EDITORIAL

Current Management Options and Future Trends in Diabetic Retinopathy

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Diabetic Retinopathy is one of the leading causes of blindness in the world. It has emerged as an epidemic in developing countries. There is continuous focus on finding new strategies to prevent and control blindness from diabetic retinopathy.

Most important risk factors for the development and progression of DR are the type and duration of diabetes, hyperglycemia and hypertension. Others factors like microalbuminuria and dyslipidemia are also important risk factors for the progression of DR.

Several systemic drugs have been developed for the prevention and treatment of DR. The protein kinase C inhibitor, ruboxistaurin mesilate, administered orally was effective in halting DME and vision loss but not in preventing the progression of DR [1]. Another drug, long-acting somatostatin analogue, octreotide, given intramuscularly every 4 weeks in moderate-to-severe NPDR to low-risk PDR, was not effective in arresting DR progression. However recently two classes of drugs: renin-angiotensin system (RAS) blockers [2] and fenofibrate (a hypolipidemic drug) [3] have emerged as potential systemic treatments for DR. Furthermore, calcium dobesilate monohydrate (CaD) appears to be a promising treatment for DR, though it is not widely used in clinical practice [4].

Laser has remained the mainstay of treatment for quite sometime. Pan retinal photocoagulation and focal photocoagulation have been used in recent past. However recently Pattern scan laser (Pascal), Subthreshold diode micropulse laser (SDM), Retinal rejuvenation therapy (2RT) and Selective retina therapy (SRT) are new treatment options that promise reduced laser-induced side effects like constriction of visual fields, reduced dark adaption, and reduced color and contrast perception [5].

Anti-VEGF agents Pegaptanib (Macugen), Ranibizumab (Lucentis), Bevacizumab (Avastin), Aflibercept (Eylea) have been used effectively at different times. The new treatment options now include Anti-VEGF agents plus focal/grid laser therapy. Intravitreal anti-VEGF therapy is generally safer and visual acuity could be maintained with tapering the injection frequency over time [6].

There is also a recent interest in the use of steroid implants like Dexamethasone sustained-release intravitreal implant (Ozurdex) Fluocinolone acetonide implant (Retisert). These implant therapies tend to reduce the frequency of intravitreal anti-VEGF injections and less associated with cataract formation and increased intraocular pressure than the previous steroid agents[7].

Similarly transconjunctival sutureless 23- or 25-gauge vitrectomy has gradually taken over the conventional 20-gauge vitrectomy reducing surgical time and making the rehabilitation of patients faster [8].

What future holds for stem-cell therapy in diabetic retinopathy remains to be seen. Most studies so far have attempted to alleviate typical abnormalities of early retinopathy, including vascular

hyperpermeability, capillary closure and pericyte dropout. Success was reported with adult stem cells (vascular progenitors or adipose stem cells), as well as induced pluripotent stem cells from cord blood [9].

Regardless of the modern therapeutic options and novel preventive strategies being investigated for diabetic retinopathy, there is no alternative to tight glycaemic control, as well as comprehensive patient, professional and public health education and a strong networking between Diabetologists/physicians and Ophthalmologists.