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Synopsis

Anti-VEGF drugs compared with laser photocoagulation for the treatment of diabetic retinopathy: a systematic review and economic analysis

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Plain language summary

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Plain language summary

People with diabetes are at risk of gradually losing their sight because blood vessels in the part of the eye called the retina may become damaged. This condition is called diabetic retinopathy. People with a more severe type of retinopathy called proliferative diabetic retinopathy are usually offered laser treatment. Recently, drugs called anti-vascular endothelial growth factors (anti-VEGFs), which are injected directly into the eye, have been used to treat other eye conditions and might be useful to treat retinopathy.

The Anti-VEGF In Diabetes (AVID) project investigated whether anti-vascular endothelial growth factor therapy is clinically useful and cost-effective. We identified and re-analysed all the clinical trials that used one of the three main anti-vascular endothelial growth factor drugs, namely aflibercept, bevacizumab and ranibizumab. We also performed a new economic analysis based on those trials.

We found that, after 1 year, people with proliferative diabetic retinopathy who received anti-vascular endothelial growth factor injections saw only a small improvement in vision compared to people who had received laser therapy. People with less severe retinopathy received no benefit to their vision. The benefit of anti-vascular endothelial growth factor injections may also decline over time. However, people who received anti-vascular endothelial growth factor injections were substantially less likely to experience the more severe consequences of vision loss, including where vision is lost in the centre of the eye (called diabetic macular oedema).

As most trials ran for < 1 year, the long-term impact of using anti-vascular endothelial growth factor injections repeatedly is still not well understood and requires further clinical research.

Anti-vascular endothelial growth factor treatment is more expensive than laser therapy, and because it had only limited benefits for vision, our analyses found that anti-vascular endothelial growth factor injections are not a cost-effective way to treat diabetic retinopathy. This suggests that anti-vascular endothelial growth factor should not be routinely used as a first choice to treat proliferative diabetic retinopathy in people without macular oedema.

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This article

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