

PRP in Shoulder Repair

2. Randelli P, Arrigoni P, Ragone V, et al. **Platelet rich plasma in arthroscopic rotator cuff repair: a prospective RCT study, 2-year follow-up.** J Shoulder Elbow Surg. 2011 Jun;20(4):518-28

HYPOTHESIS: Local application of autologous platelet rich plasma (PRP) improves tendon healing in patients undergoing arthroscopic rotator cuff repair.

STUDY DESIGN: Prospective, randomized, controlled, double blind study; considering an alpha level of 5%, a power of 80%, 22 patients for group are needed.

MATERIALS AND METHODS: Fifty-three patients who underwent shoulder arthroscopy for the repair of a complete rotator cuff tear were randomly divided into 2 groups, using a block randomization procedure. A treatment group (N = 26) consisted of those who received an intraoperative application of PRP in combination with an autologous thrombin component. A control group (N = 27) consisted of those who did not receive that treatment. Patients were evaluated with validated outcome scores. A magnetic resonance image (MRI) was performed in all cases at more than 1 year post-op. All patients had the same accelerated rehabilitation protocol.

RESULTS: The 2 groups were homogeneous. The pain score in the treatment group was lower than the control group at 3, 7, 14, and 30 days after surgery ($P < .05$). On the Simple Shoulder Test (SST), University of California (UCLA), and Constant scores, strength in external rotation, as measured by a dynamometer, were significantly higher in the treatment group than the control group at 3 months after surgery (strength in external rotation [SER]: 3 +/- 1.6 vs 2.1 +/- 1.3 kg; SST: 8.9 +/- 2.2 vs 7.1 +/- 2.7; UCLA: 26.9 +/- 3 vs 24.2 +/- 4.9; Constant: 65 +/- 9 vs 57.8 +/- 11; $P < .05$). There was no difference between the 2 groups after 6, 12, and 24 months. The follow-up MRI showed no significant difference in the healing rate of the rotator cuff tear. In the subgroup of grade 1 and 2 tears, with less retraction, SER in the PRP group was significant higher at 3, 6, 12, and 24 months postoperative ($P < .05$).

CONCLUSION: The results of our study showed autologous PRP reduced pain in the first postoperative months. The long-term results of subgroups of grade 1 and 2 tears suggest that PRP positively affected cuff rotator healing.