OPEN ACCESS Freely available online

Hair Therapy & Transplantation

ISSN: 2167-0951

Commentary

Applications of Stem-cell Therapy and its Uses

Ken Anderson*

Department of Dermatology, University of Sarajevo, Sarajevo, Bosnia and Herzegovina

DESCRIPTION

The use of stem cells in stem-cell therapy is to treat or prevent a disease or condition. The cells can be obtained from umbilical cord blood, but the procedure typically entails a bone-marrow transplant. Research is being done to create new stem cell sources and to use stem cells to treat diabetes, heart disease, and other diseases as well as neurodegenerative disorders.

Following advancements like the ability of scientists to extract and culture embryonic stem cells, to produce stem cells by somatic cell nuclear transfer and to apply procedures to create induced pluripotent stem cells, stem-cell treatment has come under fire.

Applications

Neurodegeneration: The effects of stem cells on animal models of brain ageing, including Parkinson's disease, Amyotrophic lateral sclerosis, and Alzheimer's disease, have been studied. Multiple sclerosis preliminary research has been done, and a phase 2 experiment in 2020 indicated that patients treated with mesenchymal stem cells had considerably better outcomes than patients treated with placebos. Neural stem cells, which divide to maintain overall stem cell levels or develop into progenitor cells, are present in healthy adult brains. Progenitor cells travel inside the brains of healthy adult laboratory animals and serve primarily to preserve populations of smell-related neurons. In adult rats used as models for neurological disorders, pharmacological activation of endogenous neural stem cells has been shown to result in neuroprotection and behavioural recovery.

Brain and spinal cord injury: Cell death is caused by stroke and traumatic brain injury and is defined by the loss of neurons and oligodendrocytes in the brain. Stem cell therapy for spinal cord injuries has been studied in both human and animal research.

Frailty syndrome: After receiving intravenous therapy with mesenchymal stem cells from healthy young donors, elderly patients with ageing frailty showed significantly improved physical performance indicators, according to a small-scale study. MSC aids in blocking inflammation by bringing about its reduction, which counteracts the effects of frailty.

Heart: People with significant heart disease are investigated for their stem cells. By pointing up hundreds of factual inconsistencies, Bodo-Eckehard Strauer's work was called into question. Even though adult stem cell therapy has been shown to be safe and successful in numerous clinical trials, there is now only limited proof of its benefits. Some early clinical trials using bone marrow stem cell treatment only saw minor improvements in heart function. Myocardial infarction is often treated with autologous bone marrow stem cells, but other adult stem cell types, such as those generated from adipose tissue, may also be used.

Blood-cell formation: The ability of the human body to defend itself against quickly evolving antigens is due to the specificity of the immune-cell repertoire. However, due to the immune system's vulnerability to deterioration during disease pathogenesis and the vital role it plays in overall defense, this deterioration frequently proves lethal to the organism as a whole. Hematopathology is a branch of pathology that focuses on the diagnosis and classification of diseases of hematopoietic cells. The ability of immune cells to recognize foreign antigens is due to their specificity, which presents additional difficulties for the treatment of immunological diseases. Successful transplant treatments require exact matches between the donor and the recipient, but even among first-degree relatives, matches are rare. The mechanisms and potential treatments for many of these diseases have been studied utilizing both hematopoietic adult stem cells and embryonic stem cells.

Correspondence to: Ken Anderson, Department of Dermatology, University of Sarajevo, Sarajevo, Bosnia and Herzegovina, E-mail: anderson111@gmail.com

Received: 04-Jul-2022, Manuscript No. HTT-22-20829; **Editor assigned:** 07-Jul-2022, PreQC No: HTT-22-20829 (PQ); **Reviewed:** 22-Jul-2022, QC No: HTT-22-20829; **Revised:** 29-Jul-2022, Manuscript No: HTT-22-20829 (R); **Published:** 08-Aug-2022; DOI: 10.35248/2167-0951.22.12.189

Citation: Anderson K (2022) Applications of Stem-cell Therapy and its Uses. Hair Ther Transplant. 12: 189.