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The effect of *Taraxacum officinale* on gastric emptying and smooth muscle motility in Rodents.

[Jin YR](#), [Jin J](#), [Piao XX](#), [Jin NG](#).

Department of Gastroenterology and Hepatology, The Affiliated Hospital of Yanbian University College of Medicine, Yanji, Jilin Province, China. yongrijin@yahoo.com

Abstract

BACKGROUND: *Taraxacum officinale* (TO) is a traditional herbal medicine that has been widely used for abdominal illnesses. However, the efficacy and the mechanism of TO on gastric emptying (GE) and smooth muscle motility are unknown.

METHODS: Ethyl acetate fraction (EA), n-butanol fraction (BF), and aqueous fraction (AF) were prepared in succession from 70% ethanol extract (EE) of TO using solvent polarity chromatography. Phenol red meal was adopted to estimate GE in mice. A polygraph was used to measure the smooth muscle motility in rats.

KEY RESULTS: The percentage of GE was $48.8 \pm 6.1\%$ (vehicle control), $75.3 \pm 6.5\%$ (cisapride positive control), $68.0 \pm 6.7\%$ (EE), $53.3 \pm 6.0\%$ (EA), $54.1 \pm 6.3\%$ (AF), and $86.0 \pm 6.5\%$ (BF). Thus, BF was determined to be most effective in accelerating GE. This stimulatory effect of BF on GE was also supported by the observation that BF increased spontaneous contraction of gastric fundus and antrum and decreased the spontaneous motility of pyloric sphincter in vitro. Atropine blocked the stimulatory effect of BF on GE, whereas phentolamine and propranolol had no effect.

CONCLUSIONS & INFERENCES: BF seems to be a promising prokinetic agent. BF-induced increase in the contraction of fundus and antrum contributes to an increase in the intra-gastric pressure. BF-induced decrease in the motility of pyloric sphincter contributes to a decrease in the resistance of food from the stomach to the small intestine. The acceleration of GE by BF is likely to be exerted through cholinergic stimulation.

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