

Mesenchymal stem cell therapy for knee osteoarthritis. Preliminary report of four patients.
Davatchi F1, Abdollahi BS, Mohyeddin M, Shahram F, Nikbin B. *Int J Rheum Dis.* 2011
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Abstract

BACKGROUND:

Osteoarthritis (OA) is a cartilage degenerative process, involving the immune system, producing local inflammatory reactions, with production of pro-inflammatory cytokines and metalloproteinases. No treatment is still available to improve or reverse the process. Stem cell therapy opened new horizons for treatment of many incurable diseases. Mesenchymal stem cells (MSCs) due to their multi-lineage potential, immunosuppressive activities, limited immunogenicity and relative ease of growth in culture, have attracted attentions for clinical use.

AIM:

The aim of this study was to examine whether MSC transplantation could reverse the OA process in the knee joint. The project was approved by the Tehran University of Medical Sciences Research Committee and Ethical Committee.

PATIENTS AND METHODS:

Four patients with knee osteoarthritis were selected for the study. They were aged 55, 57, 65 and 54 years, and had moderate to severe knee OA. After their signed written consent, 30 mL of bone marrow were taken and cultured for MSC growth. After having enough MSCs in culture (4-5 weeks) and taking in consideration all safety measures, cells were injected in one knee of each patient.

RESULTS:

The walking time for the pain to appear improved for three patients and remained unchanged for one. The number of stairs they could climb and the pain on visual analog scale improved for all of them. On physical examination, the improvement was mainly for crepitus. It was minor for the improvement of the range of motion.

CONCLUSION:

Results were encouraging, but not excellent. Improvement of the technique may improve the results.

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