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Are You at RISK for Blindness? Don’t Keep Glaucoma a Family Secret!

Older Age Is a RISK Factor

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Educational Objectives

1. Raise awareness of risk factors for glaucoma.
2. Encourage health care providers to educate the patient about glaucoma risk factors.
3. Educate glaucoma patients to encourage family members to seek a glaucoma examination.

Background

At least three million people in the United States currently have glaucoma, half of whom do not know they have a potentially blinding disease. Glaucoma is one of the leading causes of preventable blindness in the United States, and the most common cause of blindness among African Americans. Glaucoma is a condition in which the optic nerve is damaged. Pressure builds up in the eye when the aqueous humor is prevented from draining properly. The resulting increase in pressure within the eye can damage the optic nerve. If the entire nerve is destroyed, blindness results. Five to ten million Americans have elevated intraocular pressure which places them at risk for developing glaucoma. Most people, even those in high risk groups, are largely unaware of the risk factors for glaucoma, and that periodic ophthalmic examinations reduce, delay or prevent unnecessary loss of sight. While vision lost from glaucoma cannot be regained, diagnosis and treatment during the early asymptomatic stage can prevent further vision loss.

Risk Factors

Intraocular Pressure (IOP) -While elevated intraocular pressure is a major risk factor for glaucoma, a single intraocular pressure measurement is a poor predictive screening test. Fifty percent of people with undiagnosed glaucoma will have intraocular pressures below 22 mm Hg (mercury) at the time of screening and will therefore be missed. Up to one third of all individuals have pressure levels consistently below 22 mm Hg (so-called normal-tension glaucoma). On the other hand, many individuals with "elevated" pressures (21 mm Hg or above) may not have, and may never develop, optic nerve
damage from glaucoma.

**Other Risk Factors**

The EyeCare AmericaSM Glaucoma Project recommends evaluating other risk factors for glaucoma in order to identify individuals who may be in need of more extensive testing. Besides elevated IOP, the strongest risk factors for glaucoma are family history of glaucoma, older age, and African-American heritage. First degree family members of a person with glaucoma are up to ten times more likely to have glaucoma than a person without a family history of glaucoma. Although glaucoma is uncommon among Caucasians before age 50, it tends to occur at least a decade earlier in African-Americans, thus requiring more intensive evaluation at a younger age. High myopia (greater than 5 diopters) is a contributory but somewhat less pronounced risk than other factors. If the optic nerve appears to have a large cup-disc ratio, asymmetry of cupping, disc hemorrhage or narrowed disc rim, glaucoma should be suspected. Patients with diabetes, a previous eye injury, or a history of steroid use for a long period of time may also be at higher risk for glaucoma.

**Education and Screening**

The Glaucoma Project Risk Factor Analysis Scorecard provides a weighting system, utilizing history-based factors, to assess glaucoma risk. It can also be used by patients and other non-physicians to determine risk level. Those who score 4 or higher are considered to be at high risk for glaucoma and may need further evaluation.

1. **Family History (Choose one)**
   - No family history of glaucoma 0
   - Parent or child has glaucoma 2
   - Brother or sister has glaucoma 4
   - Parents & brother or sister 4

2. **Race/Ethnicity (Choose one)**
   - White/Caucasian 0
   - Hispanic 1
   - Black/African-American 3

3. **Age (Choose one)**
   - < 40 0
   - 40-49 1
   - 50-59 2
   - 60 + 3

Add up the scores in each of the above three categories. If you have a total score of 4 or higher, you have an increased risk for having glaucoma.
Case Study

Mrs. S. was seen in the Ophthalmology Clinic at Virginia Commonwealth University’s Medical College of Virginia for an eye examination because she could not see the fine print with her glasses. Mrs. S. is a 54 year old African-American female and has been in good health. She had a brief episode of elevated blood pressure with her second pregnancy but does not require medication.

Mrs. S got her first pair of bifocals nine years ago and has not returned to the eye doctor since. Last year she began to experience increasing trouble with near vision. Her brother has recently been discovered to have glaucoma. She could be corrected to 20/20 at distance and near with an updated glasses prescription. However, routine check of her intraocular pressure revealed 30 mm of mercury in the right eye and 38 mm of mercury in the left. Examination of the optic nerves showed nearly complete cupping of both optic discs, slightly worse in the left eye. Visual fields were obtained and showed extensive visual field loss in both eyes, with the better right eye reduced to ten degrees nasally and 15 degrees temporally.

Mrs. S. was advised not to drive because of loss of side vision and was started on medication to treat her glaucoma. Mrs. S. was encouraged to contact her family members with advice to have a complete medical eye exam.

Conclusion

Current estimates show at least three million people in the United States have glaucoma. A person with diagnosed open angle glaucoma is likely to have three living first degree relatives (parents and siblings) with glaucoma. For every five glaucoma cases, there is one undiagnosed, living relative. Do you know anyone at RISK for blindness? Don’t keep this a family secret - encourage your family members to have yearly medical eye examinations.

Study Questions

1. A 65-year-old white female has open-angle glaucoma with visual fields loss. She has two brothers and two sisters who are between 60 and 70 years old. What are the chances that at least one of the brothers and sisters has open-angle glaucoma?

2. Consider the older adults with whom you interact professionally or personally. What do you estimate to be the percentage with a history of glaucoma?

References


