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Stem cell therapy in cases of retinitis pigmentosa

Abdelhakim Mohamed Safwat
Al-Azhar University, Egypt

Retinitis pigmentosa is a common label for a heterogeneous group of heritable retinal degenerative diseases that result in progressive visual loss secondary to photoreceptor cell death. Of the 2 photoreceptor cell types in retina (Rods and cones), these diseases primarily affect rods; the cones die an “innocent bystander” death. This is reflected in the natural clinical course of Retinitis pigmentosa, which usually begins with loss of rod-mediated night vision and advances over the years with progressive loss of the peripheral visual field and ultimately the loss of central, cone-mediated vision. There is concomitant attenuation of the retinal vasculature. It is thought that vascular loss follows decreased metabolic demand by the photoreceptors. Currently no definitive treatment for Retinitis pigmentosa exists, although nutritional approaches may slow some forms of this disease. Mesenchymal stem cells (MSCs) are progenitors of all connective tissue cells. In adults of multiple vertebrate species, MSCs have been isolated from BM and other tissues, expanded in culture and differentiated into several tissue-forming cells. A number of studies have shown that bone-marrow-derived MSCs can differentiate into cells expressing photoreceptor proteins. In this study we compare between two types of stem cells to restore vision in RP patients. Results are compared according to visual outcome, investigations and complications. Finally the use of stem cell is useful in cases of Retinitis pigmentosa and may be other retinal dystrophies.

Biography

Abdelhakim Mohamed Safwat is currently an Assistant Lecturer of Ophthalmology Department, Al-Azhar Univ. He is a member in Egyptian society of ophthalmology (EOS), and Egyptian Vitreoretinal Society. He got his BSc degree in Medicine in 2003, Master's in ophthalmology (treatment modalities in age related macular degeneration), and Diploma in uses of laser in medicine. His studies focus on regenerative medicine in ophthalmology mainly age related macular degeneration and Retinitis pigmentosa. He participated in scientific activities like: Speaker in international neuropsychiatric conference of Alexandria University, annual conference of Clinical Pathology department of Cairo University, Egyptian Vitreoretinal society meeting 2014, International Conference of Stem Cell and Nanotechnology of Ainshams University, Stem Cell Scientific Meeting in National Institute of Research, and 2nd Annual World Congress of Geriatrics and Gerontology 2014.

abdelhakimsafwat@gmail.com

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