



Impact of continuous low level heatwrap therapy in acute low back pain patients: subjective and objective measurements.

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OBJECTIVES: Muscular pain is usually associated with increased muscle tension resulting in a vicious tension-pain-cycle, leading to increased alertness and stress. However, this has not been broadly evaluated using objective methods, for example, looking at neurophysiologic changes. The focus of this study was, therefore, to combine objective [spontaneous electroencephalogram (EEG) as a surrogate of alertness and stress] with subjective parameters (self-assessed pain affected variables) to investigate the effect of continuous low-level heat therapy in low back pain (LBP)-patients.

METHODS: This investigation was a randomized, active controlled, parallel-designed study. Thirty patients were randomly assigned to one of 2 groups: the control group, in which patients were provided with oral analgesics (nonsteroidal anti-inflammatory drug) and instructed to use it if needed, and the treatment group, in which patients in addition to oral analgesics as rescue medication were provided with a heatwrap therapy. The objective parameters were assessed by measuring the power of frequency bands in the spontaneous EEG.

The subjective parameters (sleep pattern, well-being, pain intensity, etc.) were assessed by a Pain, Sleep, and Stress Questionnaire. **RESULTS:** In the EEG-recordings, the heatwrap therapy group showed decreased power in Beta-1 and Beta-2 frequency bands compared with the control group, indicating a reduction in arousal. Also, in comparison to the control group, the heatwrap therapy group reported significantly reduced LBP, everyday situations being less stressful, a better night's sleep, and a decreased number of daytime naps.

DISCUSSION: In addition to classic psychophysical assessment of pain-related parameters and sleep quality, performance in daily life, we were able to obtain objective measures (EEG) that suggest an acute therapeutic relaxation on the basis of the central nervous system effects accompanying the reported significant pain relief. We believe that this was due to a reduced nociceptive information load in LBP-patients after the use of the heatwrap therapy.

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