

Study on duodenal electrical activity and duodenal motility in experimental spleen deficiency rats

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Abstract

AIM: In order to study the mechanism of spleen deficiency (SD), we observed the changes of electrical activity and motility of duodenum.

METHODS: Wistar rats (120-170 g) were divided into 4 groups: control group, spleen deficiency group, spontaneous recovered group, Sijunzi tang treated group. After establishment of animal model, the duodenoelectric activity and duodenal motility were detected.

RESULTS: (1) The rats have migrating myoelectric complex and migrating motor complex (MMC) in duodenum. (2) In SD rats, the frequency of slow waves (3.175 ± 0.228 c/min) was significantly

lower than that of control rats (3.750 ± 0.228 c/min, $P < 0.001$); The amplitude of slow waves (0.795 ± 0.153 mV) was not significantly lower than that of the control rats (1.075 ± 0.595 mV, $P < 0.05$); And the activity of rats waves was obviously increased, and the duodenal motility was increased, the duration of MMC (9.876 ± 1.598 min) was obviously shorter than that of control group (12.720 ± 1.788 min, $P < 0.001$) and the amplitude of motility (0.980 ± 0.333 mV) was significantly higher than that of control group (0.370 ± 0.055 , $P < 0.001$). After treatment with modified Sijunzi tang, the duodenoelectric activity and duodenal motility were recovered to the levels of control. But in spontaneous treatment group, all activities were not recovered.

CONCLUSION: The increase in electrical activity of duodenum caused the strengthening of duodenal motility and later caused the weakening of absorption of duodenal motility and later caused the weakening of absorption of duodenum. This may be the mechanism of dyspepsia and emaciation in SD rats.

Key words: Duodenoelectric activity; Duodenal motility; Experimental spleen deficiency rats

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