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Clinical and radiographic comparison of a single LP-PRP injection, a single hyaluronic acid injection and daily NSAID administration with a 52-week follow-up: a randomized controlled trial.

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Abstract

BACKGROUND: Knee osteoarthritis (OA) is a disease with a high prevalence in the adult population. Nonsteroidal anti-inflammatory drugs (NSAID) or intra-articular injections [hyaluronic acid (HA) or platelet-rich plasma (PRP)] can provide clinical benefit. Magnetic resonance imaging (MRI) has proven to be useful for the evaluation of cartilage volume and thickness in knee osteoarthritis. The purpose of this study was to evaluate the benefit provided by PRP injection in comparison with hyaluronic acid and NSAID in knee OA patients and to compare the radiographic evolution at the 52-week follow-up.

METHODS: One hundred and six patients were enrolled and randomized according to the Spanish Rheumatology Society knee osteoarthritis diagnosis criteria. Ninety-eight patients completed the study (33 received NSAID treatment, 32 a single hyaluronic acid injection and 33 a single PRP injection). Patients were prospectively evaluated at baseline, 26 and 52 weeks using the Western Ontario McMaster Universities osteoarthritis index (WOMAC) and the visual analogue scale (VAS), and at baseline and 52 weeks with X-ray and MRI.

RESULTS: A 20% decrease in WOMAC pain and increase in physical function was found in 30 and 24%, respectively, of those patients who received PRP treatment, at the 52-week follow-up. WOMAC pain and VAS improved in the hyaluronic acid and NSAID groups. However, better results were obtained in the PRP group compared to hyaluronic acid and NSAIDs ($P < 0.05$). No differences in Kellgren-Lawrence or cartilage thickness progression were found.

CONCLUSIONS: Leukocyte-poor platelet-rich plasma (LP-PRP) injections are better in terms of clinical improvement with respect to HA injections or oral NSAID treatment in knee osteoarthritis patients at the 52-week follow-up. Moreover, a single LP-PRP injection is effective. However, LP-PRP has no influence on cartilage progression.

LEVEL OF EVIDENCE: Level II.

KEYWORDS: Cartilage injury; Hyaluronic acid; Intra-articular injection; Knee osteoarthritis; Platelet-rich plasma

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