



## Clinical evaluation of fasting plasma motilin levels in patients with gastric esophageal diseases

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Author contributions: All authors contributed equally to the work.

Original title: *China National Journal of New Gastroenterology* (1995-1997) renamed *World Journal of Gastroenterology* (1998-).

Received: December 11, 1995

Revised: January 21, 1996

Accepted: July 19, 1996

Published online: September 15, 1996

### Abstract

**AIM:** It is the primary physiological function of motilin (MTL) to regulate gastrointestinal movement of interdigestive period, but the relationship between MTL and digestive diseases is unknown. The aim of this study was to survey fasting plasma MTL levels in patients with digestive diseases and make clinical evaluation.

**METHODS:** (1) Patients: chronic superficial gastritis 44, duodenal ulcer 55, gastric ulcer 19, gastric carcinoma 24, esophageal carcinoma 18, bile reflux gastritis 12. The control group is 46 healthy volunteers. (2) Measurement of plasma MTL levels: fasting blood is collected. MTL levels were measured by radioimmunoassay. (3) Examination of *Helicobacter pylori* infection: biopsies are taken from the antrum for a CLO test and Starry silver stain to inspect *Hp* infection. (4) Analysis of data: results are expressed by means  $\pm$  SD. The significance of the differences is verified by unpaired *t* test.

**RESULTS:** (1) Fasting plasma MTL levels: the level of each disease group was  $340 \pm 128.4$ ,  $659.6 \pm 267.3$ ,  $619.7 \pm 274.5$ ,  $859.0 \pm 233.8$ ,  $923.5 \pm 286.7$  and  $575.8 \pm 147.6$  pg/mL, respectively.

Comparing with the control ( $333.8 \pm 75.3$  pg/mL), differences were significant ( $P < 0.001$ ) except CSG group. The levels in groups of cancer were higher significant than those in non cancer groups were 52%, 84%, 68%, 58%, and 44%, respectively. The MTL levels of patients with positive and negative *Hp* had no significant different in each group. (2) Distribution in 87% cancer patients plasma MTL levels obviously higher than the control, but in CSG group, 84% of them are normal.

**CONCLUSIONS:** (1) Because most CSG patients MTL levels were normal, we have speculated that CSG itself hardly results in disturbance of gastrointestinal motion. (2) Enhancement of the MTL levels in DU patients might be related to the high outputs of gastric acid. The disorder of gastrointestinal movement with high plasma MTL level might be one of the pathogenic mechanisms of DU. High levels in patients with GU are thought to be originated from the delay of gastric emptying. (3) It is the reason why the levels in patients with Gca and Eca have risen significantly that the tumor tissues could create and secrete MTL. So dynamic inspection of MTL levels in those patients should be an effective criterion of treatment. (4) Over 50% of patients with bile reflux gastritis, the MTL levels were higher than normal. This increases the pathologic duodenal gastric reflux because of disturbed gastrointestinal motion. (5) *Hp* infection does not affect the generation and release of MTL, so we have speculated that *Hp* infection does not influence gastrointestinal movement.

**Key words:** Motilin; *Helicobacter pylori*; Gastric emptying

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Xie GJ, Wu QM, Yu KS. Clinical evaluation of fasting plasma motilin levels in patients with gastric esophageal diseases. *World J Gastroenterol* 1996; 2(Suppl1): 206 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v2/iSuppl1/206.htm> DOI: <http://dx.doi.org/10.3748/wjg.v2.iSuppl1.206>

E- Editor: Liu WX



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