

Diseases treated with stem cell transplant

Many malignant and non-malignant disorders can be treated with hematopoietic stem cell transplant. High-dose chemotherapy and subsequent autologous hematopoietic stem cell transplant is used for patients with high-risk solid tumors, lymphomas, and acute myeloid leukemia.

Stem cell collection for these patients is performed when bone marrow has minimal or no involvement by malignancy. An ideal situation should be to perform stem cell collection in anticipation to the onset of the disease in those individuals (or family members) at risk of developing a disease which may be treated with hematopoietic stem cell transplant.

Diseases currently treated by autologous (cells from the same patient) stem cell transplant include: acute myeloid leukemia (AML), brain tumors, Ewing sarcoma, germ cell tumors, and Hodgkin disease.

Diseases that may be treated by allogeneic (cells from a donor) stem cell transplant include, acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), juvenile myelomonocytic leukemia (JMML), myelodysplastic syndrome (MDS), non-Hodgkin lymphoma (NHL), high-risk solid tumors (under certain circumstances), bone marrow failure syndromes, chronic granulomatous disease, Fanconi anemia, metabolic storage disorders, osteogenesis imperfecta, osteopetrosis, severe aplastic anemia, severe combined immunodeficiency syndrome (SCID), sickle cell anemia, thalassemia, and Wiskott-Aldrich syndrome

The human body is made up of 216 different types of cells. This diversity suggests that in the future a large number of diseases that need replacement or regeneration might be treated by procedures associated with regenerative medicine. Thus, clinical protocols using cell therapy should be available, at least, for the following diseases: Neurological disorders: stroke, Parkinson's disease, spinal cord injury neurons. Cardiovascular disorders: myocardial infarction, congestive heart failure; Insulin dependent diabetes mellitus; Disorders of the liver: cirrhosis, hepatitis; Immune and hematological disorders.