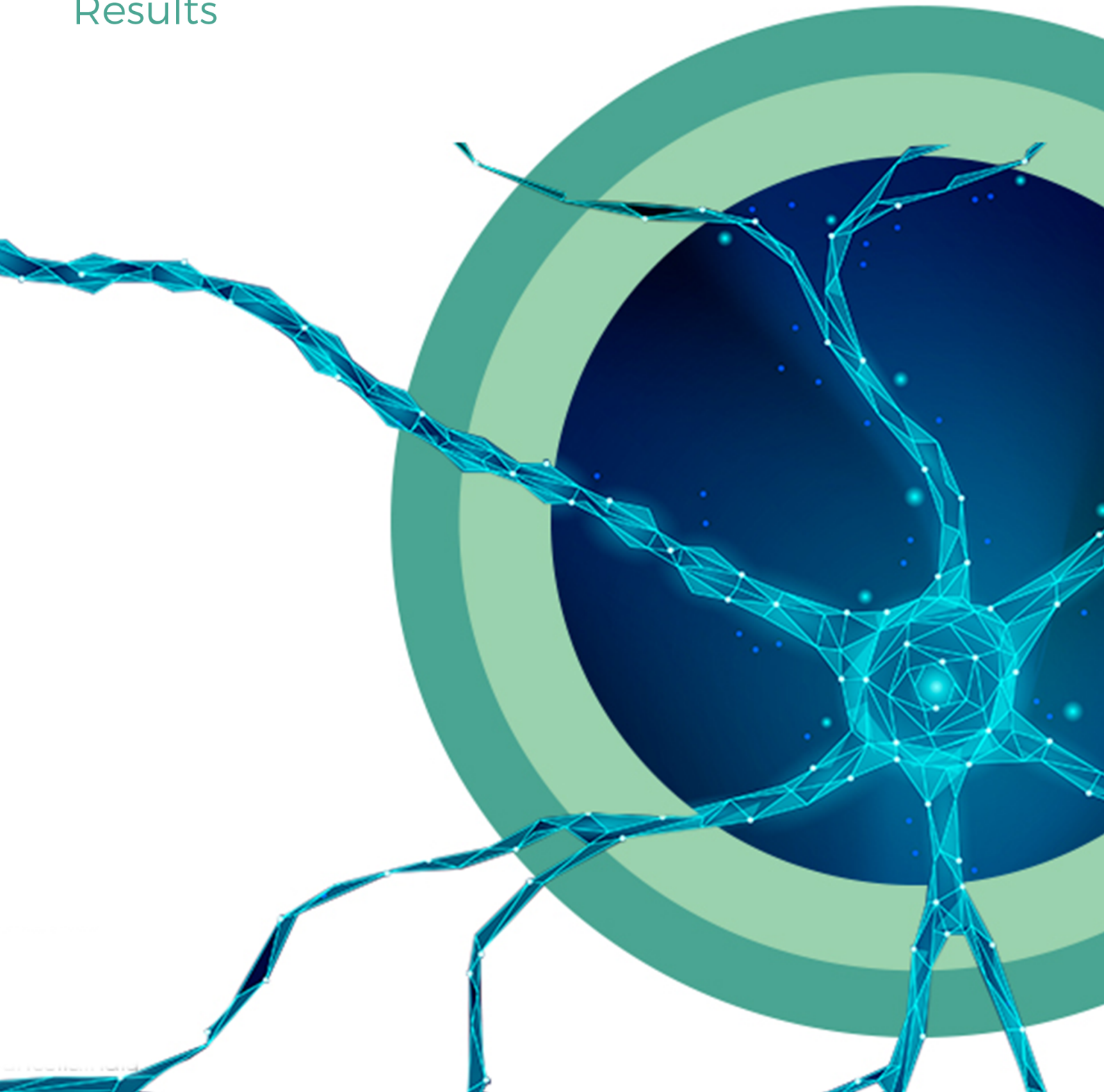


# Orthopaedics Therapy

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## Results



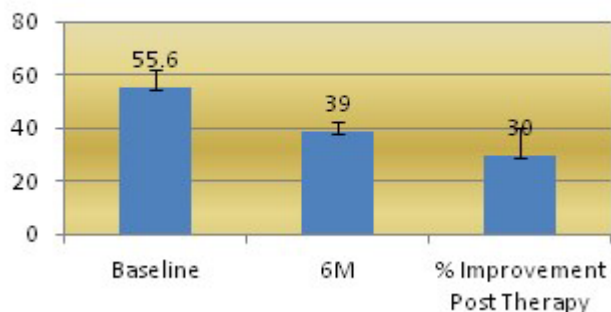
# Orthopaedics Therapy Results

Ten patients mean age ~45 years (Sex ratio - 2 male: 3 female) with chronic knee pain unresponsive to conservative therapy and radiologic evidence of degenerative arthritis were therapy with autologous bone marrow stem cells by intra-articular injection. Clinical outcomes were observed for six months and included evaluations of pain, disability and quality of liveliness. Articular cartilage quality was measured by quantitative magnetic resonance imagery (MRI) T2 mapping. Feasibility and safety were confirmed and strong indications of clinical efficacy were identified. The effects demonstrated the improved function and pain of the knee joint without causing adverse events, and reduced cartilage defects by regeneration of hyaline-like articular cartilage.

## Clinical Outcomes:

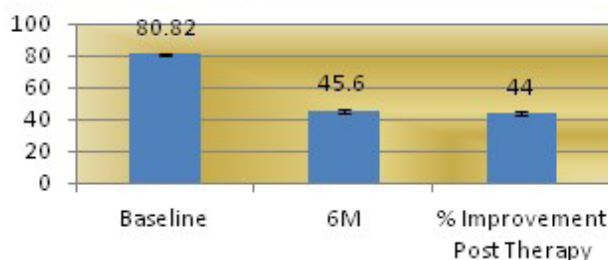
The Western Ontario and McMaster Universities Osteoarthritis index (WOMAC) at 6 months after SCT from the baseline has been amended significantly in all patients (Figure 01). The mean reduction from the baseline after 6 months was 30% in the treated group, from  $55.6 \pm 6.4$  to  $39 \pm 3.1$ .

### WOMAC (OA-Index)

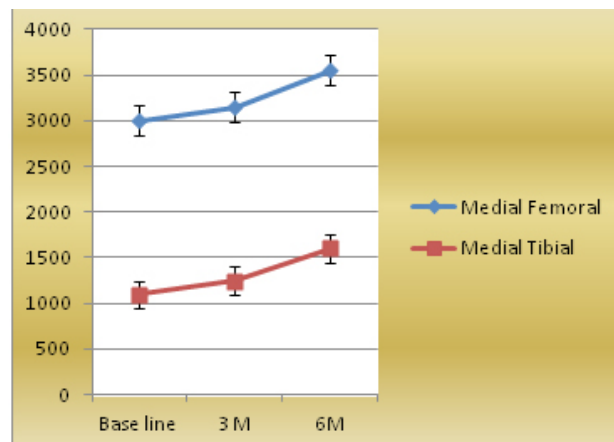


Visual Analog Scale (VAS) for knee pain significantly decreased since  $80.82 \pm 3.1$  to  $45.6 \pm 6.3$  in patients after six months of therapy (44% decrease) as indicated in Figure 02.

### VAS (Pain Score)



MRI and Histological evaluations demonstrated thick, smooth, hyaline-like cartilage regeneration at six months after BM-SC therapy as indicated in Figure 03



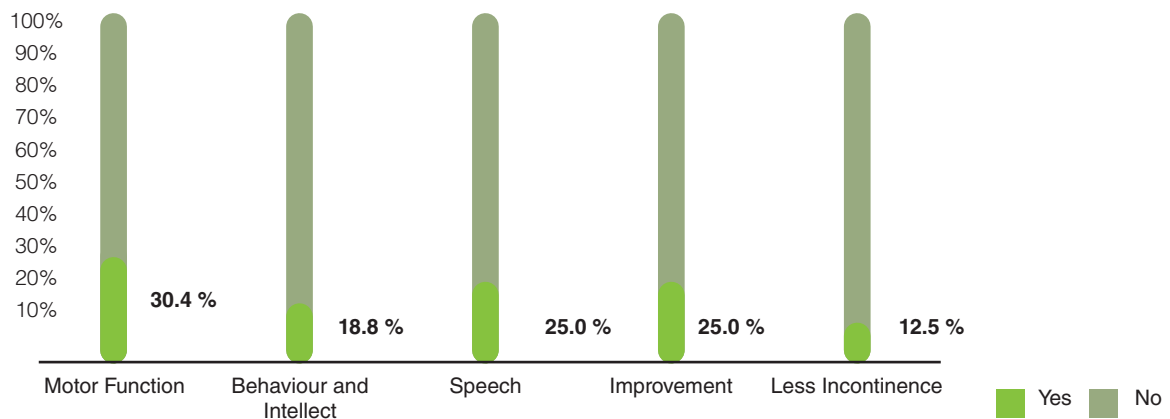
Functional activity had been increased and graded as "I can do almost everything that I want to do". E.g. skiing, karate, etc. No swelling was observed after stem cell therapy.

## Conclusions:

BM-SC therapy would be a valid alternative therapy for chronic knee osteoarthritis. The intervention is simple, does not require long hospitalization or surgical operation, provides pain relief, and significantly improves cartilage quality.

## Types of Improvements ALS

(n=16/N=32)



## Types of Improvements ALS

(n=16/N=32)

