

Original articles

Effects of cisapride on human gallbladder

An ultrasonographic study

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SUMMARY

Background: Cisapride promotes gastric emptying and intestinal motility, by releasing acetylcholine from the intramural metasynaptic nerve endings. There are a few reports on the effect of cisapride on gallbladder motility. The aim of the study was to investigate any possible effect of cisapride on gallbladder emptying in healthy controls and patients with cholelithiasis. **Material:** 20 healthy subjects and 16 patients with cholelithiasis participated in the study. **Method:** Half from each group had i.m. injection of normal saline as placebo and the remaining half had i.m. injection of 5 mg of cisapride, in a random, blind order. Gallbladder contraction was assessed by ultrasonographic calculation of gallbladder volume at several time points after the injection. **Results:** Cisapride injection significantly reduced gallbladder volume at 30 min ($p < 0.01$) and 60 min ($P < 0.02$) after the injection in healthy subjects, but did not induce gallbladder contraction in patients with gallstones. **Conclusion:** Cisapride affects gallbladder motility in healthy subjects, but the drug seems ineffective in patients with gallstones, possibly because of a neuromuscular damage of the gallbladder wall.

Key words: Gallbladder motility, gallbladder emptying, cisapride.

INTRODUCTION

Cisapride is one of the very few clinically useful prokinetic agents. The drug increases the propulsive motility of the whole gastrointestinal tract.¹ It does so

by releasing acetylcholine from the intrinsic cholinergic neurons in the gastrointestinal wall, and by rendering smooth muscle cells more sensitive to acetylcholine.^{2,3}

Cholinergic innervation of the gallbladder musculature is rich, while intrinsic neurons of the gallbladder wall release a variety of additional transmitters, the nature of which is not fully defined.⁴ Reports on the effect of cisapride on gallbladder are limited. Intravenously given cisapride induces contraction of the gallbladder in fasting animals⁵ and healthy humans.⁶ In addition, long-term therapy with orally given cisapride enhances the delayed postprandial gallbladder emptying in patients with symptoms of functional dyspepsia.⁷

The aim of the study was to add further information to the issue, by investigating the possible effect of cisapride on gallbladder contraction in patients with cholelithiasis.

MATERIAL AND METHOD

Thirty six subjects were involved in the present study, that was carried out in the Surgical Department of the Clinical Hospital Center "Kragujevac" at Kragujevac, Serbia, FR Yugoslavia. Twenty of these were healthy volunteers. The remaining 16 were patients suffering from chronic calculus cholecystitis, documented with ultrasonography. Healthy subjects and patients were equally subdivided into two subgroups each. Ten healthy subjects (2 men, 8 women; mean age: 46.5 ± 6.2 years) had an i.m. injection of normal saline and served as controls. The remaining 10 healthy subjects (3 men, 7 women;

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