
Chronic pain is not only associated with structural, but also functional changes in the nervous system. Many patients develop a so called allodynia, where the surrounding of the painful site is sensitized by a long lasting noxious input. Allodynia is suspected to contribute substantially to the ongoing pain process. Reflex therapies, like the Gua Sha, a traditional Chinese massage technique preferentially used in the treatment of back pain, are supposed to affect the transmission and processing of sensory information on receptor and spinal level (Musial, Michalsen & Dobos, 2008). If so, it can be assumed, that the Gua Sha massage should not only decrease the pain level itself, but also change sensory thresholds in the pain surrounding area. In order to test this, we applied the Gua Sha massage in 15 patients with chronic back pain and compared the effects on pain and sensory thresholds to those of 15 patients in the waiting list control group.

**Methods**: 30 patients with chronic back pain (mean age: 50.27 ± 10.12 years) were randomized to 2 groups (treatment, waiting list control). On day 1, all patients rated their actual pain on an numeric rating scale from 0 (no pain at all) - 10 (worst pain imaginable). Baseline sensory testing was then conducted, followed by randomization and the Gua Sha massage for the treatment condition. On day 8 after the evaluation of actual pain, the 2nd sensory testing was performed and afterwards the waiting list control received the Gua Sha massage. Sensory testing included determination of mechanical detection threshold (MDT), pressure pain threshold (PPT) and vibration detection threshold (VDT) as described in the Quantitative Sensory Testing procedure (QST) by Rolke et al. (2006) on 4 different locations of the body: a) site of maximal pain, b) 10 cm next to this max pain site as well as two control areas on c) the right hand and d) the right foot. In accordance to the QST procedure MDT and PPT scores, but not VDT scores were logarithmized. For further analysis, differences between the 2 measurements were calculated and compared between the treatment groups.

**Results**: First results show a significant decrease in mean pain ratings for the treatment group compared to the waiting list controls (Mann-Whitney, p<.05). Reliability of the sensory testing was assessed by means of correlations between day 1 and 8 of measurements on control areas (correlations ranged from 0.512 to 0.969). t-tests were calculated to test differences in thresholds (T2-T1) between the groups. No differences were found for vibration at all. For MDT and PPT group differences were found in 10 cm next to the max pain site, but not at the painful site. For the treatment group mechanical detection threshold as well as pressure pain threshold at 10 cm next to the max pain site increased. There was no such effect for the waiting list control (MDT: T=-2.180, p<.05; PPT: T=-2.182, p<.05).

**Discussion**: A clinically significant improvement in pain reduction is defined as a minimum of 30 percent pain decrease. Gua Sha not only decreased pain intensity for 35% on average compared to 4.6% increase in the waiting list control. Treatment group also had increased MDT and PPT at 10 cm next to the max pain site, but not on the pain site itself. Together with the steady thresholds in both control areas this result can be interpreted as the result of functional changes in the sensitized area. It appears that Gua Sha reduced allodynia in the pain surrounding area.