

## **Beta Blockers for the Treatment of Glaucoma**

While there is no cure for glaucoma, it can be controlled with proper management.

Elevated intraocular pressure (IOP) can damage the optic nerve, which may lead to vision loss. Treatment for glaucoma focuses on lowering the IOP to a level that is less likely to cause further optic nerve damage. This is known as the “target pressure.” The target pressure differs from individual to individual. Your target pressure may change during your course of treatment if the progression of glaucoma is not arrested.

If you have glaucoma, your ophthalmologist (Eye M.D.) may prescribe medication to lower your eye IOP. There are many more choices for topical treatment today than there were only a few years ago. Your ophthalmologist has chosen a **beta-blocker** medication to treat your glaucoma.

### **How Do Beta Blockers Work?**

Beta-blocker (beta adrenergic antagonist) medications are reliable for lowering intraocular pressure. They work by decreasing the amount of fluid that the eye continually produces, called the aqueous humor. For many years, beta blockers were the mainstay of treatment. Thus, we have a lot of experience with this medication for the treatment of glaucoma.

### **Types of Beta-Blocker Medications**

There are two general classes of beta blockers: nonselective and selective. Nonselective beta blockers have more effects on the body’s beta receptors system-wide and are associated with more side effects. The nonselective beta blockers are also more effective at lowering IOP.

The nonselective beta blockers include

- levobunolol (Betagan, AKBeta);
- carteolol (Ocupress);
- metipranolol (Optipranolol);
- timolol (Timoptic, Betimal, Istalol); and
- timolol gel (Timoptic XE).

Generic versions of timolol and timolol gel are now available. Consult with your ophthalmologist to be sure that a generic product is an acceptable alternative for you.

The only available selective beta-blocker medication is

- betaxolol (Betoptic, Betoptic S).

Betaxolol is the generic form of Betoptic.

While a selective beta-blocker eyedrop has a better safety profile, especially in terms of respiratory symptoms, it still must be used with caution in patients with asthma or emphysema. The eye pressure-lowering effect is slightly less with selective beta blockers. There is only a minimal additive effect in terms of lowering eye pressure in patients already taking oral beta blockers, and there is the risk of further additive side effects. If you are already taking a beta-blocker medication by mouth or if your primary care doctor newly prescribes a beta blocker, please notify your ophthalmologist.

### **Possible Side Effects of Beta Blockers**

All medications, including eyedrops, can have side effects. Some people taking beta-blocker eyedrops may experience

- wheezing or difficulty breathing;
- slow or irregular heart beat or decreased response of heart rate to exercise;
- increased risk for heart failure;
- depression;
- impotence;
- headache, dizziness or weakness;
- in diabetics, difficulty sensing blood glucose changes; and
- eye irritation or allergy.

### **Medication Tips**

For glaucoma medications to work, you must take them regularly and as prescribed by your doctor. With each new medication that your ophthalmologist prescribes, make sure you understand the following:

- the name of the medication;
- how to take it;
- how often to take it;
- how to store it;
- if you can take it with your other medications (make sure all of your doctors know about all the different medications you take, including any nonprescription medications);
- what the possible side effects may be;
- what you should do if you experience side effects; and
- what you should do if you miss a dose