

## Six-Year Retrospective Follow-Up Study of Safe Screening Intervals for Sight-Threatening Retinopathy in Patients with Diabetes Mellitus

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### Abstract

#### **Background:**

We estimate safe screening intervals for sight-threatening diabetic retinopathy (STDR).

#### **Methods:**

A 6-year retrospective follow-up study to review screening results of two cohorts of patients with diabetes mellitus (DM) was conducted; a cohort free of diabetic retinopathy (DR) and a cohort with mild nonproliferative diabetic retinopathy (NPDR) at baseline. Patients had been screened by means of a nonmydriatic retinal camera. Baseline age, sex, and diabetes characteristics were also collected. Statistical analysis was based on life-table method of risk estimation.

#### **Results:**

A total of 286 patients with DM free of DR and 144 patients with mild NPDR at baseline were included in the study. For patients free of DR, the probability of remaining free of STDR was 97% (95% confidence interval [CI] 94–99%) at the end of the fourth year. In this cohort of patients, those with type 2 DM were more likely to progress to STDR than those who had type 1 DM ( $p < .01$ ). For patients with mild NPDR, the probability of remaining free of STDR dropped to 94% (95% CI 88–97%) at the end of the second year, and it was still 100% at the end of the second year for those with a glycosylated hemoglobin level  $\leq 7.5\%$  at baseline ( $p < .05$ ).

#### **Conclusions:**

Screening at a 3–4 year interval for diabetes patients free of DR is safe because of their low risk of developing STDR. Patients with mild NPDR require screening at a 1 year interval, or at a 2 year interval with good metabolic control.

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**Abbreviations:** (CI) confidence interval, (DM) diabetes mellitus, (DR) diabetic retinopathy, (NPDR) nonproliferative diabetic retinopathy, (PDR) proliferative diabetic retinopathy, (STDR) sight-threatening diabetic retinopathy, (T1DM) type 1 DM, (T2DM), Type 2 DM (VA) visual acuity

**Keywords:** complications, diabetes mellitus, diabetic retinopathy, follow-up studies, mass screening, risk factors, sight-threatening diabetic retinopathy

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