

Synergistic Effect of Platelet-Rich Plasma with Hyaluronic Acid Injection Following Arthrocentesis to Reduce Pain and Improve Function in Temporomandibular joint (TMJ) Osteoarthritis

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Abstract : Increasing evidence supports the use of platelet-rich plasma (PRP) combined with hyaluronic acid (HA) for the treatment of knee osteoarthritis, which effectively promotes cartilage repair. This study aimed to determine whether injection of PRP+HA following arthrocentesis reduces pain and improves maximum incisal opening. This was a single-blind, prospective, randomized control study. The patients were selected based on the Hegab classification: Group I: patients treated with arthrocentesis followed by a single PRP injection; Group II (Control): patients treated with arthrocentesis followed by a single HA injection; and Group III: patients treated with arthrocentesis followed by a single PRP+HA combination injection. The primary predictor variable was the medication used for injection. The primary outcome variables were the maximum voluntary mouth opening and pain index scores. The secondary outcome variable was joint sounds. All outcome variables were assessed and compared among the three groups at baseline and at 1-, 3-, 6-, and 12-month intervals. Other variables, including patients' age and sex, were evaluated in relation to the patient outcomes. Injecting PRP+HA showed statistically significant improvement in the primary and secondary treatment outcomes over PRP or HA injection throughout the study period ($P < 0.005$). Injection of PRP+HA following arthrocentesis had significant long-term clinical efficacy regarding pain relief that was considered the main concern of both the patient and clinician.

Keywords : TMJ, HA, PRP, osteoarthritis

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