

and final scores of VAS and WOMAC were significantly higher ($p < 0.05$) in study group.

Conclusion: The results of the present study showed that virtual reality game-based exercise programs performed better results than conventional treatment program in patients with knee osteoarthritis.

REFERENCES:

- [1] Bennell KL, Dobson F, Hinman RS. Exercise in osteoarthritis: moving from prescription to adherence. *Best Pract Res Clin Rheumatol.* 2014; 28(1): 93-117.
- [2] Ju SB, Park GD, Kim SS. Effects of proprioceptive circuit exercise on knee joint pain and muscle function in patients with knee osteoarthritis. *J Phys Ther Sci.* 2015; 27(8): 2439-41.
- [3] Molina KI, Ricci NA, de Moraes SA, Perracini MR. Virtual reality using games for improving physical functioning in older adults: a systematic review. *J Neuroeng Rehabil.* 2014; 11: 156.

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THU0422

COMPARISON OF PRP DERIVED GROWTH FACTOR (PRGF) VERSUS HYALURONIC ACID (HA) IN MILD TO MODERATE KNEE OSTEOARTHRITIS; A SINGLE BLIND ONE YEAR RANDOMIZED CLINICAL TRIAL STUDY

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Background: Osteoarthritis (OA) is the most common joint disease with characteristics of progressive loss of joint cartilage.

Objectives: Aim of this study was to evaluate clinical outcomes of intra-articular injection of PRP derived growth factor (PRGF) versus hyaluronic acid (HA) in patients with knee osteoarthritis.

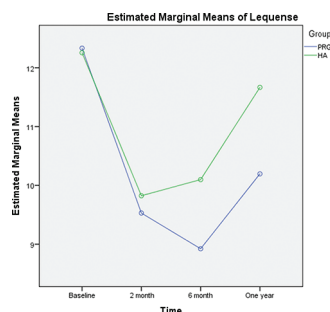
Methods: 102 patients with grade II or grade III knee OA were randomly assigned to 2 intra-articular injections of PRGF 3 weeks apart or 3 weekly injections of HA. Primary outcome was the mean change from baseline until 2, 6 and 12 months post intervention in scores of visual analog scale (VAS), WOMAC and Lequesne index.

Results: The mean age of patients was 57.08±7.3 in PRGF compared to 58.63±7.09 in HA group. In PRGF group, VAS decreased from 7.8±1.5 to 4.5±1.7, and from 7.8±1.1 to 6.1±1.8 in the HA group after 12 months ($P < 0.0001$). Total WOMAC score decreased from 41.96±11.71 to 27.10±12.3 ($P = 0.02$), and from 39.71±10.4 to 32.41±11.8 after 12 months, respectively ($P > 0.05$). In Lequesne index, all scores were significantly decreased after 12 months in PRGF group in comparison to HA group ($P < 0.001$).

Conclusion: Although PRGF and HA were both effective, but PRGF injection resulted in significantly higher satisfaction, lower VAS and Lequesne pain score and improvement in function of patients with symptomatic mild to moderate knee osteoarthritis.

REFERENCES:

- [1] Raeissadat SA, Rayegani SM, Tabibian E, Rahimi Dehgolan S. Intra-articular ozone injection efficacy in knee osteoarthritis: A systematic review with meta-analysis. *Annals of Physical and Rehabilitation Medicine.* 2018;61:e132-e3.
- [2] Raeissadat SA, Rayegani SM, Hassanabadi H, Fathi M, Ghorbani E, Babaei M, et al. Knee Osteoarthritis Injection Choices: Platelet-Rich Plasma (PRP) versus Hyaluronic Acid (A one-year randomized clinical trial). *Clinical Medicine Insights: Arthritis and Musculoskeletal Disorders.* 2015;8:CMAMD.S17894.
- [3] Raeissadat SA, Rayegani SM, Ahangar AG, Abadi PH, Mojjani P, Ahangar OG. Efficacy of Intra-articular Injection of a Newly Developed Plasma Rich in Growth Factor (PRGF) Versus Hyaluronic Acid on Pain and Function of Patients with Knee Osteoarthritis: A Single-Blinded Randomized Clinical Trial. *Clinical medicine insights Arthritis and musculoskeletal disorders.* 2017;10:1179544117733452.



Abstract THU0422 – Figure 1. Mean values of Lequesne total at baseline, 2, 6 and 12 months after injection. PRGF indicates plasma rich in growth factor

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THU0423

ANTERIOR TIBIOTALAR FAT PAD MORPHOLOGY AND SIGNAL INTENSITY ON MAGNETIC RESONANCE IMAGING ARE CORRELATED WITH PATIENT CHARACTERISTICS AND JOINT PATHOLOGY

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Background: Ankle sprains are the most frequent form of trauma in the ankle and up to 33% of patients experience ongoing pain 1 year after the initial trauma.¹ In the ankle, trauma is the primary etiology of osteoarthritis with an overwhelming proportion of 70-78%.² Recently, our group completed a small pilot study that suggested that the anterior tibiotalar fat pad (ATFP) should be investigated as a source of inflammation and pain.³

Objectives: In this study, we tried to investigate the innovative concept of the ATFP as missing link in the pathogenesis of persistent complaints and potential source driving inflammation in the development of osteoarthritis.

Methods: The present study is a secondary analysis of an observational case control study by Van Ochten et al.⁴ We included 106 patients with a Kellgren & Lawrence score of 0 in the tibiotalar joint on x-ray. T1 MRI scans were assessed for the signal intensity and area of the ATFP by mapping the fat pad in 'Mimics 18.0'. After importing those mapped scans in the program 'MATLAB', quantitative values of intensity and area were generated. Those values were statistically tested for correlations with patient characteristics and structural abnormalities by univariate and multivariate linear regression.

Results: MRI signal intensity of the ATFP is associated with BMI ($p = 0.03$), sex ($p < 0.01$) and age ($p = 0.01$). ATFP area is correlated with sex ($p < 0.01$) and presence of pre-OA signs in the subtalar joint ($p = 0.01$). After multivariate analysis, correcting for sex, subtalar pre-OA signs and BMI, persistent complaints were associated with ATFP area ($p = 0.04$).

Conclusion: This study demonstrates the involvement of the ATFP in hindfoot joint pathology. ATFP MRI characteristics were also influenced by patient characteristics. Further research should confirm these findings in a more elaborate population including OA patients, focus on histological validation and determine underlying pathogenic processes that may explain the observed correlations.

REFERENCES:

- [1] van Rijn, R. M. et al. What Is the Clinical Course of Acute Ankle Sprains? A Systematic Literature Review. *American Journal of Medicine* 121, (2008).
- [2] Valderrabano, V., Horisberger, M., Russell, I., Dougall, H. & Hintermann, B. Etiology of ankle osteoarthritis. *Clinical Orthopaedics and Related Research* 467, 1800–1806 (2009).
- [3] Clockaerts, S. et al. The anterior tibiotalar fat pad as a source of pain and inflammation in osteoarthritis of the ankle: anatomy, histology and imaging. *Osteoarthr. Cartil.* 26, S120 (2018).