



ORAL

# Cartilage regeneration on osteoarthritis patients by arthroscopic microfracture with stromal vascular fraction injection

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## Abstract

Treatments for osteoarthritis (OA) is challenging as it shows limited cartilage regeneration. There are a lot of treatments for OA, conventional treatments are NSAID and physical therapy, as well interventional treatments: arthroscopic surgery, arthroplasty. In arthroscopic surgery, we have two common options: the Microfracture and Autologous Chondrocytes Implantation (ACI). The MA technique is applicable for repairing of small to moderate sizes cartilage defects in OA, but the results are suboptimal and cartilage tend to deteriorate within a few years, the ACI for OA is not routine recommended in elderly patients, because of accelerated cellular senescence and dedifferentiation of ACI during the culture expand process. The use of cell-based therapy has become a major interest in the field of regeneration medicine. Cell-based therapies have been show to reserve the symptoms and pathophysiologic mechanisms of OA. The Mesenchymal Stem Cells (MSCs) could be isolated from the other tissue in human. Including peripheral blood, bone marrow, adipose, umbilical cord... MSCs have a several properties to become a candidate for regenerative medicine, such as: the capacity to differentiate into many cell types depending on the stimulus, the immunomodulation properties, secreting a large number of grow factors... However, the effects of MSCs on cartilage regeneration are still under investigation. We conducted a research evaluating the value of SVF extraction in enhancing the cartilage healing for OA patients.

We aimed to assess the safety and efficacy of articular cartilage regeneration by Arthroscopic Microfracture (AM) combined with Stromal Vascular Fraction (SVF) injection; fifteen OA patients participated in our study, with grade 2 or 3 (Kellgren ad Lawrence score). All patients were monitored and scored with the Western Ontario and Mc Master University Arthritic Index (WOMAC) Lysholm, Visual Analog Pain Scale (VAS) and Modified Outerbridge Classifications before treatment and at 6, 12, 18, 24 months after the treatments.

The results in our study showed that AM combined with SVF significantly improve OA symptom, and the effect still maintained even 24 months post-treatment.

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Stem cells, Osteoarthritis, Vietnam, clinical

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