

Rejuvenation of Old People with Stem Technology

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Abstract

Rejuvenation is a process of reverse practice of the process of aging. This can be done by stem cells stimulated by the induced growth factors in an active cell division. Senescent cells can be removed by the immune system, this is destroyed by gene therapy. There are some preformulated drugs available which are the precursor thought of this article. In the last few decades, there has been a substantial increase in the population of people over 60 years of age. Most of them maintain a good general health and physical activity and fitness. For these individuals there is a good number of dermatologic procedures, medications, and cosmetics that can be prescribed to improve the aspect of skin aging, providing an improvement in their self-esteem and quality of life as a result of their better look. The aim of the research is to study the rejuvenation of old people with stem cell technology

Keywords: Gene therapy, stem cells, senescence, grafting, growth factors.

Introduction

Rejuvenation is the reverse practice of the aging process by the repair of damaged cells and replacement of the damaged cells by a new tissue. The cell loss can be reversed by suitable exercise of muscles or by replacement of the muscle using tissue growth mechanism. This can be done by stem cells stimulated by the induced growth factors in an active cell division. Senescent cells can be removed by the immune system, this is destroyed by gene therapy. The gene therapy kills or removes the suicidal genes. And this process kills only the senescent cells. Some rejuvenation drugs which are responsible in the market just reverses the protein crosslinking. This is developed by some enzymatic methods¹. Some vaccination which helps in rejuvenation of old cells is by removing the extracellular garbage. This provides the arrival of immune cells. The intracellular

substance which brings the process of senescence can be removed by the infusion of many new enzymes that degrade the junk that even our own natural enzymes cannot upgrade². Cancer cells use gene therapy which might require deletion or usage of other genes to add or cleave on others. Telomerase is used to determine the activity of other enzymes.

The normal cell considers the cancer cells as immortal, and this can be compensated by telomerases. Old human cells can be rejuvenated by stem cell technology. They become more youthful by having a coaxing property that expresses proteins³. The pluripotent cells are the implications for ageing research. They have high popularity among the scientists and researchers too. Stem cell regenerative capacity persists throughout life and hence they are used to produce organs and other things like in the field of medicine. They are used in the synthesis of insulin. The productive regenerative responses, abandonment of the tissue maintenance, repairs in the old. Progenerative changes and other biochemical signals show the sign of young cells behaving like old in early days of the synthesis⁴. This can be due to the accumulation of the metabolic stress or environmental damage or prolonged entropy which

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could accumulate^{4,5}.

Induced pluripotent stem cells combine by the rational means, there is no 100% possibility that the induced pluripotent stem cells can get attached to the part in the process of grafting. They obtain the histo compatible tissues. They are highly patient specific. They help in the treatment of diseases like osteoarthritis, muscle wasting⁴⁻⁶. This keeps us away from aging and aging related diseases. Older people might control their emotions and focus more to make the most of life, hence increased stress leads to disappearance of hair. The aim of the research is to study the rejuvenation of old people with stem cell technology.

Hematopoietic Stem Cells

The hematopoietic stem cells increase with the age rather than others. The proportion of CD341, Lin2, CD341, CD382CD901, CD45RA2 protein increases in elderly bone marrow in case of humans and mice. There is a general preference over the myeloid over lymphoid differentiation^{7,8}. First possibility is on the basis of clonal alteration method, obtained by the homogenous population of hematopoietic stem cells⁹. They are generally the myeloid cells^{1,10}. Accumulation of mitochondrial mutations in the hematopoietic stem cells observed in people have an affected functionality of hematopoietic stem cells¹¹.

Tissue -Specific Stem Cells

Mesenchymal stem cells are the cells which form the tissue component. They include the bone marrow and other tissues capable of mobilizing, proliferating terminally like osteoblasts and adipocytes¹². The mesenchymal stem cells are capable of differentiating into neurons, glial cells and hepatocytes¹³. The mesenchymal stem cells can accumulate DNA changes in an in vitro culture. This causes exchange in differentiation capacity¹⁴. Exciting possibility is reprogramming the somatic cells back to pluripotent stem cells.

Stem Cell Characteristics Changed By Microenvironment

The stem cells are the special type of the cells which can repair and regenerate themselves. They can be obtained from the bone marrow, skeletal muscles, pulp etc^{15,16}. They are subjected to a characteristic change by

the microenvironment, this causes the mutated forms of the stem cells. The stem cells are mutated by selecting a reasonable gene, and that gene selected for the mutation are the satellite cells.

Satellite Cells

Satellite cells are the part of the tissue which acts as the path of mutation of the cells. Sarcopenia is the part from compromised satellite cell function. Studies of C1C12 cells say that the DNA methylation occurs due to C1C12 cells and their cause muscle regeneration¹⁷. The satellite cells form the bridge between the normal cells and the other mutated cells or the mutation, they play a major role in the rejuvenation of the cells.

Cancer Cells

They are highly proliferating cells which causes an increased amount of mutation¹⁸. This is due to provokement of the DNA amplification, deletion or addition. The main cause may be due to the deficiency of the tumor suppressor gene and the DNA repair mechanism^{10,19}. The Intracellular enzymes are highly degradable. The enzymes cannot be degraded by the normal enzymes present in the body. Cancer cells use gene therapy to delete the genes for the telomerase and to eliminate telomerase. These are independent mechanisms²⁰. The normal cell changes into immortal cancer cells. The compensation for telomerases are given by the stem cells.

A World Where None Ages

A world where none ages is a good one than mass disasters. These people who tend to live wanted a better and quality life in their future. Even if its out of ethics, the external life and everlasting youths gives strength to the ideas that cures for human aging and this is eventually developed

Longevity Regulators And Anti Ageing Drugs

Longevity regulators include the commercially available anti aging drugs in the market. These can extend the life span by 50%. The humans of longevity pathways have short lived model systems. Life extension process curing a chronic or malignant form of a disease²¹. They develop interventions and they cure helpless disease like cancer²². Cancer is treated by chemotherapy first and

they are removed by manual or laser method. They are named according to the site of cancer²³.

Road Map To Life Extension

Theories involved in gene therapy, stem cells and synthetic biology leading the pact by disruptive medical technologies²³. They have the greatest possibility or the life extension. SENS, the strategies for engineered negligible senescence is the largely based medicine for reversal of aging

Re-Engineering Humans For Longer Life

By the process of gene therapy and stem cell technology, we can make even a new person. Hence called as re-engineered humans. Advances in genome editing by the zinc finger TAL(transcription activator like)²⁴. Nucleases alter the human genetic code, causing regeneration. The research practices includes the forced expression in mice by a single transcription factor that regenerates and fully involved thymus is the best example for the pluripotency, a single factor that reverses the effect of aging. Some types of stem cells are responsible for that²⁵. The intrinsic and extrinsic effect of the mutation of the cells and muscles have a possible regeneration and causes a high blood level of chemokines, which negatively regulates neurogenesis.

Discussion

Haematopoietic stem cells are the main reason for partial regeneration²⁶. The pooling of blood can show the person young, because of this the gene therapy is done in bone marrow. The stem cells are the undifferentiated cells which can be transformed into any kind of cell,²⁷. These kinds of cells can be obtained from adipocytes, pulp chambers, etc²⁸. they can be taken to modify the cell according to the patient and can be placed again to the patient. The pluripotent cells are the implications for ageing research. Stem cell regenerative capacity persists throughout life and hence they are used to produce organs and other things like in the field of medicine. They are used in the synthesis of insulin²³. The productive regenerative responses, abandonment of the tissue maintenance, repairs the old cells. Progeric changes and other biochemical signals show the sign of young cells behaving like old in early days of the synthesis Stem cells can be modified according to the

environment. They are also called as the compensatory cells. Wherever there is a loss of cell. The stem cells transform to form that kind of cell. They are the cells which are responsible for the mutation^{29,30}. These cells specify the loci of the differentiable or mutable cells³¹. Hence they play a major role in the regenerations of the cell. Reengineering of the cells by the process of stem cell technology and tissue engineering leads to regeneration of the cell. This can be caused by a single or multiple factor.

Conclusion

This review is necessary as far as now, because the lifespan of the homosapiens are getting less. There is an increased mortality rate than the birth and people of very less age are prone to death now-a-days .The only way to control the mortality is by the process of rejuvenation. Aging is the single greatest risk factor for developing Alzheimer's disease, Parkinson's disease, and other brain diseases. It slows down your body's ability to repair itself. But if we could rejuvenate tissues in aging bodies we could prevent brain diseases by slowing down aging.

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