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Volumetric findings of MRI after platelet rich plasma injection in knee osteoarthritis (A randomized clinical trial)

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Introduction/Background

Most of studies have focused on subjective and clinical symptoms effect of PRP and fewer papers have studied its objective effect on cartilage. In this study, we investigated the effect of PRP on cartilage characteristics by special [MRI](#) sequencings.

Material and method

In the double blind [randomized clinical trial](#), patients with grades 1, 2 and 3 of [osteoarthritis](#) were included in this study. All of the knees divided to groups randomly and exercise was prescribed for all of knees. Beside, PRP was injected 2 courses with 4 weeks interval in PRP group. For all of patients before and 6 months after treatment VAS (visual analogue scale) and WOMAC (Western Ontario and McMaster Universities [Arthritis](#) Index) were fulfilled and MRI was performed. Sequencings of MRI were PD fat saturated (coronal and sagittal) and transverse TRUFISP 3D. Imaging was scored according to 4 cartilage's characteristics including, Patellofemoral cartilage volume, Subarticular bone marrow abnormality, Medial and lateral meniscal disintegrity and [Synovitis](#).

Results

Twenty-three knees in case group and 23 knees in control group were studied. All of patients were female with mean age 57.57 ± 5.9 years old and mean BMI 28.49 ± 3.24 (Kg/m²). Mean total WOMAC

and VAS changes before and after treatment in control group were 11.61 ± 1.3 and 8.5 ± 1.1 respectively. In PRP group, mean total of WOMAC and VAS changes showed better improvement with 20 ± 3.2 and 12.3 ± 1.6 respectively (P -value < 0.05). In PRP group all of the radiologic variables except subarticular bone marrow abnormality had significantly improvement (P -value < 0.05). In comparison between 2 groups, Patellofemoral cartilage volume and synovitis had significantly changes in PRP group (P -value < 0.05).

Conclusion

In this study, in addition to the effect of PRP on VAS and WOMAC, there is effect on radiologic characteristics (Patellofemoral cartilage volume and synovitis) significantly. For more evaluation, study with more sample size is recommended.