

Media Fact Sheet

Retinal Vein Occlusion

■ What is Retinal Vein Occlusion (RVO)?

RVO is the result of a blockage forming in a blood vessel in the retina, the light sensitive layer at the back of the eye. This blockage of a vein prevents blood being drained from the retina; significant vision loss can occur as a result of macula edema that is secondary to the vein occlusion. RVO is the second most common type of retinal vascular disease after diabetic retinopathy.¹

There are two main forms of RVO that are based on where the blockage occurs. In central RVO (CRVO) the blockage occurs in the main retinal vein at the optic nerve and can cause severe vision loss, while in branch RVO (BRVO) the blockage occurs in one of the four branches of the retinal vein. RVO can develop over a long time period or occur suddenly.

■ How prevalent and serious is RVO?

RVO prevalence varies from 0.7% to 1.6%^{2,3}, and it affects 16 million people worldwide.⁴ RVO typically results in painless unilateral vision loss to varying degrees and is one of the five most common causes of unilateral blindness.⁵

In a pooled analysis using 15 population-based studies from the US, Europe, Asia, and Australia in a population aged ≥ 30 years, the age- and gender-standardized prevalence is 0.52% for RVO in general, 0.44% for BRVO, and 0.08% for CRVO.⁴

Macular edema is the leading cause of vision loss due to RVO however other complications such as vitreous hemorrhage or neovascular glaucoma can also result in vision loss.

■ What causes RVO?

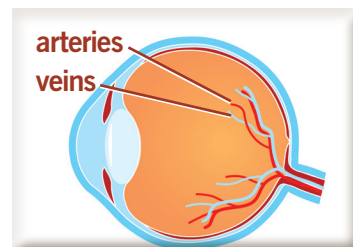
RVO is usually the result of a blood clot forming in a retinal vein that causes it to become blocked. This blockage leads to restriction of the normal blood flow, which can result in a lack of oxygen (hypoxia), fluid leakage, bleeding (hemorrhage) and/or swelling (edema) in the retina causing vision loss.⁶ Damage to the retina can lead to an increased production of vascular endothelial growth factor (VEGF), which can exacerbate macular edema and other complications of RVO.

■ What are the symptoms of visual impairment due to RVO?

Patients may experience blurring of the eyesight or a sudden deterioration in vision. The condition is associated with vascular permeability and the development of abnormal blood vessels (angiogenesis), which can lead to macular edema and also the proliferation of blood vessels (neovascularization) of the iris or retina.⁷ Persistent edema can lead to structural damage to the macula and jeopardize quality of life. If untreated, RVO can also lead to permanent loss of vision.

The International Eye Disease Consortium (IEDC) estimates there could be over

16 million people
with RVO worldwide



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RVO typically affects people over 50 years



High blood pressure can triple the risk of RVO

■ Who is at risk of developing RVO?

RVO typically affects people over 50 years and incidence increases with age; however, RVO can occur at any age.⁴ There is a similar prevalence in men and women.⁴ Common risk factors for RVO include:

- Cardiovascular-associated risk factors such as high cholesterol, high blood pressure, which can triple the risk of RVO, and obesity, which can quadruple the risk of RVO⁸
- Glaucoma
- Diabetes
- Smoking
- Other conditions such as blood disorders

Due to the increased risk of additional diseases such as cardiovascular events in RVO patients it is important that any therapeutic intervention has a proven safety profile.

■ How is RVO treated?

If macular edema is the cause of the vision loss the main aim of treatment is to reduce the build-up of fluid to reduce swelling, restore normal macular structure and improve visual function. Laser therapy is the standard treatment for macular edema following BRVO⁷ but only confers a modest benefit in terms of vision improvement. Laser therapy has been shown not to be of benefit in CRVO. Corticosteroid injections, including Ozurdex® (dexamethasone implant), are commonly used to reduce inflammation.⁹ RVO is often associated with high blood pressure and treating this underlying condition is important to prevent reoccurrence or problems developing in the unaffected eye.¹⁰

Lucentis® (ranibizumab) is licensed in more than 100 countries for the treatment of visual impairment due to macular edema following BRVO or CRVO. Lucentis is designed to bind and inhibit VEGF-A, a protein that is believed to play a critical role in angiogenesis and hyperpermeability disorders.¹¹ In some countries EYLEA® (afibercept) has been approved for the treatment of macular

edema following CRVO; it remains under investigation for the treatment of macular edema following BRVO.

In most countries Lucentis is administered for the treatment of RVO on an individualized basis with the goal of maximizing visual outcomes for each individual patient whilst minimizing the risks of over- or under-treating.

Lucentis rapidly improves and sustains unsurpassed vision gains in BRVO and rapidly improves and sustains significant vision gains in CRVO, with 45–60% patients having visual acuity improvement of 15 letters from baseline over 2 years. In clinical trials (BRAVO and CRUISE) the safety data were similar to previous trials with Lucentis and no new safety events were observed. The most common ocular adverse events that occurred in the Lucentis arms included conjunctival hemorrhage and eye pain.^{12,13}

■ References

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