

Effect of acupuncture on the regularity of gastric myoelectrical activity

XM Lin, J Ren, Jie Liang, F Mu, M Zhang, Jiande Z Chen

XM Lin, Jie Liang, F Mu, M Zhang, Jiande-Z Chen, Baptist Medical Center of Oklahoma; J Ren, University of Oklahoma Health Sciences Center, Oklahoma, United States

Jie Liang, Jiande Z Chen, Institute for Healthcare Research, Baptist medical center, Oklahoma, OK 73112, United States

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Abstract

AIM: Acupuncture has been shown to stimulate gastric motility. It can improve gastrointestinal motility and reduce the severity of symptoms of motion sickness. The aim of this study was to test our hypothesis that acupuncture enhances the regularity of gastric myoelectrical activity in humans.

METHODS: Nine healthy Chinese (5M, 4F, mean age 45) and seven Chinese patients with upper abdominal discomfort (1M, 6F, mean age 41) participated in this study. Gastric myoelectrical activity was recorded using surface eletrogastrography (EGG). The EGG recording was made for 30 min in the fasting state, 30 min during acupuncturing with Zusanli and Neiguan points being electrically stimulated continuously, and 30 min after acupuncture. The following

parameters were analyzed: (1) the percentage of 2-4 cycles/min (cpm) waves, which reflects the regularity of the gastric myoelectrical activity; (2) Acupuncture significantly increased the percentage of gastric arrhythmia (no rhythmic activity), bradygastria (0.5-2 cpm), and tachygastria (4-9 cpm).

RESULTS: (1) The percentage of regular slow waves was found to be low in Chinese in comparison with that in American published in the literature, but no difference was noted between the two groups ($64.8\% \pm 10.1\%$ vs $64.6\% \pm 8.6\%$, normals vs patients). (2) Acupuncture significantly increased the percentage of 2-4 cpm in both groups (normal $64.8\% \pm 10.1\%$ vs $74.8\% \pm 6.9\%$, $P < 0.05$; Patients $64.6\% \pm 8.6\%$ vs $72.2\% \pm 9.4\%$, $P < 0.02$). This increase was sustained during the 30 min period after acupuncture. (3) The increase of the normal 2-4 cpm activity was found to be attributed to the normalization of gastric arrhythmia which was found in the baseline recording compared with during acupuncture (normals $26.9\% \pm 8.5\%$ vs $10.8\% \pm 3.6\%$, $P < 0.01$; Patients $22.9\% \pm 6.6\%$ vs $11.5\% \pm 4.1\%$, $P < 0.02$). (4) Acupuncture showed no significant effects on the percentage of tachygastria or bradygastria.

CONCLUSION: Acupuncture enhances the regularity of the gastric slow wave in both normals and patients by normalizing gastric arrhythmia.

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