



Stem Cells in Glaucoma Management

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Abstract

Glaucoma is the leading cause of preventable blindness worldwide. Despite tremendous advances in medical and surgical management of glaucoma in the recent years, the prevalence of glaucoma related blindness is anticipated to increase in the future decades because of the aging population. Stem cells have the potential to change the glaucoma management in several ways. There are several areas of active research to use stem cell-, and of course gene-, therapy in the field of glaucoma. One well-known target is to regenerate and repopulate the retinal ganglion cells, which are the main site of damage in glaucoma. Currently, several successful animal model of such a treatment are available. Another area of active research is to use stem cells as a source for neuro-protective agents for retinal ganglion cells; this is a very promising approach to the glaucoma treatment as neuro-protection is a long desired option for the management of the disease. Last but not the least, there are highly interesting recent publications on the use of stem cell to repopulate the trabecular meshwork with healthy, functional cells. This choice seems to be an etiologic treatment for the most common type of glaucoma, namely primary open angle glaucoma, in which increased resistance of trabecular outflow to drainage of aqueous humor is the underlying cause of increased intraocular pressure and consequent optic nerve damage. In this lecture, the above-mentioned topics would be covered briefly and some potential area for future researches would be suggested with a local perspective.

Keywords: Glaucoma, Stem cell, Retinal ganglion cells.

Oral Presentation

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