NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Single Technology Appraisal

Faricimab for treating diabetic macular oedema

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of faricimab within its marketing authorisation for treating diabetic macular oedema.

Background

Diabetic macular oedema (DMO) is a common complication associated with diabetic retinopathy, and is the most common cause of visual impairment in diabetes mellitus. It occurs as a result of changes in retinal blood vessels in people with diabetes. Disruption of the blood–retinal barrier allows fluid to leak from blood vessels in the central part of the retina (the macula), leading to fluid accumulation and thickening of the macula. This can lead to severe visual impairment in the affected eye.

DMO can be classed as focal, diffuse or ischaemic (although no universal definition has been agreed). The majority of vision loss occurs when DMO involves the centre of the macula. This is known as clinically significant macular oedema (CSMO), and is regarded as the threshold for treatment.

More than 3.3 million people were diagnosed with diabetes in England in 2019[1], and the condition is more common in people of African-Caribbean and South Asian family origin than in those of European family origin. Approximately 7% of people with diabetes may have DMO in England, of whom 39% have CSMO[2]. The prevalence of DMO is related to the duration and severity of diabetes, and to numerous risk factors including age, pregnancy, smoking, hypertension, nephropathy, obesity and high cholesterol.

Good management of diabetes and other risk factors may delay the onset and progression of DMO. This includes diet and lifestyle modification, blood pressure control and pharmacological treatments. For DMO specifically, NICE technology appraisals TA274 and TA346 recommend ranibizumab and aflibercept as options for treating visual impairment due to DMO if the eye has a central retinal thickness (CRT) of 400 micrometres or more at the start of treatment. For eyes with a CRT of less than 400 micrometres, laser photocoagulation may be a treatment option. In addition, bevacizumab is used outside its marketing authorisation in some NHS centres.

NICE technology appraisal TA301 recommends fluocinolone acetonide intravitreal implants as an option for treating chronic DMO that is insufficiently responsive to available therapies (laser photocoagulation and therapies targeting the vascular endothelial growth factor [VEGF]) if the implant is to be used in an eye with an intraocular (pseudophakic) lens. For chronic DMO that does not respond to non-corticosteroid treatment, or when such treatment is unsuitable, TA349 recommends dexamethasone intravitreal implants if the implant is to be used in an eye with an intraocular lens.

The technology

Faricimab (brand name unknown, Roche) is a novel antibody targeting the growth factors VEGF-A and angiopoietin-2 (Ang-2). Faricimab is administered as an injection into the eye.

Faricimab does not currently have a marketing authorisation in the UK for diabetic macular oedema. It has been studied in clinical trials as monotherapy compared with aflibercept and with ranibizumab in adults with diabetic macular oedema.

Intervention(s)	Faricimab
Population(s)	People with visual impairment because of diabetic macular oedema
Comparators	• Laser photocoagulation alone The following technologies alone or in combination with laser photocoagulation: • Aflibercept • Bevacizumab (does not currently have a marketing authorisation in the UK for this indication) • Dexamethasone intravitreal implant • Fluocinolone acetonide intravitreal implant • Ranibizumab
Outcomes	The outcome measures to be considered include: • best corrected visual acuity (the affected eye) • best corrected visual acuity (both eyes) • central foveal subfield thickness • central retinal thickness • complete resolution of macular oedema • contrast sensitivity • disease severity • intraretinal and subretinal fluid • mortality • need for cataract surgery • 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. The availability of any managed access arrangement for the intervention will be taken into account. Cost effectiveness analysis should include consideration of the benefit in the best and worst seeing eye.
Other considerations	If the evidence allows the following subgroups will be considered. These include: • type of DMO (focal or diffuse, central involvement, ischaemic or non-ischaemic maculopathy) • duration of DMO • baseline visual acuity • baseline central retinal thickness • previous treatment history (including people who have received no prior treatment, and those who have received and/or whose disease is refractory to laser photocoagulation, ranibizumab or bevacizumab) • prior cataract surgery 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:** Fluocinolone acetonide intravitreal implant for treating chronic diabetic macular oedema in phakic eyes after an inadequate

	response to previous therapy (2019) NICE Technology Appraisal 613. Dexamethasone intravitreal implant for treating diabetic macular oedema (2015) NICE Technology Appraisal 349. Aflibercept for treating diabetic macular oedema (2015) NICE Technology Appraisal 346. Fluocinolone acetonide intravitreal implant for treating chronic diabetic macular oedema after an inadequate response to prior therapy (2013) NICE Technology Appraisal 301. Ranibizumab for treating diabetic macular oedema (2013) NICE Technology Appraisal 274. **Appraisals in development (including suspended appraisals):** Brolucizumab for treating diabetic macular oedema NICE technology appraisal guidance [ID3902] Publication date to be confirmed. **Related guidelines:** Type 2 diabetes in adults: management (2015; updated 2020). NICE guideline NG28 Type 1 diabetes in adults: diagnosis and management (2015; updated 2020). NICE guideline NG17 **Related NICE pathways:** Identifying and managing complications in adults with type 1 diabetes: eye disease (2021) NICE pathway Identifying and managing complications in adults with type 2 diabetes: eye disease (2021) 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 12 Adult specialist ophthalmology services. Department of Health and Social Care, NHS Outcomes Framework 2016-2017: Domain 2. https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017

References

1 Diabetes UK (2020) Diabetes prevalence 2019. Accessed February 2021.

2 Minassian DC, Owens DR, Reidy A. Prevalence of diabetic macular oedema and related health and social care resource use in England. British Journal of Ophthalmology 2012;96:345-349.