

NAMS Scientific Symposium on Regenerative Medicine
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REGENERATIVE THERAPY IN OPHTHALMIC DISORDERS

ABSTRACT

Regenerative medicine in the form of cell therapy is a promising way of restoring the function of a permanently damaged tissue, which is best understood by the progress made in the field of ophthalmology. Regeneration of severely damaged ocular surface by transplantation of cultured limbal epithelial cells is one of largest form of cell therapy with a success of nearly 70% at the end of a decade. Unlike the success noted in ocular surface epithelium, regeneration of retina for end stage retinal diseases like age related macular degeneration, diabetic retinopathy, retinitis pigmentosa, ganglion cell death in glaucoma is still an unmet need. Retina, being an extension of central nervous system, poses several challenges of neural regeneration such as the need for 3D reorganization of cells, interacting and networking with the other neural cells, intactness of the pathways that carry the impulses to the brain and many other poorly understood mechanisms of neural network and function. Another area of ocular morbidity is the prevalence of dry eye, a clinical condition which is increasing all over the world. Drawing parallels to the progress made in regeneration of exocrine and endocrine pancreas and salivary glands, regeneration of lacrimal gland would open up doors for treating the highly prevalent ocular morbidity due to dry eye diseases.