

Clinical Results of PST (Pulsed Signal Therapy) on Anterior Knee Pain with Patellar Chondropathy: A Randomized Prospective Study

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Summary:

PST therapy in patients with patellar chondropathy and patellofemoral pain syndrome was effective in improving the Kujala functional score compared to placebo 3 months and 12 months after treatment.

Abstract:

Objective: To evaluate the effect of pulsed signal therapy (PST) on patellofemoral pain syndrome associated with patellar chondropathy.

Methods: A total of 25 patients (41 knees) who had patellar chondropathy and patellofemoral pain syndrome were prospectively included in the study. After randomization, 17 knees received placebo treatment and 24 knees were treated with 9 PST applications. The PST group was analyzed by ascertaining the Kujala score before and 3, 6 and 12 months after treatment. In the placebo group, the Kujala score was ascertained before and 3 months after the placebo treatment. The participants were then given effective PST treatment, and new scores were taken 3, 6 and 12 months after treatment. All of the interventions and analyses up to 3 months were double-blind. After the PST treatment of the initial placebo group, it was not possible to maintain blinding. The degree of articular cartilage damage, patellar height and trochlear dysplasia were analyzed as confounding factors.

Results: By the third month, the PST group exhibited a mean improvement of 9.61 (± 7.5) Kujala points, compared to 0.53 (± 1.8) points in the placebo group, representing a statistically significant difference ($p < 0.001$). Patellar height, trochlear dysplasia and presence of grade IV lesions were not confounders. The placebo group patients also progressively improved ($p < 0.05$) after completion of treatment up to the 6th month. In analyzing all effective PST treatments as a whole, there was a significant progressive improvement between pre-treatment and the 3rd month, between the 3rd month and 6th month and between the 6th month and 12th month ($p < 0.05$).

Conclusion: PST therapy in patients with patellar chondropathy and patellofemoral pain syndrome was effective in improving the Kujala functional score compared to placebo 3 months after treatment. Moreover, the improvement was maintained and progressive for up to 12 months of follow-up.