary of product characteristics. Electronic Medicines Compendium www.medicines.org.uk Last updated 09 October 2024.
2. AstraZeneca UK Ltd. Tezepelumab solution for injection (Tezspire®) Summary of product characteristics. Electronic Medicines Compendium www.medicines.org.uk Last updated 11 December 2023.
3. European Medicines Agency (EMA). European Public Assessment Report. Mepolizumab (Nucala®). 24/09/2015, EMA/CHMP/672504/2015 rev. 1. www.ema.europa.eu
4. Ortega HG, Liu MC, Pavord ID, Brusselle GG, FitzGerald JM, Chetta A*, et al.* Mepolizumab treatment in patients with severe eosinophilic asthma. New England journal of medicine. 2014;371(13):1198-207.
5. Pavord ID, Korn S, Howarth P, Bleecker ER, Buhl R, Keene ON*, et al.* Mepolizumab for severe eosinophilic asthma (DREAM): a multicentre, double-blind, placebo-controlled trial. The Lancet. 2012;380(9842):651-9.
6. Chupp GL, Bradford ES, Albers FC, Bratton DJ, Wang-Jairaj J, Nelsen LM*, et al.* Efficacy of mepolizumab add-on therapy on health-related quality of life and markers of asthma control in severe eosinophilic asthma (MUSCA): a randomised, double-blind, placebo-controlled, parallel-group, multicentre, phase 3b trial. The Lancet Respiratory Medicine. 2017;5(5):390-400.
7. Ando K, Fukuda Y, Tanaka A, Sagara H. Comparative Efficacy and Safety of Tezepelumab and Other Biologics in Patients with Inadequately Controlled Asthma According to Thresholds of Type 2 Inflammatory Biomarkers: A Systematic Review and Network Meta-Analysis. Cells. 2022;11(5). Epub 20220226. 10.3390/cells11050819
8. Menzies-Gow A, Steenkamp J, Singh S, Erhardt W, Rowell J, Rane P*, et al.* Tezepelumab compared with other biologics for the treatment of severe asthma: a systematic review and indirect treatment comparison. Journal of Medical Economics. 2022;25(1):679-90.

This assessment is based on data submitted by the applicant company up to and including 26 March 2025.

Medicine prices are those available at the time the papers were issued to SMC for consideration. SMC is aware that for some hospital-only products national or local contracts may be in place for comparator products that can significantly reduce the acquisition cost to Health Boards. These contract prices are commercial in confidence and cannot be put in the public domain, including via the SMC Detailed Advice Document. Area Drug and Therapeutics Committees and NHS Boards are therefore asked to consider contract pricing when reviewing advice on medicines accepted by SMC.

Patient access schemes: A patient access scheme is a scheme proposed by a pharmaceutical company in order to improve the cost-effectiveness of a medicine and enable patients to receive access to cost-effective innovative medicines. A Patient Access Scheme Assessment Group (PASAG), established under the auspices of NHS National Services Scotland reviews and

advises NHSScotland on the feasibility of proposed schemes for implementation. The PASAG operates separately from SMC in order to maintain the integrity and independence of the assessment process of the SMC. When SMC accepts a medicine for use in NHSScotland on the basis of a patient access scheme that has been considered feasible by PASAG, a set of guidance notes on the operation of the scheme will be circulated to Area Drug and Therapeutics Committees and NHS Boards prior to publication of SMC advice.

Advice context:

No part of this advice may be used without the whole of the advice being quoted in full.

This advice is based on the estimation of at least similar comparative efficacy and limited net budget impact compared with other medicinal products, within the same therapeutic class, that are in routine use within NHSScotland.

This advice represents the view of the Scottish Medicines Consortium and was arrived at after evaluation of the evidence submitted by the company. It is provided to inform the considerations of Area Drug & Therapeutics Committees and NHS Boards in Scotland in determining medicines for local use or local formulary inclusion. This advice does not override the individual responsibility of health professionals to make decisions in the exercise of their clinical judgement in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.