Canadian Agency for Drugs and Technologies in Health

May 2012

A Systematic Review of Intravitreal Bevacizumab for the Treatment of Diabetic Macular Edema

CADTH Report in Brief

Condition

Diabetic macular edema (DME) is a complication of diabetes in which the centre of the retina swells, causing vision loss. The goal of treatment is to preserve or improve current vision by preventing or reducing macular swelling.

Treatment Options

To reduce macular swelling, options include:

- Laser photocoagulation therapy to cauterize leaking blood vessels
- Injection into the eye with anti-vascular endothelial growth factors (VEGF) to prevent blood vessel growth
- Injection into the eye with a corticosteroid.

Issue

Lucentis (ranibizumab), an anti-VEGF, is the only drug therapy licensed by Health Canada for the treatment of DME. Lucentis is priced at $1,575 per 2.3 mg vial. Avastin (bevacizumab), another anti-VEGF, is available as an anti-cancer agent and is being used to treat DME without an indication for this use. What evidence exists as to the benefits and harms of using Avastin in DME?

Methods

A systematic review with meta-analyses was conducted to compare the therapeutic effects of intravitreal Avastin with standard therapies for DME. A supplementary search identified evidence on the safety of Avastin in DME and other eye conditions.

Implications for Decision-Making

- Although Avastin does not have an indication for treatment of DME, there is considerable interest in its use for this condition.
- This review found: Avastin improved vision compared to laser therapy, insufficient evidence comparing Avastin to corticosteroid, and lack of robust evidence for the long-term safety profile of Avastin.
- There were no trials that directly compared Avastin with Lucentis in DME, although a recently published indirect comparison suggested that they may have similar efficacy.
- Large, well-conducted trials are needed to provide better evidence of the effects of Avastin compared with other options, as well as to better define the optimal dose, timing, and duration of Avastin in DME.

Results

Ten trials met the inclusion criteria, were critically appraised, and the findings reported. Six additional studies are critically appraised within the supplemental safety evaluation. Comment is also provided on a recent review for the United States Medicare Evidence Development & Coverage Advisory Committee, which used indirect comparison methodology to compare four anti-VEGFs for treating DME.

For the complete report, please visit www.cadth.ca.