

## Bone marrow derived stem cells are efficacious in osteonecrosis of femoral head

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### Abstract

Improved understanding of healing logistics and ortho-biologics has provided a ray of hope for treating osteonecrosis (ON) of femoral head. Purpose was to evaluate efficacy of autologous bone marrow derived mononuclear cells (MNCs) augmentation during core decompression vis-a-vis core decompression in early stages of osteonecrosis. 38 (50 hips) were randomized into Group A (MNCs with core decompression; 18/26 hips) and group B (core decompression; 20/24 hips). Bone marrow aspirated from the posterior superior iliac spine was centrifuged and the resultant MNC harvest was counted and instilled in the core decompression tracts of patients in group A. Mean number of MNC injected was 153.91 million cells (SD= 91.30). Outcome was evaluated by VAS, Harris Hip score (HHS) and modified Kerboul angle for quantification of necrotic area. Follow up ranged from 4-14 (mean: 8.8) months. VAS scores improved from pre-operative levels of  $5.45 \pm 1.46$  to  $1.33 \pm .97$  in group A. VAS scores in group B increased from  $5.45 \pm 0.51$  to  $2.88 \pm .69$ . The HHS in group A had a final mean value of  $80.9 \pm 14.5$  from a baseline score of  $61.3 \pm 16.9$ . In group B the HHS changed from a baseline score of  $67.6 \pm 9.3$  to  $72.4 \pm 7.4$ . Statistically significant improvement in VAS, HHS and modified Kerboul angle was observed in group A as compared to group B. Modified Kerboul angle changed by a mean of  $4.1 \pm 15.4$  in group A and  $21.0 \pm 23.8$  in group B. There was statistically significant change and progression of disease in group B. There was progression of disease in 3 hips of group A and 5 hips of group B. Autologous bone marrow derived MNCs are a safe and effective treatment for early stages of osteonecrosis hip. There is marked clinical improvement in the group treated by MNCs than those who received core decompression alone.

### Biography

Anjali Aggarwal has completed her MD in Anatomy in 2003 from Government Medical College and Hospital Chandigarh, India. She is the additional professor at Postgraduate Institute of Medical Education and Research Chandigarh India. She has over 80 publications that have been cited over 500 times, and his/her publication H-index is 13 and is the member of many scientific societies. She has received many awards for her research. Currently she is working on articular cartilage regeneration in osteoarthritis and cancer biology of pancreatic cancer. Her area of interest is clinical anatomy.



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