Leukocyte-Rich Platelet-Rich Plasma Combined with an Allodermal Matrix Injection Demonstrates Greater Effectiveness in Tendon Regeneration Compared to Leukocyte-Rich Platelet-Rich Plasma Injection Alone in Patients with Chronic Lateral Epicondylitis: A Prospective Randomized Controlled Study

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INTRODUCTION: This study aims to compare the clinical outcomes of leukocyte-rich platelet-rich plasma (LRPRP) injections and a combination of allodermal matrix (ADM) and LRPRP injections in patients with lateral epicondylitis through a prospective randomized controlled trial.

METHODS: A total of 61 patients with confirmed tears of the common extensor tendon (CET) in the elbow, identified via magnetic resonance imaging (MRI), were randomly assigned to receive either an LRPRP injection (Group A, 31 patients) or a mixture of LRPRP and ADM injection (Group B, 30 patients). Clinical outcomes were assessed using the visual analog scale (VAS) for pain, the Quick Disabilities of the Arm, Shoulder, and Hand (DASH) questionnaire, the Patient-Rated Tennis Elbow Evaluation (PRTEE), and the Nirschl score. These metrics were compared between the two groups over a follow-up period of more than one year post-injection. MRI assessments were also conducted six months post-injection to evaluate tendon integrity.

RESULTS: The mean follow-up period was 13.5 months. Both groups demonstrated significant improvements in functional and pain scores at the final follow-up ($P < 0.001$). However, no significant differences in pain and functional scores were observed between the two groups throughout the follow-up period. MRI evaluations revealed that a significantly higher proportion of patients in Group A (83%) showed a reduction in the size of the torn tendon compared to Group B (56.7%) at six months post-injection ($P = 0.020$).

DISCUSSION AND CONCLUSION: Both LRPRP injections and LRPRP combined with ADM injections effectively improve clinical outcomes and tendon integrity in patients with CET. However, LRPRP combined with ADM group demonstrated significantly better improvement in tendon integrity compared to LRPRP alone group.