

**Publication****Acupuncture in migraine : investigation of autonomic effects****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1192959**Author(s)** Bäcker, Marcus; Grossman, Paul; Schneider, Jens; Michalsen, Andreas; Knoblauch, Nicola; Tan, Linda; Niggemeyer, Corinna; Linde, Klaus; Melchart, Dieter; Dobos, Gustav J**Author(s) at UniBasel** [Grossmann, Paul](#) ;**Year** 2008**Title** Acupuncture in migraine : investigation of autonomic effects**Journal** The clinical journal of pain**Volume** 24**Number** 2**Pages / Article-Number** 106-15**Keywords** acupuncture, migraine, mechanism of action, heart rate variability, sympathetic nerve activity, autonomic nervous system

**OBJECTIVE:** A dysregulation of the autonomic nervous system is discussed as a pathogenetic factor in migraine. As acupuncture has been shown to exhibit considerable autonomic effects, we tested whether the clinical effects of acupuncture in migraine prophylaxis are mediated by changes of the autonomic regulation. **METHODS:** We simultaneously monitored changes of heart-rate variability (HRV) as an index of cardiac autonomic control and clinical improvement during an acupuncture treatment in 30 migraineurs. HRV was derived from spectral analysis of the electrocardiogram, which was performed before, during, and after the first and the last session of a series of 12 acupuncture sessions. Migraineurs were randomly allocated to 2 groups receiving either verum acupuncture (VA) or sham acupuncture (SA) treatment. **RESULTS:** Across the combined VA and SA groups, the clinical responders (with at least 50% reduction of migraine attacks) exhibited a decrease of the low-frequency (LF) power of HRV in the course of the treatment, which was not observed in patients without clinical benefit. VA compared with SA induced a stronger decrease of high-frequency power. The mode of acupuncture, however, did not have an impact on the LF component of HRV or the clinical outcome. **DISCUSSION:** The data indicate, that VA and SA acupuncture might have a beneficial influence on the autonomic nervous system in migraineurs with a reduction of the LF power of HRV related to the clinical effect. This might be due to a reduction of sympathetic nerve activity. VA and SA induce different effects on the high-frequency component of HRV, which seem, however, not to be relevant for the clinical outcome in migraine.

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