

عنوان مقاله:

Cell-based therapy in spinal muscular atrophy, a review article

محل انتشار:

اولین کنگره بین المللی مهندسی بافت و پزشکی بازساختی ایران (سال: 1397)

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خلاصه مقاله:

Introduction Spinal muscular atrophy (SMA) is a severe autosomal recessive neuromuscular disease in spinal cord, resulting in progressive proximal muscle weakness and paralysis. Until recently treatment was focused on symptoms, preventing complications, and improving quality of life. **Objectives** In order to review the latest findings in the field of cell therapy to improve SMA patients. **Methods** We searched suitable keywords in common medical databases. English articles which published from 1990 extracted and evaluated. **Results** Motor neuron replacement is the ultimate goal in transplantation therapy. Primary Motor neurons (MNs) can be isolate from fresh human or rodent fetal tissue. More promising approaches are the differentiation of embryonic, induced pluripotent stem cells (iPSCs), or fetal-derived neural stem cells (NSCs) into MNs for transplantation. Different neural tissues such as Astrocytes, Human NSCs and Progenitor Cells and iPSCs represent a more natural source for transplantation. Also motor neuron protection with Microglia and Hematopoietic-Derived Stem Cells, Mesenchymal Stem cells become particularly appealing approaches. Combining stem cell transplantation and ex vivo gene therapy or using stem as a vehicle for the delivery of therapeutic compounds such as growth factors is a compelling approach. **Conclusion** To date, multiple Non-Neural, neural and stem cell types and methods of administration have been investigated. Optimization of the transplantation techniques, combined with grafting of appropriate cell type expressing, the most potent neuroprotective molecules will undoubtedly lead to the generation of successful therapeutic strategies for treating or preventing motor neuron disorders

کلمات کلیدی:

Cell-based therapy, Stem cell, Spinal muscular atrophy

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