Investigation of specificity of auricular acupuncture points in regulation of autonomic function in anesthetized rats.

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Abstract

Auricular acupuncture has been used for various autonomic disorders in clinical practice. It has been theorized that different auricular areas have distinct influence on autonomic functions. The present study aims to examine the effects of acupuncture stimulation at different auricular areas on cardiovascular and gastric responses. In male Sprague-Dawley rats anesthetized with pentobarbital sodium, five auricular areas, which were located at the apex of the helix (A1), the middle of the helix (A2), the tail of the helix (A3), the inferior concha (A4) and the middle of the antihelix (A5), had been selected for stimulation with manual acupuncture (MA) and different parameters of electroacupuncture (EA). A mild depressor response (6%–12% decrease from baseline) was evoked from A1, A3 and A4 by MA and from all five areas by EA (100 Hz–1 mA). The biggest depressor response (†18.4 ± 3.1 mmHg, a12345, 13421) was observed with EA (100 Hz–1 mA) at A3.
A small bradycardia was evoked by MA from A4 and by EA at A3, A4 and A5. Increase in intragastric pressure (8–14 mmH2O) was evoked by MA from A1, A3 and A4 and by EA at A2. These results show that similar patterns of cardiovascular and gastric responses could be evoked by stimulation of different areas of the auricle. The present results do not support the theory of a highly specific functional map in the ear. Rather, there is a similar pattern of autonomic changes in response to auricular acupuncture, with variable intensity depending on the area of stimulation.

Keywords
Acupuncture; Blood pressure; Heart rate; Gastric motility; Vagus nerve; Ear map
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