

MUSCULOSKELETAL CONDITIONS: OSTEOARTHRITIS, RHEUMATOID ARTHRITIS

Intra-articular injection of adipose tissue derived stem cells (ADSCs) was evaluated in 350 subjects with musculoskeletal conditions. Significant decrease in pain sensation and mobility improvement were observed six months after ADSC therapy.

Assessment of pain and mobility was conducted seven days, three, six and 12 months after SVF cell therapy. Seven days after therapy, 45.2% of subjects experienced a decrease in pain levels. The number of subjects with a decrease in pain levels reached 75.0% three months, 79.8% six months and 84.6% 12 months after therapy (Figure 1). Statistically significant decrease in subjects' pain levels was observed three, six and 12 months compared to seven days after therapy ($p < 0.05$). There was no statistically significant difference in subjects' pain levels between three, six and 12 months post-therapy time periods (One Way Analysis of Variance). Seven days after therapy, 44.0% of subjects experienced improvement in mobility. The number of subjects with improvement in mobility reached 75.2% three months, 84.4% six months and 84.8% 12 months after therapy (Figure 2). Statistically significant improvement in subjects' mobility was observed three, six and 12 months compared to seven days after therapy ($p < 0.05$). There was no statistically significant difference in subjects' mobility between three, six and 12 months post-therapy time periods (One Way Analysis of Variance).

Figure 1. Changes in pain levels after therapy

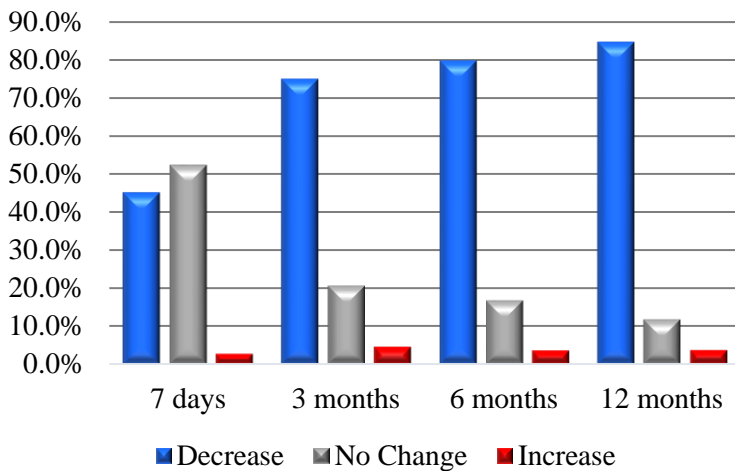
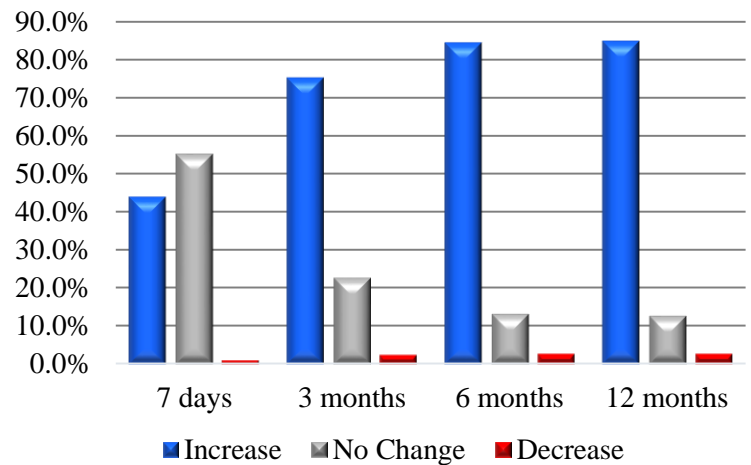
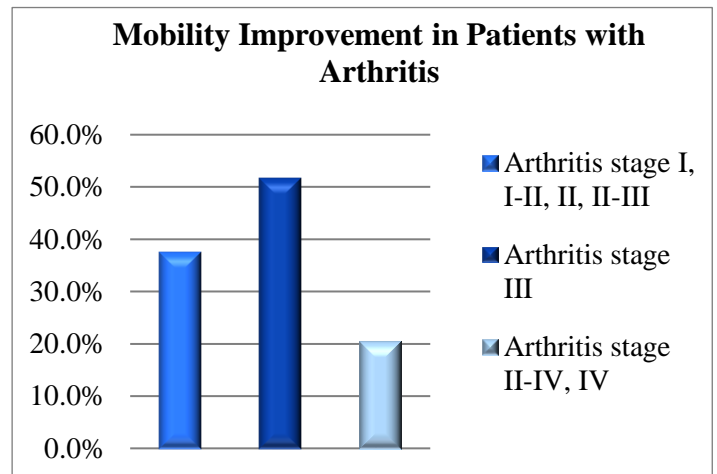
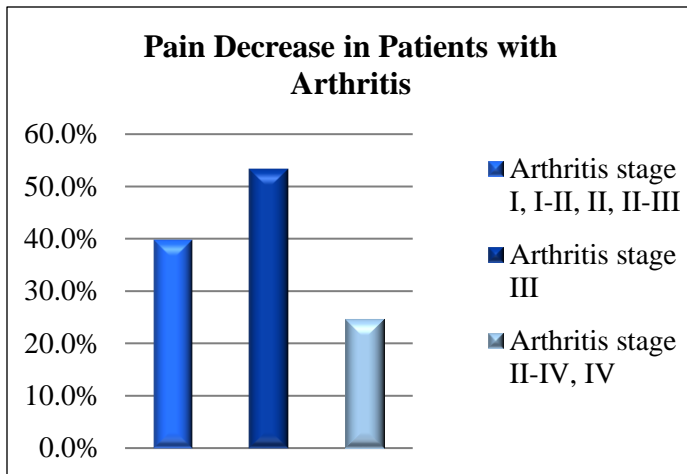


Figure 2. Changes in mobility after therapy



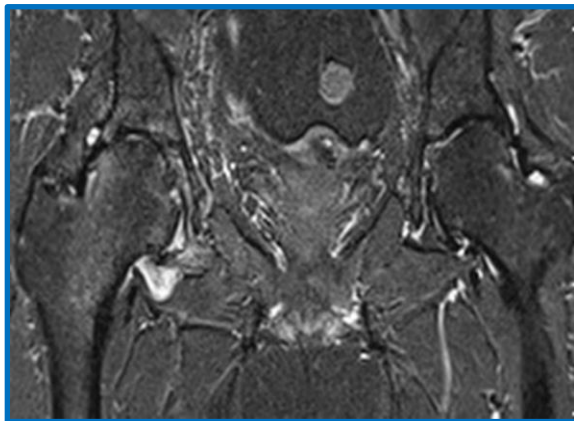
Adipose-derived SVF cell therapy was more effective in subjects with arthritis stage III, comparing to arthritis stages I, II and IV. The decrease in pain levels was observed in 53.3% and improvement in mobility – in 51.7% of subjects with arthritis stage III.



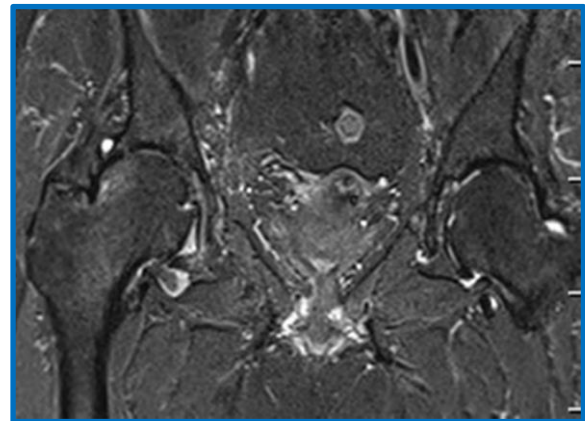
MRI Results

(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

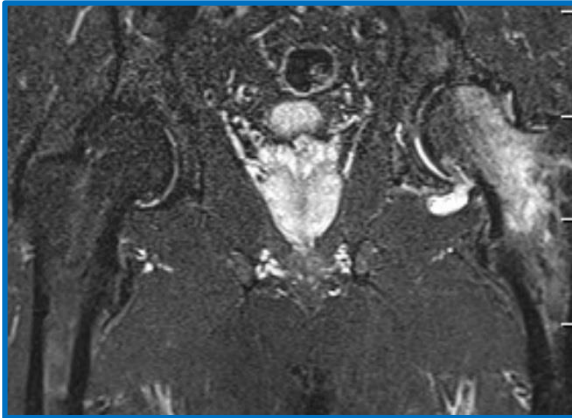


Post Therapy

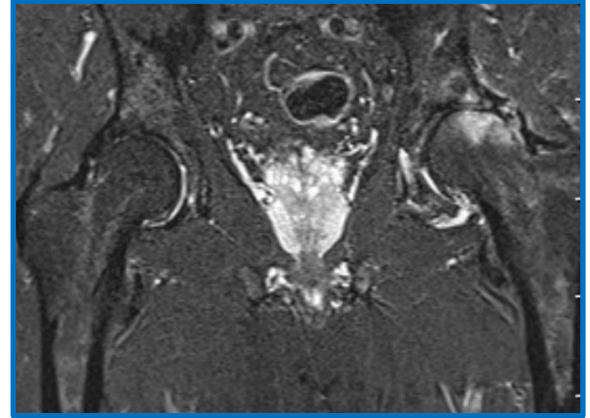


(2) Initial MRI examination of left hip (52-year-old man) showed coxartrosis gr. III; the marked edema of the femoral head with the transition to femoral neck. Six months after application of stem cells, MRI examination showed significant regression of edema in bone, decrease in intra-articular fluid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

Pre Therapy

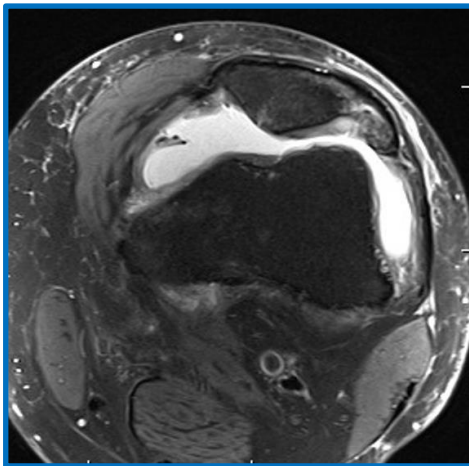


Post Therapy

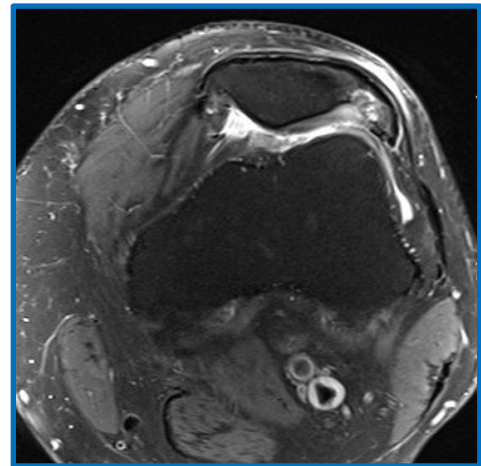


(3) Initial MRI examination of left knee (58-year-old man) showed transversal cuts significantly polymerous fluid FP, chondromalacia patella gr. IV. Subchondral edema with small-scale media facet. Six months after application of stem cells, MRI examination showed significant regression of intra-articular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

