NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Evaluation

Sotatercept for treating pulmonary arterial hypertension

Final scope

Remit/evaluation objective

To appraise the clinical and cost effectiveness of sotatercept within its marketing authorisation for treating pulmonary arterial hypertension.

Background

Pulmonary hypertension is characterised by high blood pressure in the pulmonary arteries, the blood vessels that supply the lungs. Pulmonary arterial hypertension (PAH) is a rare, severe and progressive form of pulmonary hypertension caused by changes in the smaller branches of the pulmonary arteries, restricting blood flow through the lungs. The condition causes the walls of the pulmonary arteries to become thick and stiff, narrowing the space for blood to pass through and increasing blood pressure. As the pulmonary arteries are less able to stretch, the heart has to work harder to pump blood to the lungs, which causes damage to the heart, and makes it less efficient at pumping blood around the body and getting oxygen to the muscles. People with PAH experience increasingly debilitating symptoms which severely impact day to day living and quality of life, including breathlessness during exercise and sometimes during rest, extreme tiredness, weakness and chest pain. PAH is a progressive illness, meaning that people with PAH are at increased risk of frequent hospitalisations and other illnesses, such as pneumonia, and ultimately, right heart failure leading to premature death.

Data from the most recent National Audit of Pulmonary Hypertension (2021-2022) demonstrate that there are currently 4,269 patients living with PAH in the UK, with 568 new diagnoses each year, equating to a prevalence and incidence of 64 and 8.5 per 1,000,000 respectively.[1]

There are a range of treatments that can help to improve symptoms and manage PAH. These can be broadly split into 3 categories:

- supportive treatments for symptom control, including oxygen therapy and diuretic medication (such as furosemide, bumetanide, and metolazone)
- targeted treatments intended to slow disease progression and potentially reverse damage to the heart and lungs. These include calcium channel blockers (such as nifedipine, diltiazem, nicardipine, and amlodipine), endothelin receptor antagonists (such as ambrisentan, bosentan, and macitentan), phosphodiesterase 5 inhibitors (such as sildenafil and tadalafil), prostaglandins (such as epoprostenol and selexipag), prostanoids (such as intravenous/inhaled iloprost and treprostinil) and soluble guanylate cyclase stimulators (such as riociguat)
- surgical interventions, including atrial septostomy (hole made between the left and right atria of the heart to reduce pressure in the right side of the heart, improving blood flow to the lungs), and transplant surgery (of heart and lungs or lungs alone).

A new NHS treatment algorithm and updated national policy for targeted therapies are expected in the near future. It is anticipated that these will be closely aligned to the 2022 European Society of Cardiology & European Respiratory Society Guidelines for PAH. In line with these guidelines, dual oral therapy comprising a phosphodiesterase 5 inhibitor with an endothelin receptor antagonist is now considered as first line standard of care for PAH. Triple therapy with an additional agent, such as a prostaglandin or prostanoid, may be considered at second line if standard of care is not sufficient to control the condition.

The technology

Sotatercept (Winrevair, MSD) does not currently have a marketing authorisation in the UK for treating PAH. Sotatercept in combination with background therapy has been studied in clinical trials where it has been compared with placebo in combination with background therapy in people with PAH.

Intervention(s)	Sotatercept in combination with established clinical management
Population(s)	Adults with pulmonary arterial hypertension
Comparators	Established clinical management without sotatercept (given in combination as dual or triple therapy): • endothelin receptor antagonists: ambrisentan, bosentan, and macitentan • phosphodiesterase 5 inhibitors: sildenafil and tadalafil • prostaglandins/prostanoids: epoprostenol, selexipag, intravenous/inhaled iloprost, and treprostinil • soluble guanylate cyclase stimulators: riociguat.
Subgroups	If the evidence allows, the following subgroups will be considered: • WHO functional class 2 or 3 • European Society of Cardiology (ESC)/European Respiratory Society (ERS) 4-strata risk status • background PAH therapy (dual or triple therapy) • clinical subgroups within group 1 PAH - idiopathic - heritable - associated with drugs/toxins - associated with connective tissue disease - associated with congenital heart disease.

Outcomes	The outcome measures to be considered include: • time to clinical worsening • hospitalisations • overall survival • transplant-free survival • exercise capacity (for example 6-minute walking distance) • haemodynamic assessment (e.g. cardiac index, cardiac output, right atrial pressure, pulmonary arterial pressure and pulmonary vascular resistance) • 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 and cost of biosimilar and generic products should be taken into account.
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.
Related National Policy	NHS England (2015) Commissioning Policy: Targeted Therapies for use in Pulmonary Hypertension in Adults NHS England (2018) Clinical Commissioning Policy: Selexipag for treating pulmonary arterial hypertension (adults) NHS England (2017) Clinical Commissioning Policy: riociguat for pulmonary arterial hypertension NHS England (2013) Clinical Commissioning Policy: Targeted Therapies for Pulmonary Hypertension Functional Class II The NHS Long Term Plan, 2019. NHS Long Term Plan NHS England (2018/2019) NHS manual for prescribed specialist services (2018/2019) Chapter 2 and 3.

References

1. NHS. National Audit of Pulmonary Hypertension Great Britain, 2021-22. 2023. Available from: https://files.digital.nhs.uk/36/B8B717/NAPH%2013AR%20-%20Main%20Report%20v1.0.pdf (Accessed December 2024)