Antiallodynic effects of acupuncture in neuropathic rats.

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Peripheral nerve injury often results in abnormal neuropathic pain such as allodynia or hyperalgesia. Acupuncture, a traditional Oriental medicine, has been used to relieve pain and related symptoms. However, the efficiency of acupuncture in relieving neuropathic pain is not clear. The aim of this study was to investigate the anti-allodynic effects of acupuncture through behavioral and electrophysiological examinations. Male Sprague-Dawley rats were subjected to neuropathic surgery consisting of a tight ligation and transection of the left tibial and sural nerves, under pentobarbital anesthesia. The acupuncture experiment consisted of four different groups, one treated at each of three different acupoints (Zusanli (ST36), Yinlingquan (SP9), and a sham-acupoint) and a control group. Behavioral tests for mechanical allodynia and cold allodynia were performed for up to two weeks postoperatively. Extracellular electrophysiological recordings were made from the dorsal roots using platinum wire electrodes. Mechanical and cold allodynia were significantly reduced after acupuncture treatment at the Zusanli and Yinlingquan acupoints, respectively. Electrophysiological neural responses to von Frey and acetone tests were also reduced after acupuncture at the same two acupoints. These results suggest that acupuncture may be beneficial in relieving neuropathic pain.