

Clinical Outcome of Autologous Bone Marrow Aspirates Concentrate (BMAC) Injection in Degenerative Arthritis of the Knee -36months Follow Up-

Young Dae Jeon¹ and Jae Do Kim²

¹Department of Orthopaedic Surgery, Military Manpower Administration, Korea

²Kim's Stem Orthopaedic Clinic, Korea

Purpose: As a treatment method of degenerative arthritis of knee, this study evaluated the clinical efficacy of the intra-articular injection of autologous bone marrow aspirates concentrate (BMAC) with adipose tissue.

Materials and Methods: Between April 2011 and May 2012, 41 patients (75 knees) who were diagnosed as a degenerative knee arthritis and underwent the BMAC injection with adipose tissue were included in this study. Mean age was 60.7 years old (ranged 53-80). Kellgren-Lawrence grade was used for assessing radiologic degree of osteoarthritis; there were each 12, 24, 33, and 6 cases of grade I, II, III, and IV. At preoperative and postoperative 6, 12, 36 months pain score using visual analogue scale (VAS) and functional scales were used for evaluation.

Results: After the procedure, mean VAS score was decreased from 8.7 preoperatively to 7.16, 4.4 and 4.3 postoperatively 6, 12, and 36 months. And functional scores were also improved; International Knee Documentation Committee score (from 37.7 preoperatively to 66.3, 69.3, 70.5 postoperatively), SF-36 health score (from 31.5 to 45.6, 47.7, 52.5), knee and osteoarthritis outcome score (from 43.1 to 64.9, 70.6, 72), Lysholm Knee Questionnaire (from 37.3 to 68.6, 71, 72.5), were all increased after the procedure. 9 patients with K-L grade III, IV underwent total knee arthroplasty after two years.

When classified according to K-L grade, the improvement of VAS score in grade IV group was 8.2 preoperatively to 5.3, 5.7, 5.6 postoperatively, which was significantly poorer than those of grade I-III groups. In the knee functional scales, similar pattern was checked.

Conclusions: BMAC injection significantly improved both knee pain and functions in the patients with degenerative arthritis of knee. Also, the injection would be more effective in early to moderate phases.

Keywords: Knee, Arthritis, Bone marrow aspirates concentrate (BMAC), Intra-articular injection

Biography:

Dr. Young Dae Jeon, Department of Orthopaedic Surgery, Chief Doctor of the Division of Physical Examination for Draft, Military Manpower Administration, South Korea. He received the Master degree from Kosin Gospel University, South Korea in 2014. He worked as an orthopaedic surgeon at Kosin university gospel hospital from 2012 to 2016. His areas of research focus include: stem cell therapy in osteoarthritis of the knee, minimal invasive surgery spine surgery, arthroscopic rotator cuff repair, PRP therapy, BMAC therapy.