NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Dexamethasone intravitreal implant for treating diabetic macular oedema in people without a pseudophakic lens (part review of TA349)

Draft scope

Draft remit/appraisal objective

To appraise the clinical and cost effectiveness of dexamethasone intravitreal implant within its marketing authorisation for treating diabetic macular oedema in people without a pseudophakic lens.

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 3.5 million people have been diagnosed with diabetes in England and Wales (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 caused by 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. In NICE technology appraisal TA613, fluocinolone was not recommended for treating chronic diabetic macular oedema that is insufficiently responsive to available therapies in an eye with a natural lens (phakic eye)”

NICE technology appraisal TA349 recommends dexamethasone intravitreal implants as an option for treating DMO that is insufficiently responsive to available therapies if the implant is to be used in an eye with an intraocular (pseudophakic, or artificial) lens. There is new evidence supporting the clinical and cost effectiveness of

dexamethasone intravitreal implants for people with phakic (natural) lenses. Therefore, the decision was taken to part-review TA349 in an appraisal for people with phakic lenses.

The technology

Dexamethasone intravitreal implant (Ozurdex, AbbVie) contains a corticosteroid which suppresses inflammation and thereby inhibits oedema. It is administered by injection into the vitreous cavity of the eye, where it delivers dexamethasone to the posterior segment of the eye for up to 6 months.

Dexamethasone intravitreal implant is indicated for "the treatment of adult patients with visual impairment due to diabetic macular oedema (DME) who are pseudophakic or who are considered insufficiently responsive to, or unsuitable for non-corticosteroid therapy."

Intervention(s)	Dexamethasone intravitreal implant
Population(s)	People with chronic diabetic macular oedema that is insufficiently responsive to available therapies who have phakic lenses
Comparators	• Laser photocoagulation alone The following technologies alone or in combination with laser photocoagulation: • Aflibercept (only if the eye has a central retinal thickness of 400 micrometres or more) • Bevacizumab (does not currently have a marketing authorisation in the UK for this indication) • Ranibizumab (only if the eye has a central retinal thickness of 400 micrometres or more)
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 • contrast sensitivity • mortality • need for cataract surgery • adverse effects of treatment (including cataract formation and glaucoma) • health-related quality of life, including the effects of changes in visual acuity.

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. 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 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. Review date 2022. Dexamethasone intravitreal implant for treating diabetic

	macular oedema (2015) NICE Technology Appraisal 349. Reviewed May 2021. Aflibercept for treating diabetic macular oedema (2015) NICE Technology Appraisal 346. Next review date to be confirmed. Fluocinolone acetonide intravitreal implant for treating chronic diabetic macular oedema after an inadequate response to prior therapy (2013) NICE Technology Appraisal 301. Next date to be confirmed. Ranibizumab for treating diabetic macular oedema (2013) NICE Technology Appraisal 274. Next review date to be confirmed. **Appraisals in development (including suspended appraisals):** Faricimab for treating diabetic macular oedema NICE technology appraisal guidance [ID3899]. Publication expected June 2022. Brolucizumab for treating diabetic macular oedema NICE technology appraisal guidance [ID3902]. Publication date to be confirmed. **Related Guidelines:** Type 1 diabetes in adults: diagnosis and management (2015; updated 2021) NICE guideline NG17. Type 2 diabetes in adults: diagnosis and management (2015; updated 2020) NICE guideline NG28. **Related Quality Standards:** Diabetes in adults (2016) NICE quality standard QS6. **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

Questions for consultation

Have all relevant comparators for dexamethasone intravitreal implants been included in the scope?

Which treatments are considered to be established clinical practice in the NHS for diabetic macular oedema in people without a pseudophakic lens? Does this differ for those with a central retinal thickness of less than 400 micrometres?

Are the outcomes listed appropriate? Should disease severity and intraretinal and subretinal fluid be included as outcomes?

Are the subgroups suggested in 'other considerations appropriate? Are there any other subgroups of people in whom dexamethasone intravitreal implants are expected to be more clinically effective and cost effective or other groups that should be examined separately?

Where do you consider dexamethasone intravitreal implants will fit into the existing NICE pathways, Identifying and managing complications in adults with type 1 diabetes: eye disease and Identifying and managing complications in adults with type 2 diabetes: eye disease?

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 brolucizumab will be 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 dexamethasone intravitreal implants 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 dexamethasone intravitreal implants 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).

NICE has published an addendum to its guide to the methods of technology appraisal (available at https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/NICE-technology-appraisals/methods-guide-addendum-cost-comparison.pdf), which states the methods to be used where a cost comparison case is made.

- Would it be appropriate to use the cost comparison methodology for this topic?
- Is the new technology likely to be similar in its clinical efficacy and resource use to any of the comparators?
- Is the primary outcome that was measured in the trial or used to drive the model for the comparators still clinically relevant?
- Is there any substantial new evidence for the comparator technologies that has not been considered? Are there any important ongoing trials reporting in the next year?

References

1 Diabetes UK (2020) Diabetes prevalence 2019. Accessed September 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.