

IS THERE A REMEDY FOR THE PERPLEXING PATHOLOGY?

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The existing dream in the mind of every physician all over the globe is to find a solution for so many problem cases such as; an incurable condition, a degenerative process, congenital anomalies and even more serious like malignancy.

Every now and then a window opens for hope and optimism, makes all the physicians happy for a while, then it collapse because it did not stand the test of time like; the biological therapy, the immune therapy, the plasma rich platelet, and the serum therapy. So far all needs further approval, and more solid bases.

We are to some extent optimistic with great hope to be capable of finding a solution for so many unsolved problems.

What is recently appearing in the market is the stem therapy, we count on this therapy to please ourselves. Stem cells are undifferentiated cells that can divide to produce offspring that continues as stem cells and some cells that destined to differentiate (become specialized). Stem cells are ongoing source of differentiated cells that makes up tissues and organs of animals and plants. They have the potential in the development therapy for replacing defective or damaged cells. Stem cells have the capacity for self renewal and ability to distinguish into various types of tissues under certain conditions, so it develop to progenitor cells and finally to differentiated cells.

Stem cells are classified on the bases of their source into: Embryonic stem cells, fetal stem cells, and adult stem cells. The pluripotent embryonic stem cells are capable of differentiation into any tissue type while the adult stem cells are much more limited in their regeneration capability and are usually restricted to tissue they reside in. Currently, there is a high risk to use embryonic stem cells in clinical practice as the issue of teratogenicity and immune reaction by recipient is not yet fully solved. Probably, changing the totipotent embryonic stem cells to multipotent mesenchymal stem cells will reduce the risk of teratoma formation.

Embryonic stem cells are derived from the inner cell mass of the blastocyst at a stage before it would implant in the uterine wall, these cells can self replicate and are pluripotent.

The umbilical stem cells are derived from the cord blood because it is rich in the stem cells. Following appropriate human leukocyte antigen (HLA) matching, they may be used to treat varying conditions.

The adult stem cells are derived from the bone marrow and peripheral blood through the special system RES-Q60.

The ability of stem cells to repair and regenerate new tissues and organs hold a tremendous promise for the treatment of many serious diseases and injuries, so it can be used for the treatment of Diabetes Mellitus, bone disorders like osteoarthritis, osteogenesis imperfecta, fracture non-union, and avascular necrosis of the femoral head. It is also useful for cardiovascular disorders like acute myocardial infarction, cardiomyopathy, and heart failure. In addition, it is useful for liver cirrhosis and hopefully for so many unsolved neuro-muscular disorders like Parkinson's disease, muscular dystrophy, amyotrophic lateral sclerosis, cerebral palsy, multiple sclerosis, stroke, and spinal muscular atrophy.

The challenge in stem cell therapy is the capability of these cells to repair and regenerate damaged or diseased tissue so they would expand in an adequate number and differentiate into the correct phenotype tissue that they are intended to repair.

Practically, adult stem cells can be found in almost every tissue in the body like; bone marrow, blood, cornea, retina of the eye, the dentine, liver, skin, pancreas, and gastrointestinal tract.

With advancing age, the number and quality of stem cells gradually decreases, so there is a need for stem cell enhancers (natural product that support wellness by helping the body to maintain healthy stem cell physiology).

To sum up:

1. In general, the use of adult stem cells is more practical as they are less potent and more directed so there is no likelihood of teratoma.
2. Strict follow-up is mandatory after stem cell therapy to ensure safety.
3. Still there is ethical and religious consideration for using the embryonic stem.
4. Stem cells proved its usefulness in some disease conditions and fail in others, so we have to wait for the test of time or we have to wait for the foam to settle down.

