

Clinical outcome of autologous bone marrow aspirates concentrate (BMAC) injection in degenerative arthritis of the knee. Jae-Do Kim, Gun Woo Lee, Gu Hee Jung, Cheung Kue Kim, Taehun Kim, Jin Hyung Park, Seong Sook Cha, Young-Bin You, *European Journal of Orthopaedic Surgery & Traumatology*, January 2014

Abstract

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 3, 6, and 12 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 7.0 preoperatively to 4.1, 3.5, and 3.3 postoperatively 3, 6, and 12 months. And functional scores were also improved; International Knee Documentation Committee score (from 37.7 preoperatively to 59.3, 66.3, 69.3 postoperatively), SF-36 health score (from 31.5 to 43.5, 45.6, 47.7), knee and osteoarthritis outcome score (from 43.1 to 64.9, 68.5, 70.6), Lysholm Knee Questionnaire (from 37.3 to 65.4, 68.6, 71.0) were all increased after the procedure. When classified according to K–L grade, the improvement of VAS score in grade IV group was 8.2 preoperatively to 5.5, 5.3, and 5.7 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.