

Half of Diabetic Latinos Have Retinopathy

The Los Angeles Latino Eye Study was initiated to survey health care and ocular disease in the predominantly Latino population of Mexican ancestry in Los Angeles.

REVIEWED BY ROHIT VARMA, MD, MPH

Latinos have a high prevalence of visual impairment and blindness, and those who have diabetes, are older, unemployed, divorced or widowed are more likely to be visually impaired, according to a multipart study published in *Ophthalmology*.¹

The Los Angeles Latino Eye Study (LALES) is a population-based prevalence study of eye disease in 6,357 Latinos, primarily Mexican-Americans, aged 40 years and older in La Puente, Calif.² Rohit Varma, MD, MPH, associate professor of ophthalmology and preventive medicine at the Doheny Eye Institute at the Keck School of Medicine, University of Southern California, is lead author of the study. "These results suggest the

This is a huge health problem among Mexican-Americans that must be addressed.

importance of developing targeted programs aimed at Latinos for evaluation and treatment of eye diseases," he said.

HEALTH CARE DISPARITIES IN LATINOS

To help erase health care disparities in the Latino community, Spanish speaking staff are needed to run screening and treatment programs, according to Dr. Varma. "There is a need for a system of health care workers who educate and help coordinate care of Latinos."

This 5-year study, funded by the National Institutes of Health, is the largest of its kind. Dr. Varma said in an interview that a genetic predisposition to eye disease and a lack of sufficient eye care among Latinos may account for the fact that Latinos have the highest rates of visual impairment among all racial or ethnic groups in the United States.

One of the major findings in LALES is that close to one of every two Latinos with diabetes has diabetic retinopathy (DR).³ The longer they have had diabetes, the higher the prevalence of retinopathy. Latinos also have high rates of early age-related macular degeneration (AMD), but not of advanced AMD.

"This study is very helpful because there is a huge health problem in the Mexican-American population that needs to be



Figure 1. Proliferative retinopathy, an advanced form of DR, occurs when abnormal new blood vessels and scar tissue form on the surface of the retina. (Photo courtesy of the National Eye Institute, National Institutes of Health.)

addressed,” said American Academy of Ophthalmology spokesperson Jose Pulido, MD, professor of ophthalmology at the University of Illinois at Chicago. “However, we cannot assume the results of this study apply to all Latinos, since Mexican-Americans are of Hispanic and American-Indian descents. This may be different than a Caribbean population, which would be of more Hispanic and African descents. Additional studies looking at the different Latino populations would be helpful.”

TWO MILLION LATINOS WITH DIABETES

According to the American Diabetes Association, 2 million Latinos aged 20 years and older have diabetes; the prevalence of type 2 diabetes is 1.5 times

higher in Latinos compared to non-Latino whites. In LALES, one in four patients had diabetes and the researchers said 20% of them were unaware of their condition until participation on the study.

“Given the high rates of visual impairment and diabetic retinopathy, physicians, particularly primary care physicians who take care of Latinos with diabetes, should refer them for a comprehensive eye exam once a year,” Dr. Varma said.

To identify the prevalence of nonproliferative DR, proliferative DR (Figure 1) and macular edema, researchers looked at a cohort of 1,263 patients in LALES who had definite diabetes. About 96% of these patients had gradable fundus photos, and of those patients, 46.9% had DR. Dr. Varma and colleagues

LALES AT A GLANCE

STUDY BASICS

- LALES (Los Angeles Latino Eye Study) is a population-based, cross-sectional study.
- 6,357 Latinos, aged 40 years and older from six census tracts in Los Angeles were included.
- Each eligible participant had a detailed interview and eye assessment performed, which noted demographic, behavioral and ocular risk factors as well as health-related and vision-related quality of life.
- Eye exam included visual acuity measurement, intraocular pressure and visual fields; fundus and optic disc photography; a detailed anterior and posterior segment exam; and blood pressure, HbA1c and blood glucose.
- Researchers measured the outcomes of visual impairment, blindness, cataract, glaucoma, DR and AMD. Secondary outcomes are odds ratios for risk factors associated with eye disease, health-related quality of life and vision-related quality of life.
- 80% were of Mexican origin.

CONCLUSIONS

- Rates of visual impairment and blindness in Latinos are high, especially in older patients. Better education and employment are likely to decrease the burden of visual impairment in Latinos.
- The NEI-VFQ-25 was a valid measure to assess overall self-reported visual functioning.⁴ Poorer binocular presenting visual acuity was associated with lower self-reported visual functioning, and a 5-point difference in NEI-VFQ-25 scores was found to be associated with a two-line difference in visual acuity — a visual impairment-related difference. The association between binocular visual acuity and self-reported visual functioning was not impacted by the definition of visual impairment (including or excluding 20/40).
- While relatively high rates of early AMD were found, the corresponding rates of advanced AMD were not high.⁵
- Of 1,217 diabetic participants, 46.9% had DR. The prevalence of DR is high among Latinos of primarily Mexican ancestry.³
- The prevalence of open-angle glaucoma is high among Latinos of Mexican ancestry.⁶ The prevalence of open-angle glaucoma was 4.74% (95% CI, 4.22% to 5.30%). The prevalence of ocular hypertension was 3.56% (95% CI, 3.12%-to 4.06%).
- Cortical opacities were the most common type of lens opacities in this study.⁷ The high rate of visual impairment from lens opacities suggests that programs that increase access to cataract surgery for older Latinos could help to reduce the burden of visual impairment in the United States.

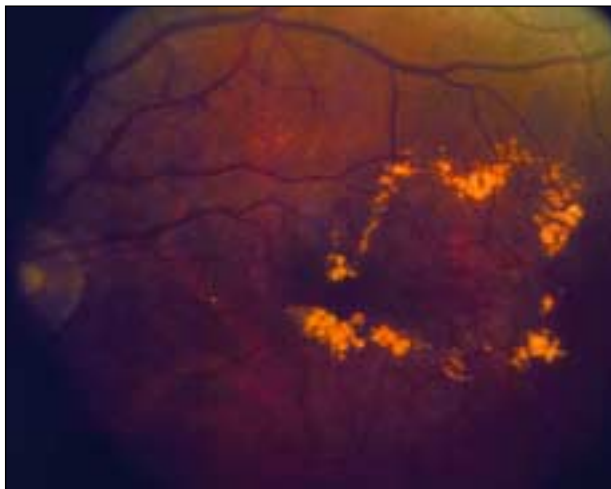


Figure 2. Diabetic macular edema. (Photo courtesy of the National Eye Institute, National Institutes of Health.)

reported that 4.4% of patients had severe nonproliferative DR and 6.1% had proliferative DR. More than 6% of the cohort had clinically significant macular edema, with an overall macular edema rate of 10.4% (Figure 2).

NO AGE-, GENDER-RELATED DIFFERENCES

There were no age- or gender-related differences seen in this study. After adjusting for diabetes duration, DR prevalence was similar in those with type 1 and type 2 diabetes.

“Our sample of Latinos, primarily of Mexican ancestry, reflects the largest Latino group in the United States,” said Dr. Varma. While Latinos aged 70 to 79 years had a higher DR prevalence versus younger Latinos, aged 40 to 49 years, the prevalence was lower in those aged 80 years or more versus those in the 70- to 79-year-age group.

SOME DATA CONTRADICTORY

The researchers noted that data comparing the rates of DR in Latinos with non-Hispanic whites is contradictory. For instance the San Antonio Heart Study found a twofold increased risk in Mexican-Americans versus whites but the San Luis Valley Diabetes study observed a lower prevalence in DR among Hispanics versus non-Hispanic whites (42% vs 54%, respectively).

Another study, the NHANES III, found a higher prevalence of DR in Mexican-Americans (33.4%) versus non-Hispanic whites (18.2%) but similar to that of non-Hispanic blacks (26.5%) “In more recent studies on Latinos in Arizona and in our study in Los Angeles, the overall prevalence rates of any DR were similar to those of non-Hispanic whites in Beaver Dam,

Wisconsin,” Dr. Varma and colleagues wrote.

“However, when comparing the prevalence of proliferative DR and any macular edema, Latinos in both the Proyecto VER study and in our study have higher rates than non-Hispanic whites in the Beaver Dam study. Thus it appears that Latinos have a higher rate of more severe vision-threatening DR when compared with non-Hispanic whites.”

Dr. Varma said that future research needs to examine if this increased risk of diabetes and proliferative diabetic retinopathy is genetic or due to poor/lack of access to care. “We also need to study the incidence and progression of DR in Latinos specifically,” he said.

MORE STUDIES NEEDED

The authors concluded that the estimates for DR in LALES can help health care policy makers plan eye care and rehabilitative services and to estimate the cost of DR related to vision loss and blindness. They added that the long-term visual outcomes of high rates of DR must be looked at in longitudinal incidence and progression studies.

“With the growing and aging Latino population, it is likely that there will be an increased need for care and the implementation of culturally appropriate screening and prevention programs directed at Latinos,” Dr. Varma said.

The biggest challenge facing clinicians with regard to treating microvascular complications, Varma said, is a lack of time to educate patients regarding their disease and care. “There is also a lack of comprehensive treatment centers that can screen and treat the various diabetic complications,” he said. ■

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