

P 1-125

Adjunctive Effect of Dynamic Balance Exercise in Patients with Knee Osteoarthritis

Bong-Yeon Lee^{1*}, Woo-Yong Shin¹, Min-Ji An¹, Seo-Ra Yoon¹, Yu-Ri Choe^{1†}

Gwangju Veterans Hospital, Department of Rehabilitation Medicine¹

Objective

Patients with knee osteoarthritis have reduced balance ability and increased risk of falls associated with reduced strength of quadriceps muscles and lack of knee joint proprioception. Kinesthesia, balance and agility exercise has the purpose of improving joint stability, muscular recruitment and neuromuscular control. The purpose of the present study is to evaluate the effectiveness of balance exercise after intra-articular injection of hyaluronic acid (HA) in elderly patients with knee osteoarthritis.

Methods

30 patients with knee OA were enrolled in this study. The patients were randomly divided into two groups: Exercise after HA injection group (group A) and injection only group (group B). Both groups administered intra-articular HA injection and group A patients continued 20-session exercises for 4 weeks. The assessments were measured before injection and after 4 weeks treatment using the visual analog scale (VAS) for pain, the Western Ontario and McMaster University Osteoarthritis Index (WOMAC) for physical function, Berg balance scale (BBS), and computerized dynamic posturography using SMART Balance Master system (NeuroCom Inc., Clackamas, OR, USA) for balance function.

Results

There are no significant differences in the baseline characteristics and initial values between the two groups. In both groups, significant improvements in VAS, WOMAC and balance function were observed ($p < 0.05$). Compared between groups, exercise after HA injection group showed a significant improvement compared to HA only group in WOMAC (-11.5 ± 4.6 vs -7.3 ± 4.4 , $p < 0.05$) and computerized dynamic posturography (sensory organization test 7.0 ± 3.2 vs 3.7 ± 1.8 , $p < 0.05$; on-axis velocity left-right 0.3 ± 0.1 vs 0.1 ± 0.1 , $p < 0.05$; directional control left-right 6.0 ± 1.3 vs 3.6 ± 1.8 , $p < 0.05$).

Conclusion

It is suggested that balance exercise after intra-articular HA injection may result in improved balance function and physical function.