

Practicing Treatment Protocols of Proliferative Diabetic Retinopathy in Developing Countries

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Editorial

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Abbreviations: DM: Diabetes Mellitus; DR: Diabetic Retinopathy; PDR: Proliferative Diabetic Retinopathy; ETDRS: The Early Treatment Diabetic Retinopathy Study; NPDR: Non Proliferative Diabetic Retinopathy; PRP: Pan Retinal Photocoagulation; DRS: Diabetic Retinopathy Study; DME: Diabetic Macular Edema

Editorial

Diabetes Mellitus (DM) is global epidemic and eye care professionals are facing unavoidable challenge to combat blindness related to Diabetic Retinopathy (DR). Although visual impairment can occur due to diabetic maculopathy but Proliferative Diabetic Retinopathy (PDR) is considered to be the prime cause of severe visual loss in diabetic individuals. PDR may progress to be complicated by vitreous bleed, tractional retinal detachment and ultimately blindness if not treated promptly. Prompt management of risk factors for DR is of prime importance however proper screening and treatment of DR surely help to reduce visual impairment and blindness. Various options are available at present to treatment PDR. The Early Treatment Diabetic Retinopathy Study (ETDRS) reported that eyes with severe Non Proliferative Diabetic Retinopathy (NPDR) are also benefited from early Pan Retinal Photocoagulation (PRP) [1]. Diabetic Retinopathy Study (DRS) proved benefit of PRP in high risk PDR, reducing the risk of severe vision loss by 50% [2]. Recently anti VEGFs emerged as an alternate option for treating PDR with better preservation of visual functions [3,4]. Photocoagulation laser, although is one of time tested proven effective treatment modality for PDR but it is salvaging the central retina (macula) at the cost of destroying peripheral retina and peripheral visual

functions. Laser has many adverse effects including compromised night vision, peripheral visual fields, contrast sensitivity and risk of precipitating or worsening of macular edema. Such effects may cause loss of driving license and compromised quality of life. However newer versions of laser are also in the scene which claims to be less destructive with minimum compromise of visual functions. Anti VEGF have the advantage of being non-destructive (better preservation of visual functions) and with additional benefit of treating associated Diabetic Macular Edema (DME). However anti VEGF need to be repeated at frequent intervals with inherited risk of intra-ocular intervention. Skill related complications can be minimized in experienced hands but endophthalmitis have been reported even after adopting best protocols of intra-vitreous injections [5].

Ophthalmologists are bound to practice evidence based medicine but unfortunately the globally accepted standard treatment protocols may not be adopted in all countries or regions of the world due to various factors. Some of the factors affecting practice patterns of ophthalmologists are availability of trained human resources, availability of modern technological gadgets, different socio-economic conditions, ethnicity, compliance with recommended treatment options and follow up, control and awareness of risk factors for DR. These factors may prevail more dominantly in developing countries and internationally recommended protocols may not be adoptable in toto. Unfortunately most of developing countries rely on globally produced data due to unavailability of local studies and surveys. It is worthy to note that most of global evidence comes from developed countries. The practice patterns to treat PDR

don't need to be essentially similar all over the globe. Safety, efficacy and cost effectiveness of same treatment strategy may vary to some extent in different regions and communities e.g in developed countries, while choosing treatment option for PDR, cost of treatment may not be significant factor in contrast to developing countries.

Eye care professionals shall choose the best among the available treatment options for PDR, keeping in mind the individual's compliance, socioeconomic status, awareness level & control of risk factors for DR. As a health professional, we need to treat the patient not just the eye. National consensus to treat different pathologies based on available local evidence, keeping respect for globally accepted standard protocols is the need of day. "National Retina Specialists Panel" in Pakistan recommended (national guidelines for laser application in diabetic retinopathy) to do laser (PRP) in DR for all cases with features of severe NPDR, very severe NPDR and low risk PDR in addition to cases with high risk PDR. This committee also advised to perform PRP (up to 1500 burns) for moderate NPDR if poor compliance for follow up is expected. Such consensus was achieved at national level keeping in view the patient accessibility to eye care services, compliance of patient, short of human resource to treat surgical complications of DR, poor visual prognosis after surgical interventions, low level of awareness and status of control of risk factors in the country [6]. Nationally evolved treatment protocols may be more beneficial and cost effective in terms of long term management of patients in our community.

Although the efficacy, safety and cost effectiveness of available options to treat PDR is debatable but this statement may be more palatable when local or regional evidence is lacking. Eminent ophthalmologists shall focus to produce local evidence to prove the safety, efficacy and cost effectiveness of these treatment options in their communities before drafting national guidelines to treat specific pathology. Older time tested options may need to be locally compared to promising newer emerging options. However in individuals who can afford and expected to show better compliance as per standard international protocol must be advised the best available option in terms of safety and efficacy. Anti-VEGFs may soon become well accepted preferred standard protocol for treating PDR in developed countries but may not prove its cost effectiveness in developing countries. Factors like cost and poor compliance, may affect practicing patterns of ophthalmologists. Time tested, less expensive option of PRP may continue to survive longer

as the primary treatment strategy for PDR in developing countries. However combining anti VEGF injections to PRP surely augment efficient treatment of PDR [7], reduce of associated macular edema [3] and also buy us time to prevent vitreous bleed till the laser sessions are completed.

To conclude, the treatment modalities may differ or may continue to overlap in developing countries for longer time period in contrast to developed countries especially at the time of transition when new promising better options are emerging as standard treatment protocol while previously proven effective treatment options are in practice.

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