New approaches in the diagnosis and management of diabetic retinopathy

Diabetic retinopathy (DR) presents one of the greatest challenges currently faced in ophthalmology by both patients and clinicians. Simply by virtue of the number of people impacted and the acceleration in the development of diabetes in larger populations throughout the world, the problem of diabetic complications has taken on new urgency in recent years. Because of the immediate impact on quality of life, activities of daily living, and a person's ability to work and live independently, DR tops the list of concerns about the damage wrought by the explosive growth of diabetes.

In parallel with the epidemiologic shifts underway in this disease, tremendous progress has been made in understanding the pathogenesis of DR, diagnosing it at earlier stages, and achieving improved patient outcomes with pharmacologic therapies. This has been the result of focused efforts across the spectrum of clinical care, research, and technological development. However, as the scope of the problem expands to epidemic proportions, the need for rapid progress toward prevention, early detection, and effective disease management is greater than ever.

In this special issue of *Annals of Eye Science*, a distinguished panel of investigators explores the key areas that determine our ability to advance the knowledge in the field of DR as well as achieve better control of the disease, with the ultimate goal of preventing vision loss in as many people as possible. Looking at the root causes and predisposing factors for the development of DR, Dr. Burdon and co-authors review the current understanding of the genetic determinants of DR manifestation and progression. Drs. Vujosevic and Toma describe the role of inflammation in DR, increasingly acknowledged to play a central role in disease development and possibly revealing a need for therapy targeted at this set of molecular and cellular pathways. Dr. Waheed and co-authors discuss the value and limitations of optical coherence tomography angiography, a new non-invasive modality that allows visualization of retinal vascular alterations that are at the heart of the disease. Dr. Chao and colleagues review new pharmacotherapies that aim to address shortcomings of existing treatments. Drs. Coassin and De Maria discuss the developing trends in the indications for surgical intervention in DR and novel techniques that have made surgery safer and more effective than ever before. Finally, Drs. Singh and Stewart delve further into current considerations in surgical management of DR.

As this body of work highlights, we have seen impressive progress in the study of many aspects of DR that surely will benefit patients and improve lives, but much work remains to be done. It is hoped that the articles in this special issue will stimulate further thought and discussion that will enable continued success in deepening our understanding of this major ophthalmic disease and our means of managing it.

Footnote

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