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Perspectives on diabetic retinopathy.

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PURPOSE: To review the evolution of the understanding of diabetic retinopathy (DR) and methods of treating DR, the present clinically relevant practice for eye disease in patients with diabetes mellitus, and trends in clinical patient care over the next 3 to 5 years. DESIGN: Tabular review and presentation of clinical trials contributing to the understanding and treatment of DR and the author's philosophy of care for the patient with diabetes. RESULTS: Diabetic retinopathy is a microvascular complication of diabetes mellitus that is a significant cause of new-onset blindness. The Diabetic Retinopathy Study was the first multicentered, randomized, clinical trial in ophthalmology. This study provided the scientific evidence for treatment of DR with scatter (panretinal) photocoagulation, and led to the funding of other multicentered clinical trials, including the Early Treatment Diabetic Retinopathy Study, which greatly elucidated the natural history of DR and firmly established laser photocoagulation as treatment for proliferative diabetic retinopathy (PDR) and diabetic macular edema. The Diabetes Control and Complications Trial and United Kingdom Prospective Diabetes Study established the value of intensive glycemic control in reducing the risk of onset and progression of DR and other microvascular complications of diabetes. CONCLUSIONS: Severe vision loss and moderate vision loss from diabetes are essentially preventable with timely detection and treatments, careful long-term follow-up and comprehensive diabetes mellitus care firmly based on clinical evidence. Future treatments, as outgrowths of further understanding of the biochemical basis of the disease, will aim at curing or preventing retinal complications from diabetes.

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