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Uses of mesenchymal stem cell in cases of retinitis pigmentosa

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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 use adult bone marrow mesenchymal stem cell to restore vision in RP patients, patients were divided in two groups; one had intravitreal injection and the other had injection after vitrectomy. Results are compared according to visual outcome, investigations and complications. Finally the use of mesenchymal stem cell is useful in cases of retinitis pigmentosa and other retinal dystrophies.

Biography

Abdelhakim Mohamed Safwat, Medicine Doctor, now is Assistant Lecturer of Ophthalmology Department, Al-Azhar University. He is a Member in Egyptian society of ophthalmology (EOS), Egyptian Vetrioretinal Society. He got BSc in Medicine 2003, Master in Ophthalmology (treatment modalities in age related macular degeneration), and Diploma in uses of laser in medicine. His working experiences: Internship in Al-Azhar Univ. hospitals for one year, Resident in ophthalmology department for 3 years, fellow in international eye hospital for 3 years and Assistant Lecturer up till now. His studies focus on regenerative medicine in ophthalmology mainly age related macular degeneration and retinitis pigmentosa. His scientic activities includes: Speaker in international neuropsychatric 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 and Stem Cell Scientific Meeting in National Institute of Research.

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