What is vascular endothelial growth factor (VEGF)?

VEGF is a protein that occurs naturally in the body. When our tissue is not getting enough oxygen, it releases VEGF that signals the need for additional oxygen.

Our blood vessels will sense the presence of VEGF and grow new vessels in response, a process known as angiogenesis. This brings a new pathway of blood supply into the oxygen needed tissues.

Angiogenesis is essential for normal development, wound healing, and reproductive functions in adults. Abnormal regulation of angiogenesis has been implicated in the pathogenesis of several disorders, including cancer, diabetes, and macular degeneration.

What is the association between VEGF and diabetic retinopathy?

VEGF plays an essential role in the development of both proliferative diabetic retinopathy (PDR) and diabetic macular oedema (DMO), both of which are leading causes of visual impairment in adults in the developed world.

Poor blood glucose control in diabetes causes damage to the blood vessels in the retina. As the disease progresses, the retina becomes deprived of oxygen and increases the secretion of VEGF. VEGF stimulates the formation of fragile abnormal vessels in the retina and the anterior chamber of the eye.

Without timely treatment, these new vessels can bleed, cause fibrovascular proliferation and tractional retinal detachment (retinal detachment due to contraction of fibrous tissue), as well as neovascular glaucoma (increased pressure in the eye), ultimately leading to blindness.

VEGF contributes to DMO by causing increased permeability in the capillary walls, allowing leakage of fluid into the macula (the part of the retina that is responsible for central vision and seeing fine details), resulting in significant visual impairment.

What are anti-VEGF agents?

Anti-VEGF agents are drugs that block the activity of VEGF, and hence cause the regression of these abnormal new vessels and reduction of vascular leakage. Anti-VEGF therapy has been used with success in the treatment of wet age-related macular degeneration (ARMD).

Current treatment options for PDR and DMO are limited, consisting primarily of laser photoacoagulation and vitrectomy. Although these treatments generally reduce loss of visual acuity, they are destructive, associated with undesirable side effects, and treat only the later stages of the disease.

Early studies have shown that anti-VEGF therapy is a promising treatment option for PDR and DMO.
Volunteers with Diabetes are invited to be screened for a clinical research programme

The screening will be performed at no cost to you, and may include the following:
- a medical history and physical examination
- routine blood and urine tests
- ECG and chest X-ray
- tests to measure blood glucose control
- Body Mass Index and Waist/Hip Ratio measurement and Body Fat Analysis

To be eligible, you must
- be 21 to 70 years old
- have diabetes controlled by diet alone or a single medicine (metformin)
- weigh at least 45 kg
- not suffer from any severe medical conditions.

You will be reimbursed for time and transport.

Some participants may be offered the opportunity to take part in a study of an investigational/test medicine for diabetes

Interested?

For an appointment or more information, please call us:
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