

Risk factors and outcomes of delayed presentation of diabetic retinopathy patients to a county hospital

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Abstract

Purpose: With the increasing prevalence of diabetes, understanding the risk factors for presenting in later stages of diabetic retinopathy (DR) is crucial for developing strategies to address this delay in care. We performed a retrospective cohort study to identify risk factors and evaluate outcomes of patients with delayed presentation and advanced DR in a safety-net county hospital population.

Methods: Baseline characteristics, disease severity, referral source, and other information were collected for 562 patients who presented with a new diagnosis of diabetic retinopathy (DR). Delayed presentation was defined as moderate or severe nonproliferative diabetic retinopathy (NPDR) or proliferative diabetic retinopathy (PDR) at the initial visit. Comparisons between patient groups were performed with Chi-square or Fisher's exact test for categorical variables. Linear and logistic regression modeling with general estimating equations to account for patients having two eyes were used to compare eye-level outcomes. This retrospective cohort study was approved by the Colorado Multiple Institutional Review Board.

Results: Lack of a primary care provider (PCP) was highest in patients who presented initially with PDR (28.8%), compared to 14.3% in moderate/severe NPDR, 12.4% in mild NPDR, and 7.6% in no DR groups ($p < 0.001$). Only 69.4% of patients with a PCP had an ophthalmology screening referral. Highest lack of referral (47.2%) was seen in the PDR group ($p = 0.002$). PDR patients were also more likely to be uninsured (19.2%) compared to no and mild DR groups, with rates

of 7.6% and 9.0% respectively ($p = 0.001$). The PDR group had worse initial and final visual acuities ($p < 0.001$).

Conclusions: Several risk factors were noted for delayed presentation of diabetic retinopathy including lack of PCP, lack of eye screening referral, and uninsured/underinsured status.

Patients with advanced DR at presentation had worse final visual outcomes despite aggressive treatment. Improved screening programs targeting these at-risk populations are essential for improving outcomes.