

THE EFFECT OF INTRA-ARTICULAR INJECTION OF HYALURONIC ACID FOR MILD TO MODERATE KNEE OSTEOARTHRITIS IN RHEUMATOID ARTHRITIS PATIENTS

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INTRODUCTION

- Intra-articular injection of hyaluronic acid (HA) is a nonoperative treatment option for knee osteoarthritis which might provide symptomatic relief especially in early stages.
- This exogenous HA might stimulate endogenous HA production that can regulate both growth and function of chondrocytes by binding to CD44 receptors on the chondrocytes.
- In patients with rheumatoid arthritis (RA), the synovitis which is frequently observed is supposed to result from CD44 activity.
- Our **purpose** was to investigate the effect of intra-articular injection of hyaluronic acid in rheumatoid arthritis patients with mild to moderate knee osteoarthritis (OA).

MATERIAL & METHOD

- 36 RA patients → 28 ♀ & 8 ♂ (mean age: 59.8 years) → unilateral mild/moderate knee OA
 - 20 patients → stage II knee OA
 - 16 patients → stage III knee OA

Kellgren-Lawrence classification
- Intra-articular injection of HA once/week for 4 weeks
- Assessed via **WOMAC** index & visual analog scale (VAS) for pain
 - at baseline,
 - 1 month
 - 3 months after the initial shot

RESULTS

- WOMAC score was significantly improved in both the first (p=0.034) and second follow-up (p=0.044) for the pain and physical function subscales but not for the stiffness subscale (p=0.856), regardless the knee osteoarthritis stage.
- Concerning the VAS for pain it was also observed that HA was efficacious for all patients at the end of the first month (p=0.037) and remained effective after 3 months (p=0.041).

Table 1: Mean and SD values for the subscales pain, physical function & stiffness of WOMAC score for mild & moderate knee osteoarthritis in rheumatoid arthritis patients

WOMAC (Pain subscale) (0-20)	Stage II Knee OA (Mean ± SD)	Stage III Knee OA (Mean ± SD)
Pain at baseline	12.64 ± 3.58	13.13 ± 3.78
Pain (1 month follow-up)	9.82 ± 2.93	9.95 ± 2.75
Pain (3 months follow-up)	9.97 ± 2.71	10.02 ± 2.54
p<0.05		
WOMAC (0-68) (Physical function subscale)		
At baseline	36.55 ± 11.59	36.83 ± 11.86
1 month follow-up	31.83 ± 10.51	32.12 ± 11.70
3 months follow-up	32.78 ± 10.76	32.74 ± 12.08
p<0.05		
WOMAC (Stiffness subscale) (0-8)		
At baseline	4.34 ± 2.12	4.58 ± 2.75
1 month follow-up	4.11 ± 1.97	4.42 ± 2.05
3 months follow-up	4.18 ± 1.79	4.50 ± 2.16
p>0.05		

Figure 1: Visual analog scale (VAS) for pain.

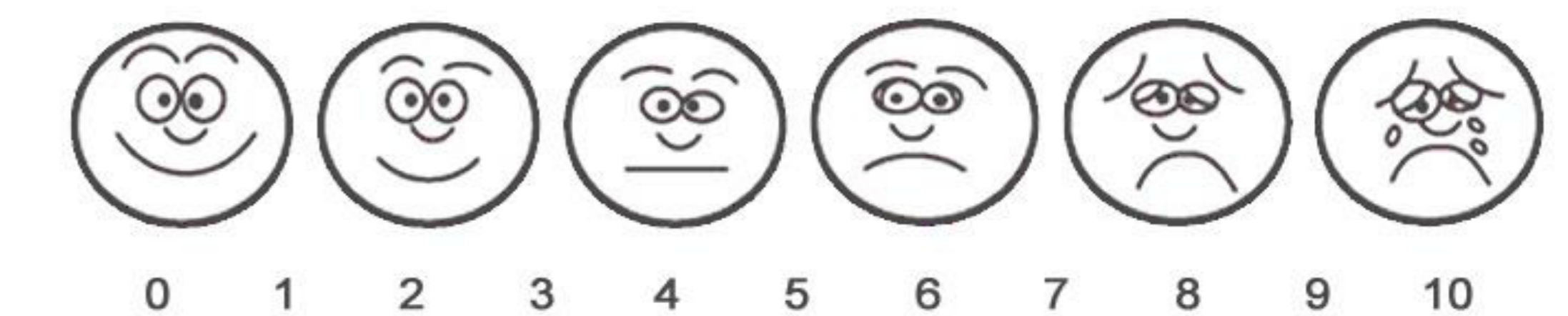


Table 2: Mean and SD values for VAS score.

VAS score (0-10)	Stage II Knee OA (Mean ± SD)	Stage III Knee OA (Mean ± SD)
At baseline	6.9 ± 0.9	7.4 ± 1.3
1 month follow-up	3.8 ± 0.8	4.3 ± 1.3
3 months follow-up	4.4 ± 1.0	5.2 ± 1.4
p<0.05		

CONCLUSIONS

- Intra-articular therapy with hyaluronic acid might be beneficial for patients with rheumatoid arthritis combined with mild or moderate knee osteoarthritis, providing alleviation of knee pain and enhanced clinical outcomes.
- However, no improvement was noted regarding the joint stiffness potentially due to irreversible mechanical issues.