

Retinopathy Predicts Cardiovascular Mortality in Patients With Type 2 Diabetes

There were significant differences, however, with regarding to sex-specific associations.

REVIEWED BY MARKKU LAAKSO, MD

Proliferative retinopathy in men and women with type 2 diabetes, and background retinopathy in women, predicted all-cause, cardiovascular disease (CVD), and coronary heart disease (CHD) death, according to a report in *Diabetes Care*.¹

“These associations were independent of current smoking, hypertension, total cholesterol, HDL cholesterol, glycemic control of diabetes, duration of diabetes, and proteinuria,” wrote Markku Laakso, MD, and colleagues, from the Department of Medicine, University of Kuopio, Kuopio, Finland. “This suggests the presence of common background pathways for diabetic microvascular and macrovascular disease other than those included in the conventional risk assessment of CVD.”

The Finnish group sought to investigate the association of retinopathy with the risk of all-cause, CVD, and CHD mortality in type 2 diabetic patients in a population-based, 18-year, follow-up study. The researchers wanted to put particular emphasis on sex differences.

FINNISH COHORT

The cohort included 425 Finnish men and 399 women, who all had type 2 diabetes, and all were free of CVD at baseline. Using standardized clinical ophthalmoscopy, patients were categorized as having no retinopathy, background retinopathy, or proliferative retinopathy. The study endpoints were all-cause, CVD, and CHD mortality.

Dr. Laakso and colleagues wrote that adjusted Cox model hazard ratios (HRs), all with 95% confidence inter-

vals, of all-cause, CVD, and CHD mortality in men were: 1.34 (0.98-1.83), 1.30 (0.86-1.96), and 1.18 (0.74-1.89), respectively, for background retinopathy, and 3.05 (1.70-5.45), 3.32 (1.61-8.78), and 2.54 (1.07-6.04), respectively for proliferative retinopathy. In women, the HRs were: 1.61 (1.17-2.22), 1.71 (1.17-2.51), and 1.79 (1.13-2.85), respectively for background retinopathy and 2.92 (1.41-6.06), 3.17 (1.38-7.30), and 4.98 (2.06-12.06), respectively, for proliferative retinopathy.

“Our study showed that proliferative retinopathy predicted all cause, CVD, and CHD death in both sexes of type 2 diabetic subjects who were free of CVD at baseline,” Dr. Laakso and colleagues wrote. “Furthermore, overall and background retinopathy predicted all these categories of mortality in women, suggesting a sex difference in the effect of nonproliferative retinopathy on mortality.”

The investigators noted that after adjusting for hyperglycemia, duration of diabetes, elevated blood pressure, dyslipidemia and obesity, the HRs of mortality for retinopathy were not markedly influenced. They said that the sex difference observed in the study agrees with other large population-based cohort studies and warrants closer examination. ■

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Juutilainen A, Lehto S, Ronnemaa T, et al. Retinopathy predicts cardiovascular mortality in type 2 diabetes men and women. *Diabetes Care*. 2007;30:292-299.