SHORT COMMUNICATION

Effects of Biliary and Pancreatic Juice Diversion on Gastrointestinal Motility

Alessya Repicci*

Gastroenterology and Digestive Endoscopy Unit, Forlì-Cesena Hospitals, AUSL Romagna, Forlì-Cesena, Italy

INTRODUCTION

Diversion of pancreatic juice from the duodenum increases both pancreatic flow and protein output in rats. When pancreatic juice was returned to the duodenum, the rise in pancreatic exocrine secretion was significantly reduced. Green and his colleagues hypothesized that endogenous cholecystokinin (CCK) had a role in the exocrine pancreas' negative feedback control. Our study in sedated rats and others in awake animals recently corroborated this. After diversion of pancreatic juice from the duodenum or duodenal administration of pure trypsin inhibitors, plasma concentrations of CCK increased considerably, as assessed by both radioimmunoassay and bioassay using rat pancreatic acini. Immunoneutralization of circulating CCK using rabbit anti-CCK serum or CCK receptor antagonists fully prevented the rise in pancreatic output [1].

Because the increase in protein output caused by pancreatic juice diversion from the duodenum has been accompanied by an increase in pancreatic juice flow (IS), secretin release could be another hormonal mechanism involved in the negative feedback regulation of the exocrine pancreas, in addition to CCK. Secretin stimulates the secretion of water and bicarbonate from the exocrine pancreas. The function of the two hormones produced from the upper small intestine on the exocrine pancreas to emit a higher volume of pancreatic juice and bicarbonate has long been known. In this study, we looked at the function of endogenous secretin in the process of enhanced pancreatic exocrine secretion in fasting rats that had their pancreatic juice diverted.

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Correspondence Alessya Repicci
Gastroenterology and Digestive Endoscopy Unit
Forlì-Cesena Hospitals
AUSL Romagna
Forlì-Cesena, Italy
E-mail repicci.a_gastro@gmail.com

EXPERIMENTS WITH PANCREATIC JUICE DIVERSION

A control study was conducted. Blood was taken from one group of 10 rats immediately after pancreatic duct cannulation (0 time); another group of 10 rats underwent the identical procedure but without pancreatic duct cannulation (sham operation). Four hours after the surgical surgery, 5-7 cc of blood was taken from each rat in the latter group. Plasma secretin concentration following pancreatic juice diversion. Pancreatic juice was collected by cannula from 60 rats to assess volume and bicarbonate content. The rats were separated into six subgroups, each with ten rats, and blood samples were taken at 0.5, 1, 1.5, 2, 3, and 4 hours after pancreatic juice was diverted to evaluate plasma secretin concentration [2].

EXPERIMENTS WITH INTRADUODENAL INFUSION

Fifty rats were used in the experiment. Each rat was given a test solution to drink for four hours. As a control, the first 10 rats were given 0.15 M NaCl at a rate of 10, 11 and 10 min. The second group of ten rats was given 1.6 mg/10 min of bovine trypsin (Calbiochem). At a concentration of 160 mgiml, trypsin was dissolved in 0.05 M NaHCO. The third group of ten rats received pure pancreatic juice, which had been obtained from donor rats whose pancreatic secretion had been induced by CCK-8 (0.06 pg/kg h) and secretin, at a rate of 10 & 10 min (0.06 Cui/kg h). Both pancreatic juice and bovine trypsin solution were kept at -20°C before use. Twenty rats were used in the fourth round of trials. Because pancreatic juice was diverted from the duodenum in ten rats (recipients), they were given fresh bile-pancreatic juice directly from ten donor rats, all of whom had identical surgical procedures. Donor rat pancreatic cannulas (PE-10) were placed into the second sections of the recipient rat's duodena. Bile was directed instead of traversing the duodenum in the recipient group of ten rats [3].

The flow of food from the mouth via the pharynx (throat), oesophagus, stomach, small and large intestines, and out of the body is referred to as gastrointestinal (GI) motility. The digestive system is in charge of digestion. Your body begins this difficult process the instant you look

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at food. Our commitment to GI motility research ensures that our patients have access to the latest cutting-edge diagnostic technology and cutting-edge clinical treatments for these illnesses [4].

Heartburn, trouble swallowing, severe weight loss, and, in certain situations, an elevated risk of oesophageal cancer are all symptoms of esophageal problems. If you have an oesophageal issue, UC San Diego Health will provide you with the most thorough care. We are one of Southern California's largest referral facilities for oesophageal swallowing and reflux issues [5].

For Gastroesophageal Reflux Disease (GERD), achalasia, Barrett's oesophagus, oesophageal motility problems, eosinophilic esophagitis, and laryngopharyngeal reflux, we offer the most up-to-date integrated and comprehensive methods [5].

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