Peptide YY and electrolyte homeostasis

EDITOR,—We wish to comment on the article by Nightingale and coworkers on the possible importance of peptide YY as the mediator of the colonic brake to gastric emptying (Gut 1996; 39: 267–72). Their studies suggest that the lower concentrations of peptide YY seen in patients without a colon are associated with an increased rate of gastric emptying. This may well contribute to the increased jejuno-stomy output seen in these patients. We have previously shown in humans that peptide YY in volunteers with jejunostomy (infused at physiological postprandial values) causes significant reduction in water and electrolyte secretion and slows small intestinal transit.¹

The high output of jejuno-stomy fluid post-prandially is therefore likely to be due to a combination of increased gastric emptying, decreased small intestinal fluid absorption, and increased small bowel motility. The development of orally active peptide YY agonists and antagonists will provide further insight into the physiological role of this peptide and could provide a novel approach to the water and electrolyte disturbances associated with high ileostomy outputs. Physiological concentrations of peptide YY do, however, cause significant increase in sodium excretion by the kidney and the relative benefits of electrolyte conservation by the intestine might be counterbalanced by the increased electrolyte lost by the kidney.²


Reply

EDITOR,—We are grateful to Professor R J Playford and Dr C E MacDonald for drawing our attention to this research. It supports the view that peptide YY is important in the short bowel syndrome. While the main reason for a high output from a jejunostomy is the loss of the normal daily secretions produced in response to food, low plasma concentrations of peptide YY may exacerbate the situation by increasing the rate of liquid gastric emptying and small bowel transit,¹ and may increase water and electrolyte secretion. High plasma concentrations of peptide YY occur in patients with a short bowel and a retained colon, thus it is beneficial to preserve some colon when a major bowel resection is performed.

J M D NIGHTINGALE
M A KAMM
J E LENNARD-JONES
St Mark's Hospital, London


Abdominal imaging

A course on abdominal imaging will be held at Jackson Hole, Wyoming, Grand Teton National Park, USA, on 30 June–4 July 1997. Further information from: Janice Ford Benner, University of Pennsylvania Medical Center, 3400 Spruce Street, 1 Silverstein Building, Philadelphia, PA 19104, USA. Tel: 215 662 6904; Fax: 215 349 5925.