Diabetic retinopathy in Lesotho

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**Abstract.** Diabetic retinopathy was found in 47.8% of 153 consecutive diabetic clinic patients examined in Maseru, Lesotho. Background retinopathy was present in 78% of patients with retinopathy, compared with 22% with proliferative changes. While no difference in prevalence of diabetic retinopathy could be demonstrated between the sexes, an association between diabetic retinopathy and hypertension and peripheral neuropathy was observed. The prevalence and severity of diabetic retinopathy was significantly related to the duration of disease. The pitfalls inherent in comparing the results of the current study with other published reports are considered. Better epidemiological surveys are required to determine the true prevalence of diabetic retinopathy among different racial, ethnic, religious, and tribal groups in Africa.

**Introduction**

Diabetic retinopathy (DR) is a serious complication of diabetes mellitus worldwide, accounting for 10% of all cases of blindness in the United States (Coogan, 1964) and 7% in Great Britain (Sorsby, 1966). Previous studies in Africa (Osuntokun, 1969; Steel et al., 1977; Jackson et al., 1966; Seftel et al., 1966; Levin et al., 1973) have reported differences in the prevalence and severity of diabetic retinopathy among different racial, ethnic, religious and tribal groups. The purpose of the current prospective study was to determine the prevalence and severity of diabetic retinopathy in a diabetic clinic population in Lesotho, and to compare these results with those from other African countries.

**Material and methods**

One hundred and fifty-three consecutive outpatients examined in the Diabetic Clinic of the Queen Elizabeth II Hospital comprised the population base for the current prospective study. A detailed protocol was completed for each patient, summarizing the general medical and diabetic history, and including a complete ophthalmic examination. Following dilatation of the pupils with 1% tropicamide and 10% neosynephrine eye drops, all fundi were carefully examined for signs of diabetic retinopathy by an experienced...
ophthalmologist using direct and indirect ophthalmoscopy. Diabetic retinopathy was classified as (1) background retinopathy characterized by microaneurysms, dot and blot hemorrhages, and hard exudates, or (2) proliferative retinopathy characterized by background retinopathy plus fibrovascular proliferation of new vessels of the disc (NVD) and/or new vessels elsewhere (NVE) (Diabetic Retinopathy Study Research Group, 1976). Following completion of the study, all protocols were analyzed, and statistical significance was evaluated, using the four-fold test and Chi-square analyses.

Results

The characteristics of the diabetic clinic population examined in the present study are summarized in Table 1. The study comprised 95 females and 58 males. Of the 153 patients examined, 73 (47.8%) were found to have an associated diabetic retinopathy. Background retinopathy was found in 57 patients (78%), while proliferative retinopathy was present in 16 patients (22%). The prevalence of diabetic retinopathy in diabetic males – 29 of 58 patients (50%) – did not differ significantly from diabetic females – 49 of 95 patients (46.3%). Maturity-onset diabetes was present in 121 patients (79%), while juvenile-onset diabetes occurred in 32 patients (21%). Associated hypertension (diastolic blood pressure > 100 mmHg) was found in 55 patients (35.9%), peripheral neuropathy in 57 patients (37.3%), and arteriosclerotic vascular disease (ASVD) in 2 patients (1.3%). One hundred and three patients (67.3%) were controlled with oral hypoglycemic agents, 43 patients (28.1%) with insulin, and 7 patients (4.6%) with diet alone. Table 2 demonstrates a highly significant association (P<0.001) between duration of disease and severity of diabetic retinopathy. Only 25% of patients with known diabetes for less than 5 years had retinopathy, compared with 50% of patients with diabetes for 5 to 9 years, and more than 80% of patients with diabetes more than 10 years. It is also highly significant (P < 0.001) that the more serious proliferative retinopathy increased with duration of disease. However, for each time interval, there was no statistically significant difference in severity of diabetic retinopathy between hypertensive and normotensive diabetics, or diabetics with or without peripheral neuropathy. Table 3 compares the duration and severity of diabetic retinopathy in the present study in Lesotho with published reports from other African countries.

Discussion

The present study addressed the question whether the prevalence and severity of diabetic retinopathy differs among different racial, ethnic, religious and tribal groups in Africa. This question is difficult to answer, due to the inherent pitfalls in comparing published results of different investigators from different countries. These pitfalls include the relative accuracy and reliability