

Nociceptive system evaluation in patients with non suicidal self-injury (nssi) and suicidal behavior disorder (sbd): a neurophysiological study with quantitative sensory testing and laser evoked potentials. Preliminary results.

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Introduction:

Non-suicidal self-injury (NSSI) is the act of purposely harming one's own body tissue without the intent of suicide. NSSI is often repetitive with varying degrees of severity. Although related, non-suicidal and suicidal self-injury are conceptualized as overlapping, but distinct, clinical phenomena. However, NSSI may be a predictor of later suicide attempts. Recent literature underlies the need to link self-reported pain in these patients with neurobiological indices. According to Joiner's interpersonal theory of suicide, NSSI may lead to future suicidality by gradually habituating the individual to pain, thus altering its perception and increasing the individual's capability for suicide. Several studies raised the possibility that NSSI is associated with a nociceptive system dysfunction. In this study we aimed at verifying if there is a dysfunction of the nociceptive system in these patients and if so, if it is related to the severity of disease.

Methods:

We have currently enrolled 14 young women suffering from NSSI/SBD (12 nssi and 2 sbd) and 12 age-matched healthy controls. Each participant underwent quantitative sensory testing, including cold detection threshold, warm detection threshold, cold pain threshold and heat pain threshold, and laser evoked potential recording from 32 scalp electrodes after hand stimulation.

EEG Analysis

EEG data were preprocessed and analyzed using Letswave 5. EEG data were segmented into epochs using a time window ranging from 0,2 s before the stimulus to 1 s after. Each epoch was band-pass filtered from 1-30 Hz with Fast-Fourier Transform (FFT) analysis. We measured the peak latencies of the vertex N2 and P2 components. The amplitude of all components was measured from baseline to peak.

Results:

To date quantitative sensory testing data and LEP variables did not differ between NSSI patients and healthy participants. No difference was found in LEP- threshold and pain rating between patients and controls.

To date no correlation was found between duration and severity of disease and neurophysiological parameters.

Discussion:

According to our preliminary results NSSI is not associated with a nociceptive system dysfunction. Our findings are currently against previous works demonstrating an alteration of QST thresholds in patients. We surely need to improve our sample to confirm this data.

References:

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PMID: 27323296



Figure 1. Laser stimulation and QST thermode

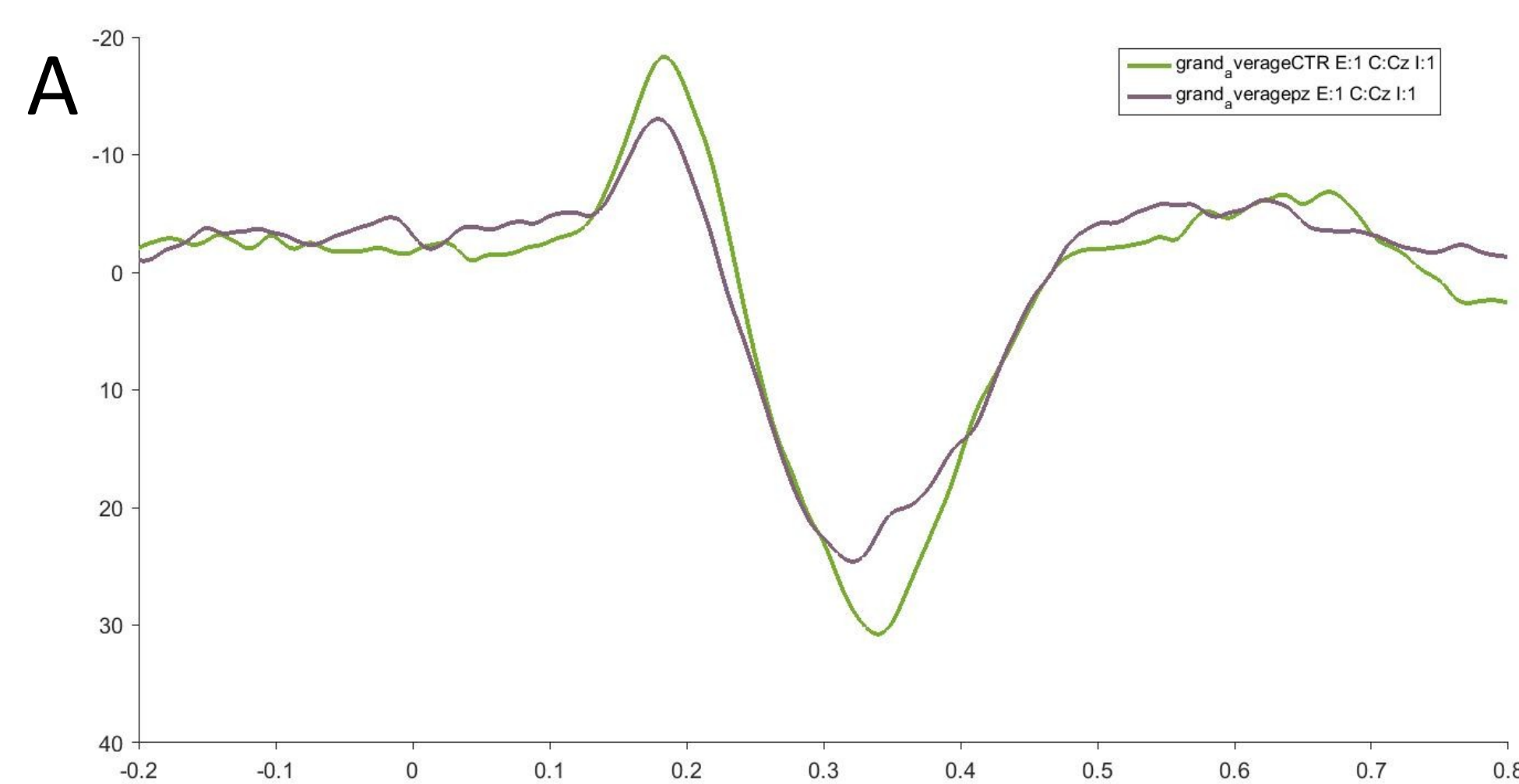
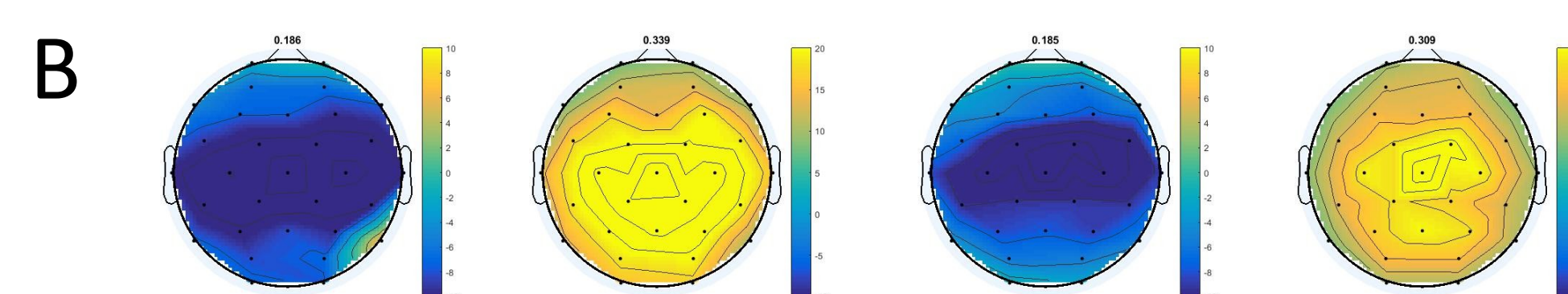


Figure 2. A. Laser Evoked Potentials (LEPs) recordings in patients with NSSI/SBD disease and controls. Purple trace is the grand average computed on 14 subjects, green trace is the grand average computed on 12 controls.



B. Scalpmap of the N2P2 component in subjects and healthy controls

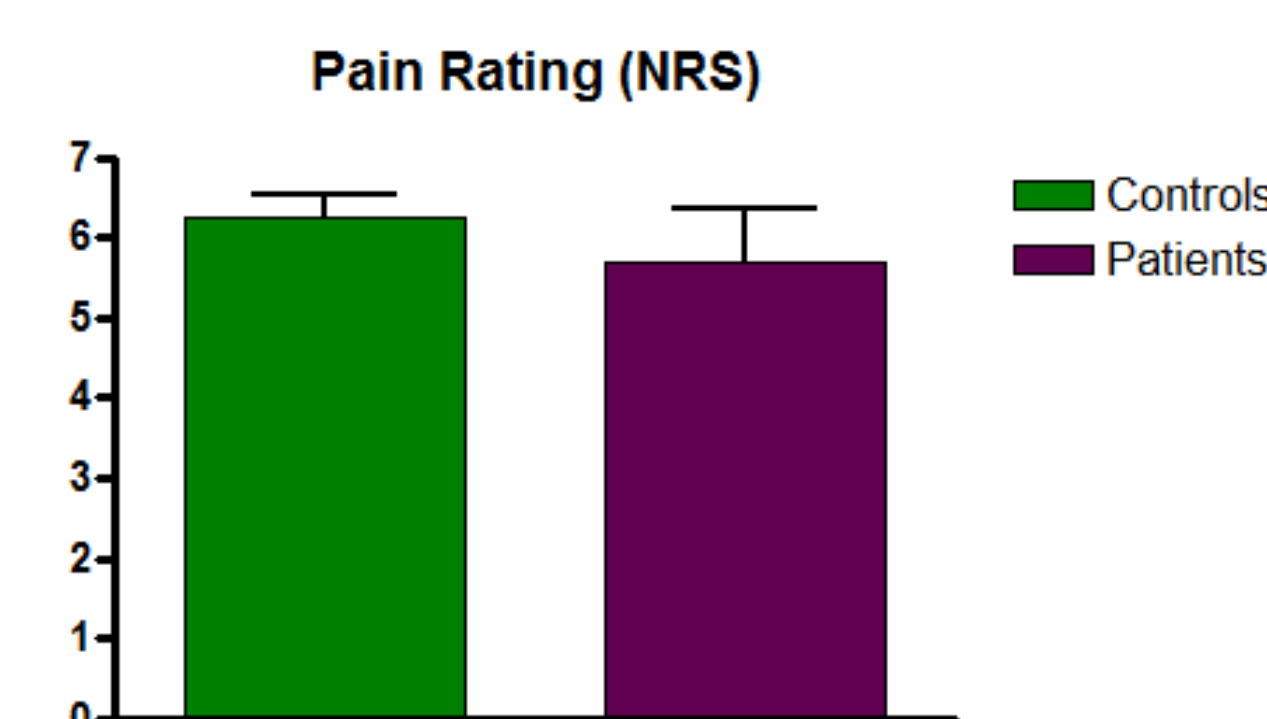
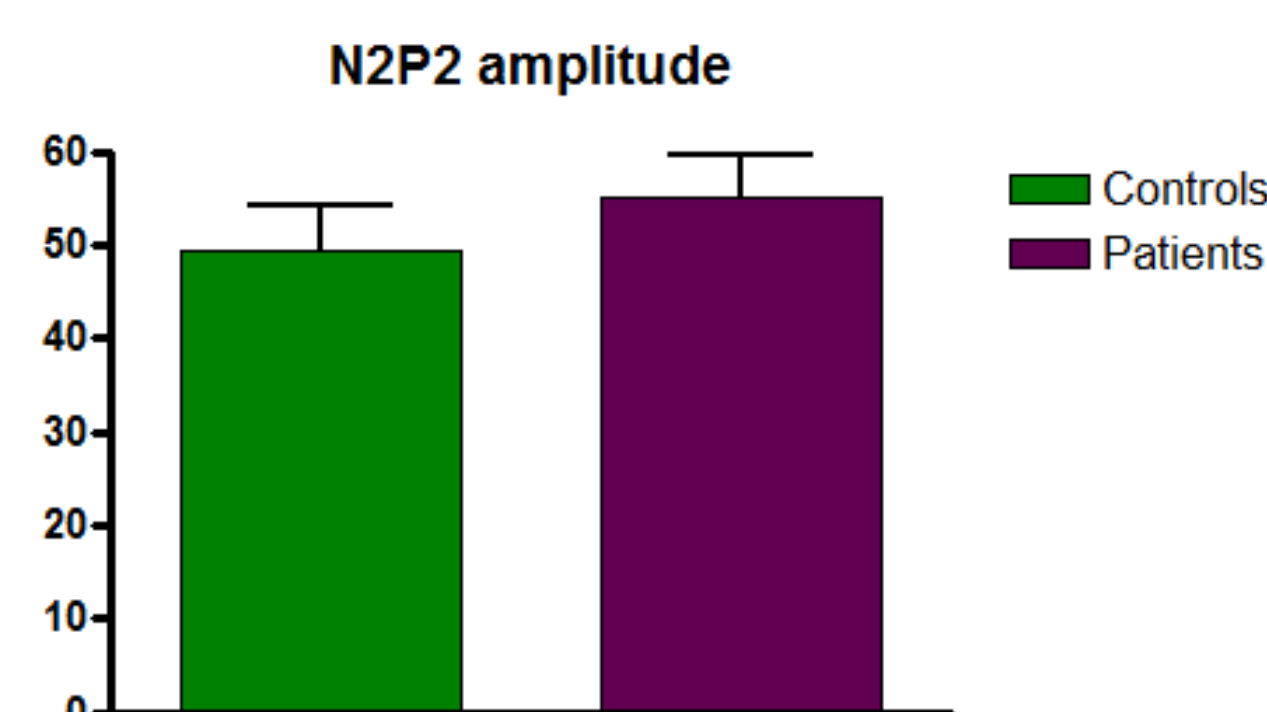


Figure 3. N2P2 amplitude and pain ratings were similar between patients and controls.