Photodynamic therapy (PDT) for Central Serous Retinopathy (CSR)/ Polypoidal Choroidal Vasculopathy (PCV)

About photodynamic therapy for Retinal Conditions

The macula is the central part of the retina at the back of the eye. Many different conditions can damage the macula leading to serious visual problems. Central Serous Retinopathy and Polypoidal Choroidal Vasculopathy can affect central vision and have been shown to benefit from PDT treatment.

Photodynamic therapy (PDT) can reduce leakage in CSR and can preserve vision and close down polyps in PCV. A light-activated medicine called verteporfin (Visudyne) is used for this treatment which is given by an injection into a vein in your arm. This medicine accumulates in the abnormal blood vessels in your eye, where it is activated using a red laser light to treat your AMD.

Not all Private Health Insurance companies will reimburse patients for PDT treatment for CSR or PCV, so please check with your individual company.

How does photodynamic therapy work?

The principle of the treatment is that a photosensitive dye (Visudyne) is injected into your bloodstream 15 minutes prior to the laser treatment. The dye concentrates in abnormal blood vessels (PCV), or in the abnormally leaky layers (chronic CSCR), beneath the macula, in the centre of the retina. The wavelength of the laser light coincides with the wavelength of the Visudyne such that the laser light is preferentially absorbed into the abnormal blood vessels or leaky layer in amounts sufficient to prevent leakage but not in sufficient quantity to damage the macula. Thus, photodynamic therapy selectively treats the underlying disorder without compromising the function of the normal macula.

Each treatment has varied effectiveness and therefore repeat treatment may be necessary.

Before your procedure

- When you arrive at the eye clinic, we will ask you for details of your medical history and carry out any necessary clinical examinations and investigations.
- We will put drops in your eyes to dilate your pupils, which will take about 20 to 30 minutes. These drops will cause your vision to be temporarily blurred and will make your eyes more sensitive than usual to bright light for up to 24 hours.
- There will be an opportunity for you to ask us questions about the procedure during the time it takes for your pupils to dilate. However, please feel free to discuss any concerns you might have at any time.
Many people will need to have a fluorescein angiogram and/or indocyanine green angiography, which involves taking some photographs of the back of your eye after a dye is injected in your arm. The ophthalmologist uses these photographs to help with the assessment of your condition.

**Photodynamic therapy (PDT)**

**What does the treatment involve?**

It is carried out on an out-patient basis and takes approximately 40 minutes. On arrival at our centre the nurse will meet you and take some preliminary measurements, e.g. height and weight. Your vision will be assessed and pupils dilated after discussion with your Consultant and consent taken.

- A specially-trained nurse will give you an injection of Visudyne (the light-activated medicine) through a flexible tube (cannula) in your arm, which will take about 10 minutes.
- A nurse will stay with you throughout this procedure.
- We will put some anaesthetic drops in your eye before the laser treatment. A contact lens will be placed on your eye for the laser treatment, which helps the laser light to be focused on the affected area at the back of your eye.
- We will then carry out the laser treatment. This involves shining a special red laser light into your eye for 83 seconds.

**Possible side effects of photodynamic therapy (PDT):**

- The Visudyne can rarely leak out of the vein at the injection site which can cause pain, swelling and inflammation.
- About 2% of patients experience some back pain while the Visudyne is being given, which can be helped by moving around (e.g. walking a few paces) until the pain resolves.
- Some patients experience a temporary mild blurring of vision following treatment. If you do have any visual problems following treatment, we advise you not to drive or use machinery until the blurring disappears.
- Between 1% to 4% of patients experience a severe, but usually transient, decrease in vision in the treated eye following treatment. If you experience prolonged loss of vision, you must contact your doctor.

**Special measures you need to take AFTER photodynamic therapy (PDT):**

- You will need to protect your skin from sunburn for 48 hours after the procedure because Visudyne makes your skin more sensitive to light (photosensitivity).
- You will therefore need to avoid exposure to direct sunlight and bright indoor light (such as tanning salons, bright halogen lights or operating lights used by surgeons or dentists). ‘Normal’ indoor lighting is safe.
- If you are exposed to any of the above lights, please wear protective clothing and dark sunglasses to protect yourself. Sunscreens offer no protection.
- However, do not just stay in the dark, because exposure to normal indoor lighting will help your body clear the Visudyne more quickly.

**Follow-up appointments**
Photodynamic therapy (PDT) can involve repeat treatments over a period of 6 months. You will receive an appointment to review your progress and if required, fluorescein angiography and photodynamic therapy (PDT) will be repeated as before.

**Intended benefits of the procedure**

Photodynamic therapy (PDT) can reduce leak from abnormally leaky choroidal vessels (in CSR) or close down polyps in PCV. The aim of PDT treatment is to preserve remaining useful vision, although it can also improve vision in some cases.

**Alternative procedures that are available**

You can decide not to have this type of treatment, and can be given advice about how to make the best use of your remaining sight. Your consultant can also discuss the possibility of an alternative treatment option if available.

**How effective is the treatment?**

**Chronic central serous chorioretinopathy**

There are no large scale clinical trials looking at the effectiveness of PDT in this condition, but smaller studies suggest it is likely to resolve subretinal leakage with approximately 1 or 2 treatments.

**Idiopathic Polypoidal Vasculopathy**

The EVEREST study showed that PDT was not as effective as Lucentis at improving visual acuity in such patients at six months but that PDT was more effective in closing polyps as judged by fluorescein angiography, suggesting that combination therapy may be beneficial.

**Does the treatment effect last indefinitely?**

It has not been definitively shown that PDT lasts indefinitely once it has stabilised a retinal condition and it is possible that recurrences may occur in the future but typically these can be treated with photodynamic therapy again.