NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

SQ HDM SLIT for treating allergic rhinitis and allergic asthma caused by house dust mites ID3961

Draft scope

Draft remit/appraisal objective

To appraise the clinical and cost effectiveness of standardised quality house dust mite sublingual immunotherapy (SQ HDM SLIT) within its marketing authorisation for treating allergic rhinitis and/or allergic asthma associated with allergic rhinitis caused by house dust mites.

Background

House dust mites (HDM) are microscopic organisms found in the dust that builds up in the house. House dust mite allergy is an IgE-mediated hypersensitive reaction to proteins in the droppings of dust mites. These proteins can act as allergens (cause an allergic reaction) in the upper or lower respiratory tract causing the symptoms of rhinitis and asthma[1].

Allergic rhinitis

Allergic rhinitis is an inflammation of the inside of nose caused by an allergen. Depending on the nature of the allergen, allergic rhinitis has traditionally been categorised as either seasonal allergic rhinitis (e.g., induced by pollen) or perennial allergic rhinitis (e.g., induced by animals or dust mites). The disease can further be categorised as either ‘mild’, ‘moderate’ or ’severe’, depending on the severity of symptoms and impact on quality of life (QoL). In the United Kingdom, the most common allergic trigger for perennial allergic rhinitis is the house dust mite[2].

The prevalence of house dust mite activated allergic rhinitis is estimated at around 5 million people in England[1], of these around 1 million (20%) people have house dust mite activated allergic rhinitis which is not currently adequately controlled[3]. Diagnosis involves carefully taken history in combination with sensitization to HDM allergens. Four out of 5 people with an allergy to HDM are also allergic to other allergens in the air such as pollens or flakes of skin from certain animals)[1]. Allergic rhinitis commonly occurs with allergic conjunctivitis (inflammation of the thin layer of skin on the inside of the eye causingred, itchy eyes) and is known as rhinoconjunctivitis. Allergic rhinitis can also occur with rhinosinusitis and asthma, and can sometimes lead to complications such as nasal polyps, sinusitis or middle ear infections[4].

There is no NICE guidance or national guidelines for treating allergic rhinitis caused by house dust mites. Initial treatment may involve allergy avoidance[4]. This can be followed by pharmacotherapy aimed at symptom control (mainly

antihistamines and topical nasal corticosteroids). For people with more severe allergic rhinitis, which does not respond to usual therapy, specific desensitisation to the house dust mite allergens with immunotherapy may be considered[4].

Allergic asthma

Asthma is a long-term inflammatory disorder of the airways characterised by signs or symptoms including breathlessness, chest tightness, wheezing, sputum production, airflow obstruction, hyper-responsiveness of airways and cough (particularly at night). Symptoms vary in frequency and severity, from intermittent and mild, to frequent and severe. Allergic and non-allergic forms of asthma exist. Allergic asthma results from response to environmental allergens such as house dust mites, pollen and moulds.

There were 1,410 deaths from asthma in the UK in 2016[5]. Estimates suggest that around 4.8 million people in England and Wales currently receive treatment for asthma. Around 43% of people diagnosed with asthma have asthma that is not well controlled[6].

NICE guideline NG80: asthma: diagnosis, monitoring and chronic asthma management recommends a stepwise approach for treating asthma. Control is maintained by stepping up treatment as necessary and stepping down when control is good. Treatments include inhaled short or long-acting beta-2 agonist, low or dose inhaled corticosteroids, and leukotriene antagonists. If asthma is uncontrolled on these regimens, consideration should be given to referring patients for specialist care where they may also receive daily steroid tablets and other treatments such as omalizumab (NICE TA278) for allergic IgE-mediated asthma to minimise the use of steroid tablets. NICE TA278 recommends omalizumab for treating severe persistent confirmed allergic IgE-mediated asthma 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).

NICE guideline 80 recommends that skin prick tests for aeroallergens or specific IgE tests are carried out to identify triggers after formal diagnosis of asthma.

The technology

Standardised quality house dust mite sublingual immunotherapy (SQ HDM SLIT) (Acarizax, ALK-Abelló) contains extracts from the house dust mite species *Dermaophagoides pteronyssinus* and *Dermatophagoides farina*. It is an allergy immunotherapy that causes an increase in house dust mite specific immunoglobulin and a systemic antibody response that can reduce the amount of IgE that binds with house dust mite allergens. It is administered sublingually.

SQ HDM SLIT has a UK marketing authorisation and is indicated for:

- adults (18-65 years) diagnosed by clinical history and a positive test of house dust mite sensitisation (skin prick test and/or specific IgE) with at least one of the following conditions:
    - persistent moderate to severe house dust mite allergic rhinitis despite use of symptom-relieving medication
    - house dust mite allergic asthma not well controlled by inhaled corticosteroids and associated with mild to severe house dust mite allergic rhinitis. Asthma status should be carefully evaluated before the initiation of treatment.
- adolescents (12-17 years) diagnosed by clinical history and a positive test of house dust mite sensitisation (skin prick test and/or specific IgE) with persistent moderate to severe house dust mite allergic rhinitis despite use of symptom-relieving medication.

Intervention(s)	SQ HDM SLIT as an add-on to standard therapy
Population(s)	• People aged 12 to 17 years with house dust mite sensitisation with persistent moderate to severe house dust mite allergic rhinitis despite use of symptom-relieving medication • People aged 18 to 65 years with house dust mite sensitisation with moderate to severe allergic rhinitis despite use of symptom relieving medication and/or allergic asthma not well controlled by inhaled corticosteroids and associated with mild to severe allergic rhinitis.
Comparators	People aged 12 to 17 years with house dust mite allergic rhinitis not responding to symptom relieving medication: • Established clinical management without SQ HDM SLIT People aged 18-65 moderate to severe allergic rhinitis despite use of symptom relieving medication and/or allergic asthma not well controlled by inhaled corticosteroids and associated with mild to severe allergic rhinitis: • Established clinical management without SQ HDM SLIT • Omalizumab (for people with allergic asthma)

Outcomes	The outcome measures to be considered include: For house dust mite sensitisation with allergic rhinitis: • severity of rhinitis symptoms • immunological response to treatment • complications of allergic rhinitis (such as nasal polyps, sinusitis or middle ear infections) • rhinitis medication use • adverse effects of treatment • health-related quality of life • overall survival For house dust mite sensitisation with allergic asthma: • use of inhaled corticosteroid (ICS) • use of rescue medication • time to first moderate or severe asthma exacerbation after ICS reduction • reduction of the risk of an asthma exacerbation • lung function • adverse effects of treatment • health-related quality of life • overall survival
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 use of SQ HDL SLIT is conditional with a positive test for house dust mite sensitisation (skin prick test and/or specific IgE). The economic modelling should include the cost associated with diagnostic testing for

	the house dust mite sensitisation in people with allergic rhinitis who would not otherwise have been tested. A sensitivity analysis should be provided without the cost of the diagnostic test. See section 5.9 of 'the Guide to the Methods of Technology Appraisals'.
Other considerations	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. If the evidence allows subgroups will be considered by disease severity.
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. 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. Related Guidelines: Asthma: diagnosis, monitoring and chronic asthma management (2017). NICE guideline 80. Last updated March 2021. Related Interventional Procedures: Bronchial thermoplasty for severe asthma (2012). NICE interventional procedures guidance 419. Intranasal phototherapy for allergic rhinitis (2018) NICE interventional procedures guidance 616 Related Diagnostics Guidance: ImmunoCAP ISAC 112 and Microtest for multiplex allergen testing (2016) NICE diagnostics guidance 24 Related Clinical Knowledge Summaries: Allergic rhinitis (2018) NICE Clinical Knowledge Summary

	Related Quality Standards: Asthma (2013, updated 2018) NICE quality standard 25. Related NICE Pathways: Asthma (2014, last updated January 2017) 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 4 – Adult highly specialist respiratory services NHS England (2018/2019) NHS manual for prescribed specialist services (2018/2019). Chapter 59 Highly specialist allergy services (adults and children) Department of Health and Social Care, NHS Outcomes Framework 2016-2017: Domains 2 and 4. https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017

Questions for consultation

Is a test for house dust mite sensitisation (for example, skin prick test and/or specific IgE) routinely undertaken for all people with house dust mite induced allergic rhinitis and allergic asthma associated with house dust mite rhinitis?

- When is the test undertaken in clinical practice?
- Which test is most commonly used?

Have all relevant comparators for SQ HDM SLIT been included in the scope?

- Which treatments are considered to be established clinical practice in the NHS for persistent moderate to severe house dust mite induced allergic rhinitis despite use of symptom-relieving medication? In particular:
  - Do treatment options differ for adults compared with adolescents (aged 12 to 17 years)?
  - What immunotherapies, if any, are currently used? Is SQ HDM SLIT already used in the NHS?
  - Would SQ HDM SLIT be used as an add-on to standard therapy?

- Which treatments are considered to be established clinical practice in the NHS for house dust mite induced allergic asthma associated with house dust mite rhinitis not well controlled by inhaled corticosteroids?
  - Would SQ HDM SLIT be used as an add-on to standard therapy?

- Does treatment of house dust mite induced allergic rhinitis or allergic asthma differ according to severity of symptoms (for example, mild, moderate, severe)?
    - How is disease severity assessed in these populations?

Are the outcomes listed appropriate?

Are there any subgroups of people in whom SQ HDM SLIT is expected to be more clinically effective and cost effective or other groups that should be examined separately?

Where do you consider SQ HDM SLIT 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 SQ HDM SLIT is 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 SQ HDM SLIT 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 SQ HDM SLIT 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).

References

1. Demoly P, Emminger W, Rhem D et al. (2015) Effective treatment of house dust mite-induced allergic rhinitis with 2 doses of the SQ HDM SLIT-tablet: results form a randomized double-blind, placebo-controlled phase III trial. Journal of Allergy & Clinical Immunology doi: 10.1016

2. Bauchau, V, Durham, SR Prevalence and rate of diagnosis of allergic rhinitis in Europe. European Respiratory Journal (2004) 24[5] 758-64

3. NIHR Horizon Scanning Centre. (2013) House dust mite allergen immunotherapy tablet (Mitizax) for house dust mite allergy-induced rhinitis and conjunctivitis – third line. Accessed November 2021.

4. NHS Choices Allergic rhinitis. Accessed November 2021.

5. Asthma UK (2017). Accessed November 2021.

6. Menzies-Gow A. & Chiu G. Perceptions of asthma control in the United Kingdom: a cross-sectional study comparing patient and healthcare professionals' perceptions of asthma control with validated ACT scores. (2017) Primary Care Respiratory medicine 27: 48.