Diabetes. It is likely that those tested were clinically felt to be at greater risk for having diabetes. Thus, we cannot predict precisely what will happen as the new ADA threshold achieves acceptance and as results in the 126–139 mg/dl range are followed up more aggressively. However, our analysis suggests that in a large stable integrated group-model health maintenance organization, lowering of the diagnostic threshold for type 2 diabetes to FPG ≥126 mg/dl would increase the number of individuals diagnosed as having diabetes by ~6.4%. This estimate will be useful in anticipating the epidemiologic and clinical impact of the suggested new diagnostic criteria for diabetes.

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References

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Response to Jain

Dr. Sunila Jain’s finding (1) of a 20% frequency of diabetes in 400 patients seen at a tertiary referral center for dry eyes is consistent with a clinical impression of a high frequency of dry eyes in people with or without diabetes. Age range and type of diabetes are not described by Dr. Jain, so it is difficult to extrapolate the findings from his clinic to a more general population of people with diabetes. Thus, 20% may be an inaccurate representation of the frequency of dry eyes in the general population of people with diabetes. Furthermore, Dr. Jain’s findings do not provide information on whether the rate in those with diabetes is similar to or higher than the frequency in people without diabetes, after accounting for age and sex.

Based on the low frequency of Sjogren’s syndrome in Dr. Jain’s clinic, it is assumed that most of the patients seen were older and had type 2 diabetes. In an earlier study by Binder et al. (2) of an unselected group of type 1 diabetic patients, 55% of the patients showed signs of dry eyes some of the time. The high rate of antinuclear antibodies in this study suggested the symptoms might have an immunological basis.

Few population-based data exist for the rates of dry eyes in people with diabetes. In the Beaver Dam Eye Study (3), a population-based study of individuals 43–86 years of age, patients with type 2 diabetes were more likely to respond affirmatively (19.8%) to the question, “For the past 3 months or longer, have you had ‘dry eyes’ (foreign body sensation with itching and burning, sandy feeling, not related to allergy)?” than those without diabetes (13.9%, P = 0.04). The difference between people with diabetes (21.3%) and without (10.8%) was most pronounced in those in 46–69 years of age.

Dry Eyes in Diabetes

Cataract and retinopathy are well-known ocular complications of diabetes. Recently, problems involving the ocular surface, dry eyes in particular, have been reported in diabetic patients (1). These patients suffer from a variety of corneal complications, including superficial punctate keratopathy, trophic ulceration, and persistent epithelial defect (2). Dry eyes are an important contributor to these problems. The mechanism responsible for dry eyes is unclear, but autonomic dysfunction may be responsible (3). Aldose reductase, the first enzyme of the sorbitol pathway, may also be involved. The oral administration of aldose reductase inhibitors has been shown to improve the tear dynamics significantly (4).

I reviewed the cases of 400 patients with dry eyes referred to a tertiary referral center. Of these, 80 (20%) had diabetes. These patients were studied in more detail. Dry eyes were suspected on the basis of a history of ocular discomfort, including soreness, gritty sensation, itchiness, redness, and contact lens intolerance.

The condition was confirmed by corneal staining with fluorescein dye, a Schirmer test (value ≤5 mm in 5 min), and tear film break-up time (value ≤10 s). Only two (2.5%) of these patients had Sjogren’s syndrome, which could account for the dry ocular surface. In all the other patients, no other condition was found to be a risk factor for dry eyes, and it was therefore presumed to be of diabetic origin.

All the patients responded to commercially available tear substitutes. This simple treatment improved the perceived quality of life of these patients.

Diabetes and dry eyes appear to be a common association. Further studies need to be undertaken to establish an etiologic relationship. However, examination for dry eyes should be an integral part of the assessment of diabetic eye disease.

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References