Diabetes leading to blindness in many people

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Diabetes is the leading cause of new cases of blindness among adults 20 to 74 years old. Dr. Michael Grodin, co-director of retinal services and director of clinical research at Katzen Eye Group, with locations around Baltimore, discusses eye problems and the link to diabetes.

Q: Why is blindness from diabetes becoming so prevalent?

A: As the number of people with diabetes is sharply rising, more people are developing complications like diabetic retinopathy - damage to the retina caused by diabetes. From 2000 to 2010, there was an 89 percent increase in the number of people with diabetic retinopathy, which is almost 7.7 million people.

The Wisconsin Epidemiological Study of Diabetic Retinopathy showed that the strongest predictor of developing diabetic retinopathy was duration of diabetes. In this study, the risk of developing the disease increased from 5 percent within the first three years of having diabetes to 80 percent at 15 years.

As many as 20 million people have diabetes, and that number is expected to double by 2025. Moreover, there are an estimated 40 million to 50 million Americans who have "pre-diabetes," and an additional 10 million who are unaware they have diabetes.

Q: What does diabetes do to the body that causes blindness?

A: The most common manifestation is diabetic retinopathy. The disorder

affects the retina, the light-sensitive inner lining of the eye, and the macula, a small central portion of the retina, which is necessary for sharp central vision. There are two stages of diabetic retinopathy. In the first stage, called non-proliferative, the main concern is macular edema. This occurs when the normal blood vessels start to develop weak spots that can leak, resulting in blurry central vision. In the second stage, called proliferative diabetic retinopathy, severe vision loss is a greater risk from abnormal blood vessels, which grow from the retina and can lead to the eye filling with blood, scar tissue formation and retinal detachment.

Q: What are other common vision problems caused by diabetes?

A: A cataract is a clouding of the lens, which causes the vision to become blurred or dim because light cannot pass easily to the back of the eye. Diabetics are not only 60 percent more likely to develop cataracts, but usually develop them earlier in life.

Diabetics are 40 percent more likely to develop glaucoma. Glaucoma occurs when increased fluid pressure in the eyes damages the optic nerve. People with diabetes are also more likely to develop an uncommon and painful type of glaucoma called neovascular glaucoma. In this form of glaucoma, new blood vessels grow on the iris, which is the colored part of the eye. These blood vessels block the normal flow of fluid out of the eye, raising the eye pressure and potentially leading to profound vision loss.

Q: How are signs of blindness detected in diabetics?

A: Most people who have diabetes may not be aware of any eye problems until their vision is significantly affected. This is why the American Diabetic Association recommends a yearly comprehensive eye exam that includes visual acuity test, dilated eye exam and measurement of eye pressure.

If the eye care specialist sees any diabetic eye disease, further testing may be done.

Q: What can people with diabetes do to prevent blindness?

A: The Diabetes Control and Complications Trial showed that intense blood glucose control decreases the risk of diabetic retinopathy by as much as 76 percent and decreases the risk of progression by 54 percent.

Other lifestyle modifications like tight blood pressure control, maintaining a normal weight, watching diet, not smoking and engaging in regular physical activity can all lower the risk of the progression of diabetes.

Q: How do you treat people who develop eye problems because of diabetes complications?

A: The standard treatment for diabetic macular edema has been focal laser, which treats the leaking blood vessels and stabilizes vision. However, recent studies have indicated a benefit to injecting medicines that block vascular endothelial growth factor, such as Lucentis, resulted in better vision than laser treatment alone.

For proliferative diabetic retinopathy, panretinal photocoagulation is performed. During this treatment, laser spots are placed to stabilize fragile blood vessels in the retina.

If extensive growth of new blood vessels, scar tissue formation, tractional retinal detachment, or severe bleeding inside the eye has occurred, a surgery called vitrectomy is performed.