What is ocular hypertension?

Infact, ocular hypertension is not glaucoma. It is a "pre-glaucoma" condition. Not all cases lead to glaucoma. If you have raised eye pressure, but no other sign of glaucoma, then you have ocular hypertension. Glaucoma is defined by visual field loss and consistent optic nerve signs. If the optic nerve shows characteristic signs, or of there is nerve fiber layer loss, then "pre-perimetric glaucoma" is diagnosed in some circumstances.

Raised eye pressure may occur for many years without causing a problem. With time, however, it can lead to damage to the optic nerve. The largest studies in the world (eg OHTS) permit the approximate calculation of risk of glaucoma onset in certain patients. If you are in a high risk category, then treatment is considered. For example, those with an exceptionally thin cornea or a significantly increased "cup to disc ratio" might be deemed appropriate to treat.

More detailed information about Ocular Hypertension

Ocular hypertension refers to any situation in which the eye pressure (or 'intraocular' pressure) is higher than normal, and primarily refers to raised pressure without any optic nerve damage or vision loss. Some eye conditions can increase the pressure inside the eye. Ocular hypertension is not a disease in itself, merely a term that is used to describe those who should be observed more closely to detect glaucoma or other ocular diseases that could be causing elevated intraocular pressure. Glaucoma is diagnosed when increased intraocular pressure, optic nerve damage, and vision loss are all present together.

High pressure inside the eye is caused by an imbalance in the production and drainage of fluid in the eye (aqueous humor). In ocular hypertension, the channels that normally drain the fluid from inside the eye do not function properly. If more fluid is continually being produced inside the eye, but cannot be drained because of improperly functioning drainage channels, then this results in an increased amount of fluid inside the eye, thus raising the eye pressure.

Eye pressure is measured in millimeters of mercury (mmHg). Normal eye pressure ranges from 10-21 mmHg; ocular hypertension is defined by an eye pressure greater than 21 mmHg.

RISK FACTORS

Ocular hypertension cannot be prevented, but through regular eye examinations with an ophthalmologist, its progression to glaucoma can be delayed or prevented.

Elevated intraocular pressure is a concern in people with ocular hypertension because it is one of the main risk factors for glaucoma. Studies have shown that those at risk of ocular hypertension are:

- people over the age of 40
- women after the menopause
- people with primary open-angle glaucoma
- black people
- because they are prone to thinner corneas (the transparent membrane covering the eye which admits light)
- pigment dispersion syndrome

RISK FACTORS AND THE PROGRESSION TO GLAUCOMA

Recent studies have shown that there is a risk on average of 10% of people with ocular hypertension developing glaucoma over 5 years. If eye pressure is lowered by medications or laser surgery, this risk may be decreased to 5% (a 50% decrease in risk).

Those affected with ocular hypertension who are at greatest risk of developing glaucoma include people with intraocular pressures of over 24 mmHg, and those with thinner corneas (this is more prevalent in black people).

RISK FACTORS AND THE PROGRESSION TO EYE DEFECTS

A small percentage of people with ocular hypertension will develop retinal vein occlusion (less than 5%), a condition where veins in the retina can become blocked. This can lead to vision loss. Keeping pressures below 25 mmHg in people with ocular hypertension, and who are older than 65 years, is beneficial.

SYMPTOMS

Most people with ocular hypertension do not experience any symptoms. Clearly, therefore, regular eye examinations with an ophthalmologist are very important to rule
SIGNS�� Investigations to determine possible causes of eye pressure and rule out early�primary open-angle glaucoma�or secondary causes of glaucoma, will be carried out by an ophthalmologist using some or all of the following techniques:<br />
- A visual acuity assessment (how well you can see an object) will determine the range of visual acuity by reading letters from across a room using an eye chart.<br />
- A tonometer will measure intraocular pressure; a reading of greater than 21 mmHg measured in one or both eyes will be re-examined on two or more occasions.<br />
- A visual field test will assess the peripheral (side) vision.<br />
- Gonioscopy (using a special contact lens) will determine if the drainage channels in the eye are open, narrowed or closed.<br />
- Fundus photographs (pictures of the back of the eye) will determine possible changes and / or damage to the optic nerve and<br />
- Pachymetry (a simple measurement of corneal thickness) will determine the accuracy of intraocular pressure readings because a thinner cornea can give falsely low pressure readings, whereas a thick cornea can give falsely high pressure readings.<br />
- A slit lamp (a special microscope) will determine damage or changes to the front of the eye which includes the cornea, anterior chamber, iris, and lens.<br />

MEDICATION TREATMENT�� The aim in preventing the onset of glaucoma is by reducing the raise in intraocular pressure, and medical treatment, in the form of eye drops, has proven to be very beneficial. Sometimes, more than one medicine is required. Initially, eye drops may be required only in one eye to see how effective the drug is in lowering the pressure and, if effective, the drops may be used in both eyes. Symptoms such as haloes, blurred vision, pain, or if intraocular pressures have recently increased and then continue to increase on subsequent visits, will most likely require medical treatment. However, it is not always necessary to prescribe these initially, and it may be that observing by routine eye examination is all that is required unless, however, pressures are consistently higher than 28-30 mmHg and there is evidence of optic nerve damage, or if intraocular pressure is steadily increasing. Once medication is prescribed, regular follow-up visits with the ophthalmologist (initially 3-4 weeks after starting medication) for pressure checks will be required to ensure the drug is helping to lower intraocular pressure. If the drug is working and is not causing any side effects, then it is continued for a further 2-4 months. If the drug is not helping to lower the pressure, or is causing an allergic reaction, then that drug will be withdrawn and a new drug will be prescribed.<br />

SURGICAL TREATMENT�� Generally, if the pressure inside the eye cannot be lowered with one or two medicines, then surgical or laser therapy may be the next step. Laser trabecuoplasty is a reasonable first option in selected patients with ocular hypertension, if the drainage angle is open and shows no sign of scarring. Otherwise, very occasionally, surgery (Trabeculectomy with 5FU) is the best option. Once ocular hypertension has been detected, routine examinations will be necessary. If the intraocular pressure is 28 mmHg or higher, medication will usually be prescribed. After one month of taking the drug a follow-up visit with the ophthalmologist will determine if the drug has been effective in lowering the pressure and that there are no side effects. If the drug is working, then follow-up visits may only be necessary every 3-4 months. If intraocular pressure is 26-27 mmHg, the pressure is rechecked in 2-3 weeks after the initial visit. If, on the second visit, the pressure is still within 3 mmHg of the reading at the initial visit, then follow-up visits will be recommended every 3-4 months. If the pressure is lower on the second visit, then the length of time between follow-up visits is longer. At least once a year, visual field testing will be carried out and the optic nerve examined. If the intraocular pressure is 22-25 mm Hg, the pressure is rechecked in 2-3 months. At the
second visit, if the pressure is still within 3 mm Hg of the reading at the initial visit, then a
six-month follow-up review may be recommended and may include a visual field test and an
optic nerve examination. Testing may then be repeated at least yearly. Follow-up visits may
also be necessary if there is concern during a visual field test because this may be a sign of
early primary open-angle glaucoma.<br />

OUTCOME
By early detection and
treatment, the risk of the onset of glaucoma will decrease and, in the vast majority of cases,
medication will be effective.

Eye drops are
used to treat ocular hypertension.