

Regulation of small intestine motility disorder by Banxiaxixin decoction after irradiation and its mechanism

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Abstract

AIM: Patients who have radiation-damage and take radiotherapy often have gastrointestinal symptom, it has relation to disorders of small intestine motility. The study of Chinese traditional medicine shows that many Chinese traditional formulae can improve motility of gastrointestinal tract, they also have an effective treatment for radiation-damage. Finding effective Chinese traditional formulae is very important for treatments for radiation-dam age. Our purpose was to study the regulation of small intestine motility disorder by Banxiaxixin decoction after irradiation and its mechanism.

METHODS: Our experiments studied the regulation of small intestine motility disorder after irradiation by recording and analyzing the migrating myoelectric complex (MMC) of Wistar rats, and studied

the mechanism of its effect with extracorporeal experiment.

RESULTS: Most of the rats' intestinal MMC disappeared from 1 h to 7 d after irradiation, and had diarrhea on the third day (the rate of diarrhea was 90%). After oral application of Banxiaxixin decoction in most rats, the intestinal MMC appeared after irradiation and the duration of phases was no different from the normal MMC. The fast wave's amplitude of MMC changed after irradiation in control group, but after administration the amplitude tended to be normal. The rate of diarrhea was reduced after administration Banxiaxixin decoction (45%, $P < 0.01$).

CONCLUSION: Banxiaxixin decoction can improve the myoelectric activity of small intestine after irradiation, can restore the normal MMC, regulate the disorder of small intestine motility. It has a direct inhibition effect on the smooth muscle contraction of small intestine and antagonistic effects on M-receptor.

Key words: Migrating myoelectric complex; Diarrhea; Irradiation; Banxiaxixin decoction

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