**TITLE:** Bevacizumab and Ranibizumab for Treatment of Branch Retinal Vein Occlusion: Clinical Effectiveness

**DATE:** 25 January 2010

**RESEARCH QUESTION:**

What is the clinical effectiveness of bevacizumab or ranibizumab for the treatment of branch retinal vein occlusion?

**METHODS:**

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 4, 2009), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between 2005 and January 2010. No filters were applied to limit the retrieval by study type. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

**RESULTS:**

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials (RCTs), controlled clinical trials, and observational studies.

Two RCTs, one controlled clinical trial, and three observational studies (with comparator group) were identified regarding the clinical effectiveness of bevacizumab or ranibizumab for the treatment of branch retinal vein occlusion (BRVO). No relevant health technology assessments, systematic reviews, or meta-analyses were identified. Due to the availability of studies...
associated with higher internal validity, observational studies with no comparator group were moved to the appendix. Other additional articles of potential interest can also be found in the appendix.

OVERALL SUMMARY OF FINDINGS:

One RCT was identified comparing two different doses (0.3 mg versus 0.5 mg) of ranibizumab for the treatment of macular edema caused by vein occlusion. The group that received the 0.5 mg dose experienced faster and longer lasting reduction in central retinal thickness. The authors concluded that more investigation into the effectiveness of intravitreal ranibizumab for macular edema are needed. The second RCT compared intravitreal bevacizumab (IVB) to sham treatment for treatment of BRVO. The authors stated that patients who received IVB had statistically significant visual improvement at both six week and 12 week follow-up and central macular thickness decrease was significant at the six week follow-up.

Two observational studies compared intravitreal triamcinolone acetonide (IVT) to IVB for the treatment of macular edema secondary to BRVO. The short-term results showed statistically significant improvement in visual acuity and macular edema within each group; no differences were found between the two groups. One study found a reduction in central macular thickness up to one year follow-up. The authors of these two observational studies found that treatment with either IVT or IVB showed similar results and concluded that either drug could be used for treatment of macular edema secondary to BRVO. The authors of one study also stated that IVT resulted in more adverse events than IVB. A third observational study found that, when compared to combination treatment with both IVB and IVT, treatment with IVB alone resulted in a greater increase in vision. This study also compared IVB to IVT, laser treatment, and surgical procedures. The authors concluded that IVB treatment resulted in similar improvements to laser treatment, but the improvements were not as successful when compared to surgical options or to treatment with IVT alone.

The authors of the controlled clinical trial stated that when compared to macular laser coagulation for macular edema, IVB was more effective, resulting in improved vision and decreased macular thickness. The authors concluded that IVB could be used as a primary treatment for patients with macular edema secondary to BRVO.

IVB for patients with BRVO resulted in a decrease in central macular thickness and improved visual acuity. When compared to laser treatment IVB resulted in a similar improvement in vision, but IVB results were not as successful as those from other surgical options or treatment with IVT alone. The single study investigating the use of ranibizumab concluded that it may be an effective treatment for macular edema but the authors cautioned that more study of ranibizumab’s effectiveness was required.
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials


Controlled clinical trials


Observational studies


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APPENDIX – FURTHER INFORMATION:

Observational studies

*Prospective studies with no comparator group*


**Retrospective studies with no comparator group**


**Coverage policies**

Review articles

Note: see Ranibizumab in CRVO and BRVO


Summary: http://www.euroscan.org.uk/technologies/technology/view/1345


Additional references
