

Scientific Award Second Place Winner

**Platelet Rich Plasma (PRP) in Arthroscopic Rotator Cuff Repair:
A Prospective RCT Study, 2 years Follow-up**

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Summary:

The results of our study show autologous PRP reduces pain in the first months post-op and promotes quicker healing. Long-term results of subgroups of stage 1 and 2 tears suggest PRP effectively affects rotator cuff healing.

Abstract:

Hypothesis:

Local application of autologous PRP improves tendon healing in patients undergone arthroscopic rotator cuff repair.

Study design: Prospective, randomized, controlled, double blind study; Level of evidence, 1. Considering an alpha level of 5%, a power of 80%, 22 patients for group are needed.

Materials and Methods:

Fifty-three patients who undergone a shoulder arthroscopy for the repair of complete rotator cuff tear, were randomly divided into two groups (block randomization procedure): a treatment group (N=26) who received an intra-operative application of PRP in combination with an autologous thrombin component and a control group (N=27). Patients were evaluated with Validated outcome score. An MRI was performed in all case at more than 1 year post-op. All patients had the same accelerated rehabilitation protocol.

Results:

The two groups were omogeneous. Pain score in treatment group was lower than control group at 3, 7, 14 and 30 days after surgery ($p < 0,05$). Strenght in External Rotation (dynamometer), SST, UCLA and Constant scores in treatment group were significantly higher than control group at 3 months after surgery (SER: $3 \pm 1,6\text{kg}$ versus $2,1 \pm 1,3\text{kg}$; SST: $8,9 \pm 2,2$ versus $7,1 \pm 2,7$; UCLA: $26,9 \pm 3$ versus $24,2 \pm 4,9$; Constant: 65 ± 9 vs $57,8 \pm 11$; $p < 0,05$). There was no difference between the two groups after 6, 12 and 24 months. The MRI follow-up showed no significant difference in the healing rate. In the subgroup of stage 1 and 2 tears, with less retraction and more prone to the effect of a biological therapy, SER in PRP group were significant higher at 3, 6, 12 and 24 months post-op. ($p < 0,05$).

Conclusions:

The results of our study showed autologous PRP reduced pain in the first months post-op and promoted quicker healing. Long-term results of subgroups of stage 1 and 2 tears suggest PRP effectively affected cuff rotator healing.