Effect of lintitript, a new CCK-A receptor antagonist, on gastric emptying of a solid-liquid meal in humans

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The role of cholecystokinin (CCK) in the regulation of gastric emptying of physiological meals containing solids and liquids in humans remains controversial. We studied the role of endogenous CCK in the emptying of a solid/liquid meal administering the new, highly specific and potent CCK-A receptor antagonist lintitript. Gastric emptying was assessed in nine healthy male volunteers using a randomized, double blind, two-period crossover design with oral lintitript (15 mg 1 h prior to meal intake) or placebo on two different days. After ingestion of a pancake (570 kcal) labelled with 500 microCi of 99mTc-sulfur colloid and 500 ml 10% dextrose containing 80 microCi. 111In-DTPA, subjects were studied in a sitting position, using a dual-headed gamma camera. Plasma CCK and pancreatic polypeptide (PP) were measured by a specific RIA. Lintitript distinctly accelerated gastric emptying of solids, while gastric emptying of liquids was not significantly altered. The lag period was shortened by 20% (P<0.05), AUC and half emptying time of solid emptying were lowered by 12% and 13%, respectively (P<0.03). Lintitript markedly increased postprandial plasma CCK release (P<0.001) while distinctly reducing postprandial PP levels (P<0.01) as compared to placebo. These data provide further evidence for a significant role of CCK in the regulation of gastric emptying of solids. The study demonstrates for the first time the marked gastrokinetic properties of the new CCK-A receptor antagonist lintitript in humans.