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 ±1,6kg versus 2,1±1,3kg; SST: 8,9±2,2 versus 7,1±2,7; UCLA: 26,9±3 versus 24,2±4,9; Constant: 65±9 vs 57,8±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.