Intra-articular Autologous Conditioned Plasma Injections Provide Safe and Efficacious Treatment for Knee Osteoarthritis

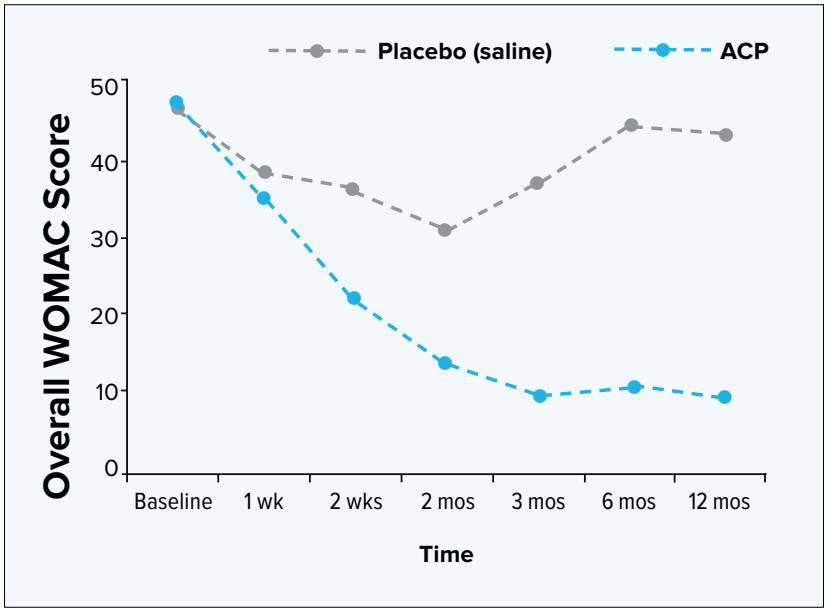
Osteoarthritis (OA) of the knee is a leading adult joint disease. The severity of knee OA is commonly classified using the Kellgren-Lawrence (K-L) grading system which ranges from 0 to 4, with 4 being severe. Approximately 10% of men and 13% of women over the age of 60 suffer from knee OA.

Intra-articular (IA) injection of platelet-rich plasma (PRP) is an emerging treatment option for OA of the knee. PRP is appealing because it uses the patient's own blood. Depending on the method of preparation, PRP may be leukocyte-poor (LP-PRP) or leukocyte-rich (LR-PRP). Studies have shown promising results for patients with knee OA treated with LP-PRP.

Smith PA

Intra-articular autologous conditioned plasma injections provide safe and efficacious treatment for knee osteoarthritis. *Am J Sports Med.* 2016;44(4):884-891. doi:10.1177/0363546515624678.

- The purpose of this study was to characterize the safety and efficacy of the use of autologous conditioned plasma (ACP) in patients with K-L Grade 2 or 3 knee OA.
- Treatment was administered to 2 study groups, each receiving 3 injections of either LP-PRP ACP or a placebo (saline) at 1-week intervals.
- This study was conducted under guidelines established by the FDA. The study was a sanctioned FDA feasibility study (Investigational Device Exemption [IDE]) to examine the safety and clinical efficacy of IA PRP injections for knee OA and was limited by the FDA to 30 patients at one site.
- A total of 30 patients were included in this prospective, single-center, randomized, double-blind, parallel-group study.
- Patients were randomly selected to receive 3-8 mL of ACP (n = 15) or saline (n = 15) injections in the knee once a week for 3 weeks.
- The safety and efficacy of these 3 IA ACP injections were evaluated at 1 and 2 weeks, and at 2, 3, 6, and 12 months after the first treatment visit. The efficacy outcomes were measured in terms of Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scores.



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Results

- No adverse effects due to ACP administration were reported.
- The ACP group showed a significant decrease in WOMAC scores 1 week after its administration. These scores continued to decline through 3 months before plateauing out to 12 months.
- There was a statistically significant difference between the WOMAC scores of the ACP group and those of the placebo group starting at 2 weeks.
- WOMAC scores for the placebo control group improved by only 7% from the initial baseline score, whereas scores in the ACP group improved by 78%.
- The study concluded that ACP was safe to use, and that pain relief and functional improvement in regards to knee OA were better for the ACP group.