



## The Role of the Ophthalmologist in Educating the Diabetic Patient

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In their very well-written paper in this issue of *IMAJ*, Siegel et al. [1] claim that good glycemic control is associated with better preservation of visual acuity, and propose a role for the ophthalmologist in educating patients about their systemic parameters as complementary to their diabetic retinopathy treatment.

This study verifies previously known correlations between HbA1c level  $\leq 7\%$ , serum cholesterol level  $< 200$  mg/dl, blood pressure  $< 130/85$  mmHg and better preservation of vision in patients with type 2 diabetes mellitus [2-6]. In a recent study from Wisconsin, 474 diabetic persons were followed from diagnosis through 4-14 years. Improvement in diabetes care leading to better glycemic control may have contributed to the much lower prevalence and less severe retinopathy observed than expected on the basis of a previous report from the same region of Wisconsin [7]. However, patients' awareness of their glycemic control as manifested in the study by Dr. Siegel's team warrants particular attention. Only 43% of the patients understood the significance of HbA1c (although 98% of them had undergone this analysis). This interesting observation, as emphasized by the authors, indicates lack of patient education regarding the importance of glycemic control, as well as inadequate awareness in monitoring their disease and lowering the risks of its possible complications. Moreover, the awareness of plasma levels of HbA1c in the hospital group resulted in lower levels of HbA1c compared to the community group and, as expected, a correlation was found between HbA1c  $\leq 7\%$  and preservation of visual acuity. This fact further underscores the importance of patients' awareness for the treatment of their diabetic retinopathy. This is in accordance with the previously published paper, showing that well-informed and motivated patients were more persistent in reaching and maintaining target values of the main risk factors of diabetic complications [8]. Awareness to risk factors such as hypertension, high levels of low density lipoprotein, cholesterol and diabetes mellitus was evaluated in two large cohorts of persons with a history of myocardial infarction and stroke. It was found that among those aware of their diagnosis, pharmacological treatment for diabetes mellitus increased from 80% to 93%, leading of course to a better glycemic control and subsequent reduction of further risks [9].

It was also shown previously that only about one-third of

diabetic patients adhere to screening, monitoring and treatment guidelines [10]. Among 2308 persons with diabetes, 813 (35%) did not follow the vision care guidelines of the American Diabetes Association or of the American Academy of Ophthalmology vision care guidelines for diabetes; two-thirds of this group reported no eye examination in the year before the interview, and one-third had an undilated examination. Non-adherence was linked to several factors that cannot be modified, such as younger age, type 2 diabetes with or without insulin use, and shorter diabetes duration, but also to modifiable factors such as last eye examination performed by an optometrist or other non-ophthalmologist, less practical knowledge about diabetes, and no prior formal diabetes education. Changes in these modifiable factors could enhance the early detection of diabetic retinopathy. The impact of such modification was actually shown by Polonsky and colleagues [11], who demonstrated that a brief educational intervention consisting of a 90 minute small-group workshop on diabetes care, which included on-site metabolic testing that provided patients with immediate results and personalized feedback to understand those results, was effective in encouraging patients toward better self-management and more regular metabolic testing and to become more aware of their own test results. The awareness of only about a third of patients to the disease was also found by Caliskan et al. [12]. In their study the main information resource was found to be hospitals, then the media, followed by the primary care physician. Adherence to both lifestyle and medication regimen is very important and should be actively supported by all members of the healthcare team. Diabetes educators also play a vital role in counseling patients with type 2 diabetes on strategies to reduce their risk of hyperglycemic complications, and in providing support, education and guidance [13]. Another way of increasing the awareness and improving glycemic control is by self-monitoring of blood glucose. Patients need to understand why they are being asked to self-test, what their glycemic targets are, and what they should do based on the results of self-monitoring. Patients must also be taught proper techniques and must be given specific recommendations regarding frequency and timing of self-monitoring [14].

Siegel and her colleagues recommend, correctly, that the ophthalmologist take a more active role in educating patients

with diabetes since the potential risk of vision loss may motivate them to comply with the recommended lifestyle and medical treatment. The information reported in Dr. Siegel's paper and in the other reports cited here points to inadequate patient education, and consequently, insufficient patient responsibility for active participation in the management of their disease. Ophthalmologic care should definitely assist in overall patient care and should include education aimed at improving patient compliance and treatment outcome.

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