de Andrade Melo Knaut, S., Hoang, M.A., Bossard, E.K., Chiquito, V.R., Eduarda Mazepa M., Portela, L.A., Zene, M.V., Packham, T.L., Dyer, J.O., Mermet-Joret, N., Annoni, J.M. & Spicher, C.J. (2024, **in print**). Static Mechanical Allodynia is a paradoxical painful touch-evoked tactile HYPO-aesthesia: A retrospective analysis of 86 patients with CRPS of the foot. *Douleur et analg*

Abstract

Objective: To determine the falsifiability of the proposed etiology of static mechanical allodynia (SMA) as a paradoxical painful touch-evoked slight tactile HYPO-aesthesia caused by Aβ axonal lesions in patients treated for Complex Regional Pain Syndrome (CRPS) of the foot.
Methods: This is a retrospective analysis of prospectively collected clinical data of patients with CRPS of the foot. Patients who achieved resolution of their SMA following the assessment and treatment of the method of Somatosensory Pain Rehabilitation (SPR) were included in the study. The shift from SMA to an underlying tactile HYPO-aesthesia supported the recommendation of *somato*sensory re-learning of the method of SPR. Allodynography and Rainbow Pain Scale were two clinical examination signs used pre-treatment to quantify the allodynic territory. The quality and intensity of pain were assessed using the McGill Pain Questionnaire (MPQ). Then, the underlying tactile HYPO-aesthesia was assessed with the 2-Point Discrimination Test (2PDT) and Pressure Perception Threshold (PPT).
Results: Eighty-six patients with a CRPS of the foot were included. On admission, 43 patients had a discrete, 26 a consequential and 17 a serious SMA. After disappearance of SMA, patients had a slight and partial underlying HYPO-aesthetic territory confirmed with a PTT mean of 2.8 g. Significant improvements were noted for the MPQ, PPT and 2PDT ($p < 0.001$) with a large effect size.
Conclusion: This study confirms that SMA is a paradoxical painful touch-evoked tactile HYPO-aesthesia in patients with CRPS. Moreover, results support the efficacy of the method of SPR to improve neuropathic pain within this population.

Keywords: Complex regional pain syndrome · Allodynia · Somatosensory pain rehabilitation · Tactile hypoaesthesia