

Risk of Vision Loss Increased in Black Diabetes Patients

Type 1 diabetes patients included in the New Jersey 725 study were reexamined after 6 years.

BY LEAH D. FARR, ASSOCIATE EDITOR

Poor blood sugar control leads to a higher incidence of vision loss among blacks with type 1 diabetes compared with their white counterparts, a new study shows.

According to research published in the *Archives of Ophthalmology*, older age, presence of proteinuria, and diabetic retinopathy (DR) were also predicting factors in vision loss for black patients.¹

Monique S. Roy, MD, and colleagues from the University of Medicine and Dentistry of New Jersey in Newark, followed 483 blacks with type 1 diabetes to examine the incidence of visual loss and associated risk factors (see Figure 1). Patients were drawn from the New Jersey 725 study and reexamined after 6 years.

At follow-up, Dr. Roy and her colleagues found that 4.3% of patients developed visual loss in their better eye (visual acuity of 20/40 or worse), and 0.6% became blind (visual acuity of 20/200 or worse). Another 9.8% reportedly developed doubling of the visual angle (DVA), defined as a loss of 15 or more letters, in their better eye. An additional 13.5% developed DVA in either eye.

INCIDENCE OF DVA

The authors found that the incidence of DVA in either eye was 1.3% for patients who had diabetes for <5 years at baseline compared with 33.3% of patients who had diabetes for ≥30 years ($P<.001$). DVA in either eye was also significantly associated with age at diagnosis (age ≥13 years), higher A1C levels, higher systolic and diastolic blood pressure measurements, presence of

Microproteinuria seems to precede retinopathy and is a major predictor of mortality, particularly in men.

proteinuria, macroangiopathy, and total and LDL cholesterol levels (see, *Depression Impacts Vision Loss in Blacks With Type 1 Diabetes*).

There were no significant associations, however, with level of education, socioeconomic, employment, or marital status, family or personal annual income, body mass index, smoking, alcohol consumption, or eye insurance coverage.

POOR CONTROL AT BASELINE

Other factors, including poor glycemic control at baseline and proteinuria were also significant predictors for vision loss. "Among African American patients, those in the upper quartile of [A1C] values at baseline had eight to 20 times the odds for progression to proliferative diabetic retinopathy at the 6-year follow-up than did patients in the lowest quartile," the authors added. Because poor glycemic control is a well-established risk factor for visual loss "improving glycemic control in this population is critical for reducing visual loss," they wrote.

DEPRESSION HAS AN IMPACT ON VISION IN BLACKS WITH TYPE 1 DIABETES

REVIEWED BY MONIQUE S. ROY, MD

Depression is common among people with diabetes and has been associated with vascular complications in previous cross-sectional studies. My colleagues and I set out to determine whether this association could be established in black type 1 diabetic patients, using longitudinal data.

A majority of previous studies have examined depression's link to diabetic retinopathy (DR) or other vascular complications at a single time period. Using a previously established patient set (from the New Jersey 725 study), we wanted to take this research further and examine depression's effect over a longer period of time (6 years).

We examined approximately 500 black patients with type 1 diabetes in 1993 and, subsequently, 6 years later. Baseline and follow-up examinations included administering the Beck Depression Inventory (BDI), an ophthalmic exam, retinal photographs, and A1C measurement as an index of glycemic control.

Depression is commonly found in diabetes patients, with 25% developing it at some point in their lives. This is compared with 10% of individuals without chronic health problems.

Our data, published in *Psychosomatic Medicine*,¹ showed that patients with a high score on the BDI at both baseline and follow-up were more likely to have poor glycemic control assessed by A1C values at baseline ($P=.01$) than patients with low BDI scores at baseline and follow-up. Interestingly, when glycemic control was taken into account, patients with high BDI scores at both baseline and follow-up were still more likely to show progression of DR (odds ratio [OR], 2.44; confidence interval [CI], 1.01-5.88) and progression to proliferative DR (OR=3.19; CI, 1.30-7.87) than patients with low BDI scores at both visits. These data suggest that depression may be a risk factor for progression of DR, independently of glycemic control. ■

Monique S. Roy, MD, is from the University of Medicine and Dentistry, New Jersey Medical School, Institute of Ophthalmology and Visual Science, in Newark, New Jersey. She may be reached at roymo@umdnj.edu.

1. Golden SH, Hochang BL, Schreiner PJ, et al. Depression and type 2 diabetes mellitus: The Multiethnic Study of Atherosclerosis. *Psychosomatic Medicine*. 2007;69:529-536.

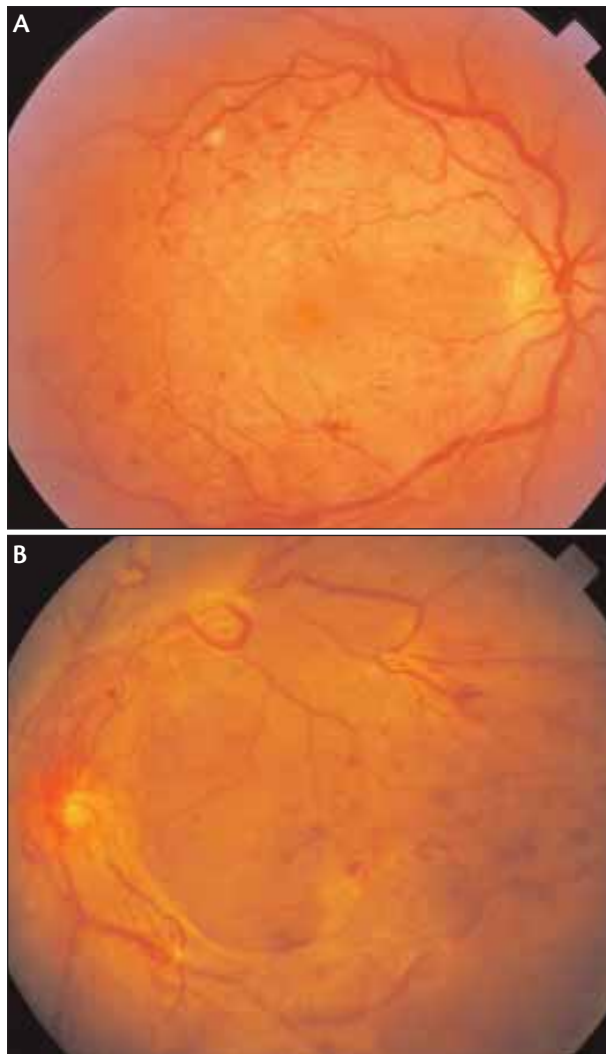


Figure 1. Examples of nonproliferative DR (A) and proliferative DR (B). Images courtesy of Mark Metzler and CP Wilkinson, MD, of the Greater Baltimore Medical Center.

Additionally, “microproteinuria, which is detected within a few years of the diagnosis of diabetes, seems to precede retinopathy and is a major predictor of mortality, particularly in men,” Dr. Roy and colleagues continued. “DR severity at baseline, however, was a stronger predictor of visual loss than was proteinuria . . . Thus, patients diagnosed as having proliferative DR should be evaluated for the presence of proteinuria.” ■

Monique S. Roy, MD, is from the University of Medicine and Dentistry, New Jersey Medical School, Institute of Ophthalmology and Visual Science, in Newark, New Jersey. She may be reached at roymo@umdnj.edu.

1. Roy MS, Skurnick J. Six-year incidence of visual loss in African Americans with type 1 diabetes mellitus. *Arch Ophthalmol*. 2007;125:1061-1067.