Kimberly Ford, MD MBBS
Dr. Ford joined the Penn Division of Gastroenterology and the hepatology/liver transplant team in July 2008. She completed both her medical school and internal medicine residency at New York Presbyterian Hospital (Columbia University) and a gastroenterology/hepatology fellowship at the University of Pennsylvania. Dr. Ford’s research interests include the epidemiology of viral hepatitis and outcome assessments in acute liver failure. She specializes in the spectrum of acute and chronic liver diseases.

Karen Krook, MD
Dr. Krook joined the Penn Division of Gastroenterology and the hepatology/liver transplant team in July 2008. She completed both her medical school and internal medicine residency at the University of Pennsylvania, and fellowships in gastroenterology and transplant hepatology at Johns Hopkins University Medical Center. Dr. Krook’s clinical and research interests include the evaluation and management of end-stage liver disease and live donor liver transplantation (LDLT). She will see all patients with acute and chronic liver diseases.

Maarouf Hobeit, MD
Dr. Hobeit joined the Penn Division of Gastroenterology and the hepatology/liver transplant team in March 2009. He completed a residency in internal medicine and a gastroenterology fellowship at Emory University Hospital and a fellowship in transplant hepatology at the Mayo Clinic in Rochester, MN. Dr. Hobeit’s clinical and research interests include liver cancer and the evaluation and management of end-stage liver disease. He will see all patients with acute and chronic liver diseases.

Anna Buchner, MD
Dr. Buchner completed her internal medicine residency at the University of Illinois and completed fellowships in hepatology and gastroenterology at the University of Miami and Mayo Clinic, Jacksonville, FL, respectively. Dr. Buchner will be joining the GI division in July 2008, and will see patients with general gastrointestinal disorders at our Penn Medicine at Radnor location.

Meenakshi Bewtra, MD MPH
Dr. Bewtra will join the Penn Division of Gastroenterology in July 2009 after completing a gastroenterology fellowship at the University of Pennsylvania, where she also completed her internal medicine residency. She is a graduate of Mt. Sinai Medical School and completed an MPH at Harvard Medical School. Dr. Bewtra will see patients at The Perelman Center for Advanced Medicine, adjacent to the Hospital of the University of Pennsylvania. She will specialize in patients with inflammatory bowel diseases, an area of her research interest.

Managing Diabetic Gastroparesis
Gastroparesis, or paralysis of the stomach, affects up to 20 percent of patients with type 1 diabetes and diabetics as a whole comprise up to 30 percent of all cases. A motility disorder characterized by markedly delayed gastric emptying in the absence of mechanical obstruction, gastroparesis is a hallmark of long-standing type 1 diabetes. Once established, the relationship between diabetes and gastroparesis is synergistic and destructive. Peripheral neuropathy, a result of end-organ damage from diabetes, is a known contributor to gastroparesis and its effects. Damage to the gastric vagus nerve induces erratic gastric motility, in turn contributing to unpredictable and idiosyncratic post-prandial glucose levels and poor sugar control.

Gastroparesis management, never easy to achieve, has been complicated recently by a lack of gastric prokinetic drugs in the United States, according to David Metz, MD, Co-director of the Motility/Physiology Program at Penn.

“On the wake of the voluntary removal of cisapride and regadenoson from the market and increasing apprehensions about metoclopramide, an enzyme inducer, we need a new drug in gastroenterology,” Dr. Metz says.

The prospect that this need will soon be addressed has been diminished by the recent failure of two investigational therapies, pyloric boulus and toxin type A injection and gastric muscle electromodulation, to induce clinically significant motility in placebo-controlled clinical trials.

Despite the absence of once-promising treatments, Dr Metz emphasizes that many patients with diabetic gastroparesis can see substantial improvement in their symptoms by using available second-line drugs and dietary regulations.

“The treatment of diabetic gastroparesis at Penn involves a coordinated effort between the Division of Gastroenterology and specialists at the Penn Rodebaugh Diabetes Center, the Nutrition Support Service and the Division of Nuclear Medicine,” says Dr Metz. “This has several advantages, not the least of which is that patients benefit from a comprehensive array of services complemented by research.”

Because impaired motility can be caused by mechanical obstruction, an endoscopic or radiologic examination is a necessary first step for patients with the symptoms of gastroparesis. When obstruction is excluded as a cause of delayed gastric emptying, patients receive a functional assessment of gastric motility via a radio-labeled gastric emptying scan in the Division of Nuclear Medicine at Penn.

Gastroparesis is now among a handful of non-malignant gastric conditions lacking an effective pharmacologic agent for first-line treatment.

Continued on page 2
Maintenance is crucial as both of these conditions independently worsen gastric emptying. To stabilize blood glucose levels and enhance nutrition in diabetic patients, Metz encourages the consumption of multiple, small, low-fat meals or liquid meals that can enter the stomach more efficiently, flow of at least one meal per hour.

Therapeutic Options

**Nutritional Support**

If insufficient duration...

Consider total parenteral nutrition...

If insufficient...

Total parenteral nutrition...

If insufficient...

If well tolerated...

If poorly tolerated...

Consider jejunostomy with parenteral feeding...

Consider subtotal gastrectomy...

Consider gastric electrical stimulators...

**Therapeutic Options**

In our experience, botulinum toxin type A injection of the pylorus is not an effective intervention.

**Botulinum Toxin Injections of pylorus not found to be effective in clinical trials.**

Diet is an important element of treatment for all patients with gastroparesis. To stabilize blood glucose levels and enhance nutrition in diabetic patients, Metz encourages the consumption of multiple, small, low-fat meals or liquid meals that can enter the stomach more efficiently, flow of at least one meal per hour.

Therapeutic Options

**Nutritional Support**

If insufficient duration...

Consider total parenteral nutrition...

If insufficient...

Total parenteral nutrition...

If insufficient...

If well tolerated...

If poorly tolerated...

Consider jejunostomy with parenteral feeding...

Consider subtotal gastrectomy...

Consider gastric electrical stimulators...

**Therapeutic Options**

In our experience, botulinum toxin type A injection of the pylorus is not an effective intervention.