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Stem Cell Therapy for Corneal Regeneration in the eye

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Stem Cells extracted from oneâ??s own bone marrow or adipose tissue to the injured area for promoting better healing and regeneration of the cells of the damaged area of eyes

Stem Cell Therapy for Corneal Regeneration- Sight is the most important aspect of everyone's life as we are able to steer through our surroundings with ease with the help of our eyes. We are able to visualize the world in different colours, shapes, and dimensions through our eyes. But the loss of vision can hamper one's life to great extent and till date, all the disorders which can lead to blindness or loss of vision are difficult or impossible to treat.

Stem Cell Therapy for Corneal Regeneration in Eye:

The human eye comprises of nerves, a lens, liquid and it is one of the most important and vital organs of the human body. The surface of the eye is made up of thin, transparent dome called as the cornea which is a major protective barrier and the refractive power of the eye. It covers the iris, the colored part of your eye and the pupil, the black circle in the middle of your eye. Since the cornea is exposed, it is more prone to injury. A minor or a deep scratch on the cornea can cause infections, scars and may lead to corneal ulcers, if left unnoticed for a longer time and this may result in long-term vision problems or permanent vision loss.

Experimental studies have shown that diverse types of stem cells are located in each layer of the eye. Stem cells are the naive cells present inside the body in the dormant state until any organ faces any kind of injury. After the injury, stem cells get activated and migrate to the site of injury, secrete cytokines and growth factors to promote rapid healing. Being the youngest cells of the body, they get potentially differentiated into lumbar stem cells in the eye to enhance healthy optic nerve regeneration and help in recovering them from routine damage.

The stem cell treatment for corneal regeneration or stem cell therapy for Corneal Regeneration focuses on delivering the sufficient number of Adult Autologous Stem Cells extracted from one's own bone marrow or adipose tissue to the injured area for promoting better healing and regeneration of the cells of the damaged area of eyes. In bone marrow, the stem cells are extracted from hip bone or iliac crest after general anesthesia and in adipose tissue, the extraction is done from belly area with local anesthesia. The extracted cells are processed to be enriched with the pure line of stem cells and re-injected into the patient either by intravenous (infusion through the vein) or retrobulbar (infusing stem cells directly into the area of the eye near the macula) or intravitreal (infusing stem cells directly into the eye near the retina) injections.

Since the stem cells are taken from the patient's own blood, the chances of immune rejection are negligible. The infusion of the enriched stem cells at the site of injury finally lead to the activation of alternative developmental pathways which can regenerate lost cells of the eye, promote revascularization to improve blood circulation for better recovery and faster functional restoration. Post Corneal Stem Cell treatment procedure, the patient is asked to visit the doctor after a specific period of time for some rehabilitation programs such as physiotherapy, patients counseling etc. for accelerated recovery.

Unlike the electronic parts of a camera, it is difficult to obtain the new biological components for the eye which makes the treatment of eye-related disorders quite difficult. This is where stem cell therapy for eyes may be of use. With many patients suffering from disorders in the eye that cause photoreceptors to die, the stem cell treatment for blindness and retinal stem cell transplant plays a great role in this as these cells can give rise to new, healthy cells of the eye, replacing the damaged one's which in turn helps in restoring eyesight for many people around the world.

Although, more and more research is going on in this field for improvements in terms of faster recovery; stem cell corneal repair treatment has so far proven to be the best existed an alternative to eye operation, eye transplants or blindness.

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