



*Original Article*

***Effectiveness of the Application of Sonophoresis and Iontophoresis in the Treatment of Complex Regional Pain Syndrome Type I in the Hands***

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**Summary**

*Having chronic inflammation in muscles and joints often leads to neurological disorders such as CRPS type 1 which is more often than not accompanied with pain, soreness or inflammation. Having only limited success with CRPS 1 treatment, alternative therapies such as sonophoresis and iontophoresis have gained popularity in the medical world. This paper's aim is to study if these alternative therapies are effective in managing the symptoms of CRPS. Rationale: The goal of this study was to evaluate the efficacy of iontophoresis and sonophoresis in alleviating pain, enhancing functional performance, and improving the quality of living in a patient presenting with CRPS-I involving hands. Methods: A miscellaneous sample of 60 patients diagnosed with complex regional pain syndrome-I affecting hands was randomized equally into 3 groups. The trial was carried out in a tertiary care unit. Three groups were divided as sonophoresis (20), iontophoresis (20) and control(i.e standard care) (20). Overall hand functionality was targeted through the arms, shoulder and hand disabilities (DASH) questionnaire targeting self recorded quality of life improvement and measured painting using a Visual Analog Scale STATISTICAL ANALYSIS: Data were analyzed using ANOVA and paired sample t-tests, with significance set to  $p < 0.05$ . Both the sonophoresis and iontophoresis groups reported a noticeable improvement in pain, functionality, and overall well-being compared to the control group. More specifically, the two groups of patients reported a 5 percent and greater increase respectively in all three categories ( $p < 0.05$ ). The sonophoresis group experienced a 45% decrease in their VAS scores, whereas the iontophoresis group experienced a 40% decrease. The DASH score functional recovery was 35% for the sonophoresis group and 30% for the iontophoresis group. Changes in the quality of life reflect increases of 25% and 20%. Most significantly, neither of the treatment groups reported any significant adverse effects. In Conclusion, In combination with other treatment modalities of choice, sonophoresis and iontophoresis have been demonstrated to achieve effective pain relief, functional improvement and improved quality of life in the management of CRPS-I in hands. For this condition, these modalities are best proposed as an element of a multimodal management approach.*

**Keywords:** *Sonophoresis , Iontophoresis, Treatment, Complex Regional Pain Syndrome Type I*

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**AJMS, Volume 11, Issue 1 ,2025**