

## MUSCULOSKELETAL CONDITIONS: OSTEOARTHRITIS, RHEUMATOID ARTHRITIS

Intra-articular injection of adipose tissue derived stem cells (ADSCs) was evaluated in 207 subjects with musculoskeletal conditions. Significant decrease in pain sensation and mobility improvement were observed six months after ADSC therapy.

Analysis of subjects' pain sensation showed the following. Ten days after the therapy, pain sensation decreased by 26.8%. Three months after therapy, the number of subjects with a decrease in pain sensation increased to 50.0%, and six months later, this number was 52.5% (Figure 1).

Analysis of subjects' mobility showed the following. Ten days after the therapy, mobility was improved at 26.0%. Three months after therapy, the number of subjects with improved mobility increased to 43.8%, and six months later this number was 47.4% (Figure 2). Statistical analysis showed that the decrease in subjects' pain sensation and improvement of subjects' mobility three and six months after the therapy was statistically significant.

Figure 1.

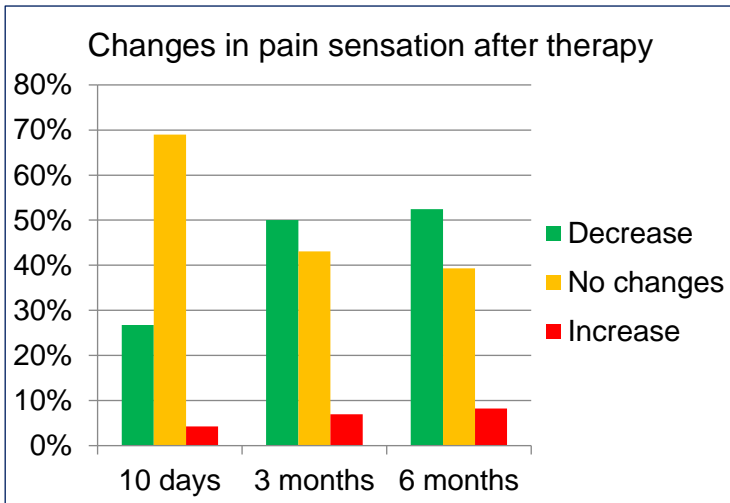
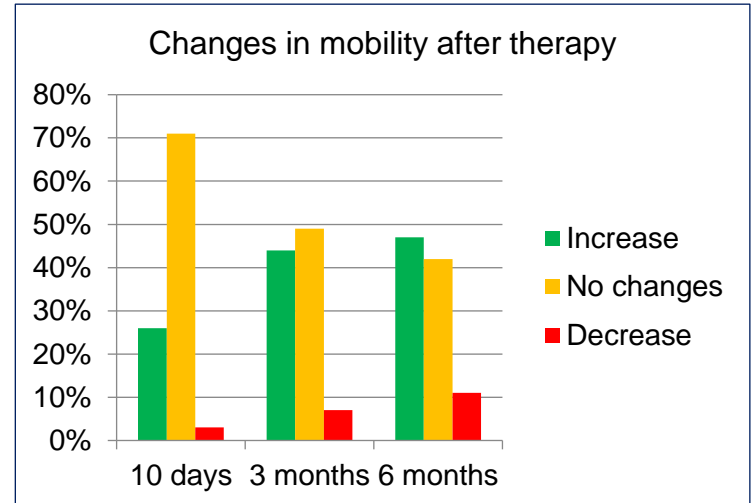


Figure 2.



Analysis indicated that the therapy was most effective in subjects with arthritis stage III. Figures 3 and 4 show the results of subjects' pain decrease and mobility improvement in regards to arthritis stage.

Figure 3.

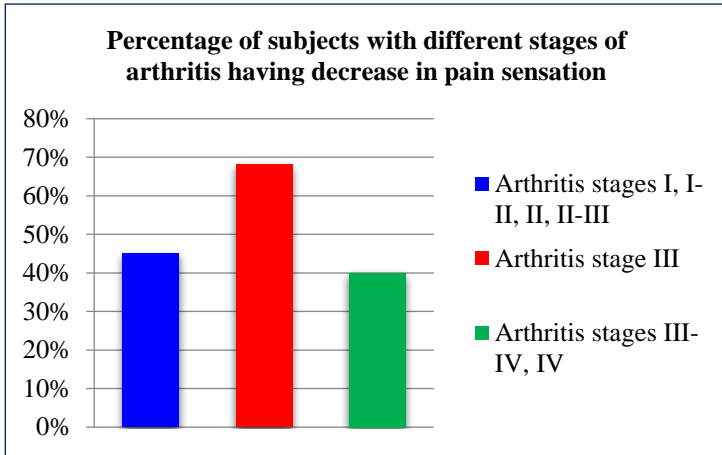
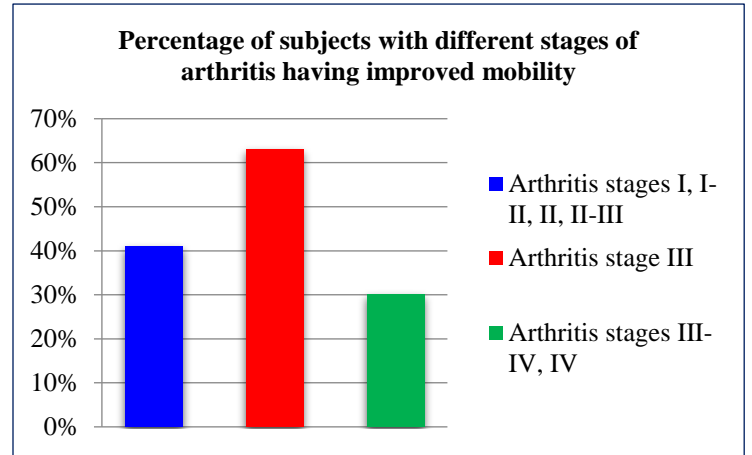


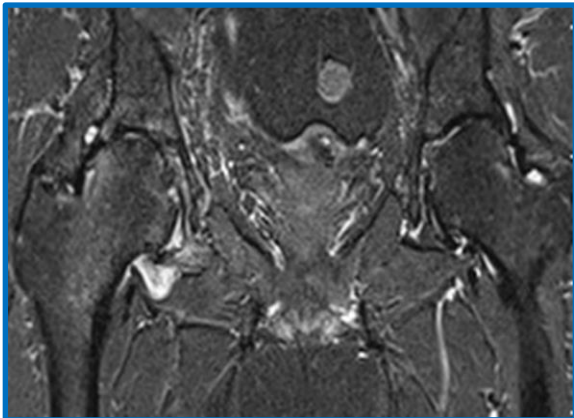
Figure 4.



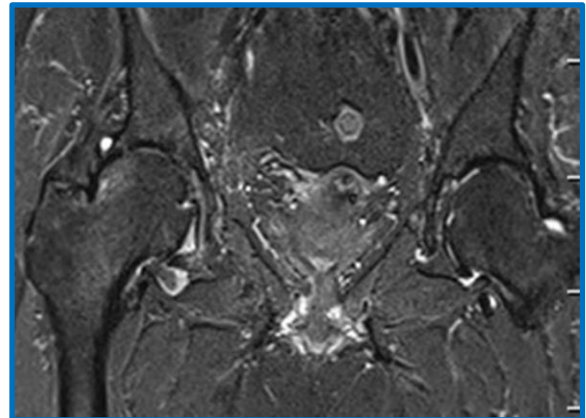
### MRI Results

(1) Initial MRI examination of hip (65-year-old woman) showed right coxartrosis gr. III., chondropathies gr. III-IV, mild edema and bone overgrowth of intra-articular fluid; left chondropathies gr. II-III, coxartrosis gr. II. Six months after application of stem cells, MRI examination showed slight bilateral improvement in both hip joints, partial regression of edema and synovial fluid of right cartilage and bone.

Pre Therapy

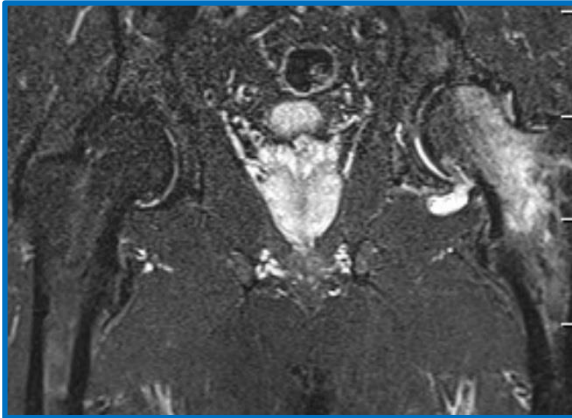


Post Therapy

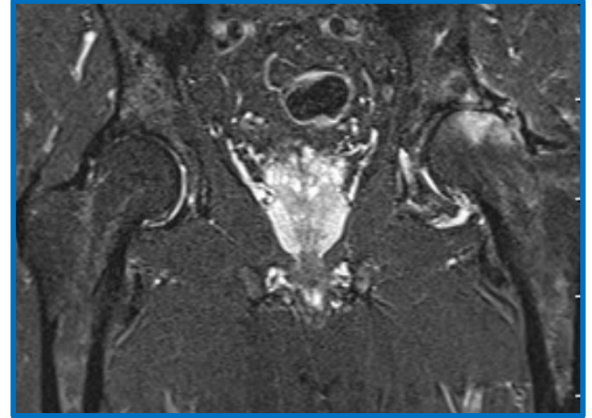


(2) Initial MRI examination of left hip (52-year-old man) showed coxartrosis gr. III; the marked edema of the femoral head with the transition to femoral neck. Six months after application of stem cells, MRI examination showed significant regression of edema in bone, decrease in intra-articular fluid volume, discrete cartilage growth.

Pre Therapy

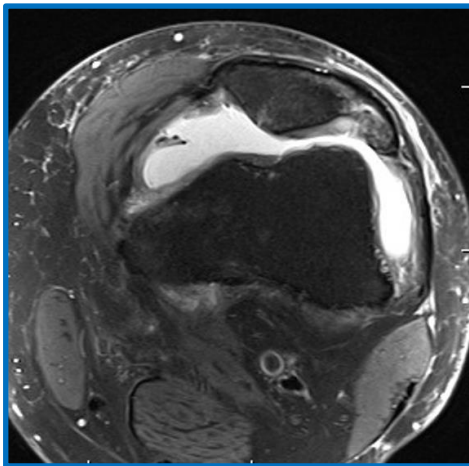


Post Therapy

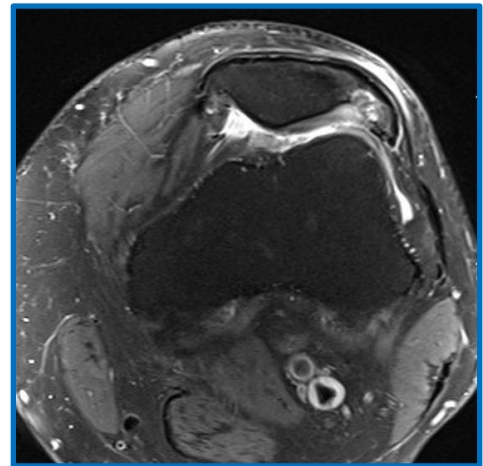


(3) Initial MRI examination of left knee (58-year-old man) showed transversal cuts significantly polymerous fluid FP, chondromalacia patella gr. IV. Subchondral edema with small-scale media facet. Six months after application of stem cells, MRI examination showed significant regression of intra-articular fluid, regression of edema.

Pre Therapy



Post Therapy



(4) Initial MRI examination of knee (26-year-old man) showed significant reduction of cartilage on medial femoral condyle and adjacent bone edema. Six months after application of stem cells, MRI examination showed increase in cartilage volume.

Pre Therapy



Post Therapy

