# Stem cell-based therapy for rheumatoid arthritis

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## Abstract

Autoimmune diseases, including systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), and systemic sclerosis (SSc) are the most prevalent rheumatic autoimmune disorders affecting autologous connective tissues caused by the breakdown of the self-tolerance mechanisms of the immune system. During the last two decades, stem cell therapy has been increasingly considered as a therapeutic option in various diseases, including parkinson's disease, alzheimer, stroke, spinal cord injury, multiple sclerosis, inflammatory bowel disease, liver disease, diabete, heart disease, bone disease, renal disease, respiratory diseases, and hematological abnormalities such as anemia. This is due to the unique properties of stem cells that divide and differentiate to the specialized cells in the damaged tissue. Moreover, they impose immunomodulatory properties affecting the diseases caused by immunological abnormalities such as rheumatic autoimmune disorders. In the present review, efficacy of stem cell therapy with two main types of stem cells, including mesenchymal stem cells, and hematopoietic stem cells in animal models or human patients of one common rheumatic autoimmune diseases, including, RA, will be reviewed. Moreover, other related issues, including safety, changes in immunological parameters, suitable choice of stem cell origin, conditioning regimen, limitations, and complications of stem cell treatment will be discussed.

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