NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Appraisal

Aflibercept for treating visual impairment caused by macular oedema secondary to branch retinal vein occlusion

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of aflibercept within its marketing authorisation for treating visual impairment caused by macular oedema secondary to branch retinal vein occlusion.

Background

The macula is the central part of the retina responsible for colour vision and perception of fine detail. Macular oedema is the accumulation of fluid within the retina at the macular area, which can lead to severe visual impairment in the affected eye.

Retinal vein occlusion (RVO) is a common cause of reduced vision. It is classified into central retinal vein occlusion and branch retinal vein occlusion (BRVO). BRVO is caused by a blood clot in the small veins in the retina. Blockages in the retinal veins increase the pressure in the retinal capillaries, which can lead to blood and plasma leaking into the macula. These changes trigger vascular endothelial growth factor (VEGF) to be released, which increases the permeability of the blood vessels and causes new vessels to grow.

The impact of vision loss associated with RVO can have a profound effect on vision-related quality of life. Patients may struggle with daily tasks, lose confidence, and become increasingly dependent on family and carers. RVO is also associated with an increase in the risk of vascular causes of death.

RVO affects 1–2% of people aged over 40 years and macular oedema is the most frequent cause of vision loss in people with RVO. It is estimated that in England around 12,900 people with BRVO and macular oedema have visual impairment. The risk of RVO typically increases with age and there is an equal distribution amongst men and women.

Current treatment options for BRVO aim to improve vision and prevent complications. Where visual loss is not severe and macular oedema is minimal there can be potential for spontaneous resolution and clinical observation is considered, otherwise a grid pattern of laser photocoagulation may be beneficial. Dexamethasone intravitreal implant and ranibizumab are recommended in NICE technology appraisal guidance 229 and 283 respectively only if laser photocoagulation has not been beneficial or is not suitable because of the extent of the macular haemorrhage. Intravitreal

injections of bevacizumab, which does not have a marketing authorisation in the UK for treating any ocular condition, may also be used.

The technology

Aflibercept solution for injection (Eylea, Bayer) is a soluble vascular endothelial growth factor (VEGF) receptor fusion protein which binds to all forms of VEGF-A, VEGF-B, and the placental growth factor. Aflibercept is administered by intravitreal injection.

Aflibercept solution for injection has a marketing authorisation in the UK for treating 'visual impairment due to macular oedema secondary to retinal vein occlusion (branch RVO or central RVO)'.

Intervention(s)	Aflibercept solution for injection
Population(s)	Adults with visual impairment caused by macular oedema secondary to branch retinal vein occlusion
Comparators	• Laser photocoagulation • Bevacizumab (not licensed in the UK for this indication) For people for whom laser photocoagulation has not been beneficial or is not suitable: • Ranibizumab • Dexamethasone intravitreal implant • Bevacizumab (not licensed in the UK for this indication)
Outcomes	The outcome measures to be considered include: • visual acuity (the affected eye) • visual acuity (the whole person) • adverse effects of treatment • health-related quality of life • mortality.

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 of any patient access schemes for the intervention or comparator technologies should 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, consideration will be given to a subgroup according to baseline visual acuity. 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: Technology Appraisal No. 346, Jul 2015 'Aflibercept for treating diabetic macular oedema'. Review Proposal Date Jul 2018. Technology Appraisal No. 305, Feb 2014, 'Aflibercept for treating visual impairment caused by macular oedema secondary to central retinal vein occlusion.' Review Proposal Date Feb 2017. Technology Appraisal No. 283, May 2013, 'Ranibizumab for treating visual impairment caused by macular oedema secondary to retinal vein occlusion.' Review Proposal Date Mar 2016. Technology Appraisal No. 229, Jul 2011, 'Dexamethasone intravitreal implant for the treatment of macular oedema secondary to retinal vein occlusion.' Moved to static list. Related Interventional Procedures: Interventional Procedure No. 334, Mar 2010, 'Arteriovenous crossing sheathotomy for branch retinal

	vein occlusion.' Related NICE Pathways: NICE Pathway: Eye Conditions, Pathway last updated: May 2014. http://pathways.nice.org.uk/pathways/eye-conditions
Related National Policy	NHS Standard Contract For Ocular Oncology Service 2013/14 (Adults And Adolescents). "Treatment – Intraocular: steroids for macular oedema (e.g., after radiotherapy)" Ref: D12/S(HSS)/a Department of Health, NHS Outcomes Framework 2014-2015, Nov 2013. Domain 2: Enhancing quality of life for people with long-term conditions. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/256456/NHS_outcomes.pdf