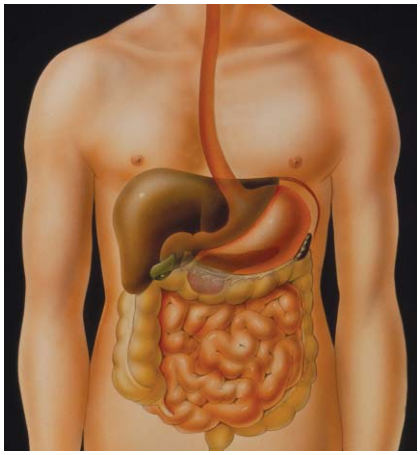
Then and Now

RICHARD H. DAVIS, JR, PA-C

Gastroenterology: 1987 and 2007



PEPTIC ULCER DISEASE AND GERD

I had practiced as a PA in academic gastroenterology for 5 years when the *Journal of the American Academy of Physician Assistants* (*JAAPA*) debuted 20 years ago. I had recently started my second postgraduate position as the first PA in the Department of Medicine at the University of Virginia. Our GI division was involved in several clinical trials at the time.

In 1987, the treatment of peptic ulcer disease (PUD) was limited to the use of H2-receptor antagonists. Although these agents represented a marked improvement from antacids (taken 4 to 6 times per day), much was still unknown about the etiology of ulcer disease–and especially that of recurrent peptic ulcers. NSAIDS such as ibuprofen had been available by prescription since the 1970s but had become OTC medications by the 1980s. Clinical trials were just beginning to sound the alarm, especially in the elderly, that patients with drug-induced gastric ulcers were often asymptomatic until a significant and often deadly bleeding episode had occurred.

In 1986, a new research fellow from Australia, Dr. Barry Marshall, joined our faculty. He had recently published an intriguing study in the *Lancet* describing the association between PUD and gastric infection with an organism then called *Campylobacter pylori*. He and a colleague actually proved Koch's postulates by personally ingesting the bacteria, inducing ulcers, and then showing that the ulcers healed when the bacteria were eradicated.[1] Many of us were skeptical because *C pylori* infection could be found in many people who did not develop PUD. Who would have guessed that the affable young investigator (with whom I shared an occasional grain beverage in Charlottesville) would receive the Nobel Prize in Medicine in 2005 for this work?

The most common causes of PUD are now known to be NSAID use and *Helicobacter pylori* infection. Eradication of *H pylori* with a combination of antibiotics and a proton pump inhibitor (PPI) nearly always prevents recurrent infection. The advent of PPIs in the early 1990s for the management of PUD and gastroesophageal reflux disease (GERD) has markedly decreased the need for surgery. PPIs are now used as prophylaxis in patients taking NSAIDs and in the treatment regimens for *H pylori* infection, acidic hypersecretory states such as Zollinger-Ellison syndrome, and GERD.[2]

THERAPEUTIC ENDOSCOPY

The field of therapeutic endoscopy has also markedly changed over the past 20 years. In the late 1980s, I worked with Dr. Worth Boyce at the University of South Florida in developing what was only the second center for swallowing disorders in the country. He was one of a handful of US investigators who pioneered the early field of endoscopic ultrasonography, now a routine procedure to stage tumors within or adjacent to the GI tract and pancreas. He is also known for developing esophageal stents for use in patients who have a malignant stricture or tracheoesophageal fistula. His first stents were custom-made for each patient, but several stents are now commercially available to improve the quality of life for patients with malignant disease.

In the late 1980s, endoscopic retrograde cholangiopancreatography (ERCP) was largely a diagnostic procedure for disorders of the bile and pancreatic ducts. Now endoscopists are able to use ERCP to crush and remove common bile duct stones, place stents across malignant and benign strictures, perform biopsies, and even visualize the smaller bile ducts with a "mother-daughter" scope within the scope.

Occult bleeding from the GI tract, usually the small intestine, could not be visualized in the 1980s and 1990s.

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To commemorate *JAAPA*'s 20th anniversary year, we have published a series of artices that highlight the changes that have occurred in the practice of medicine and surgery between 1987 and 2007. This is the last of those articles. Some PAs remain in the same field for decades, developing expertise that enables them to track the impact that innovation and societal change have had on the day-to-day delivery of care. We invited contributions from such PAs whose careers have spanned the past 20 years, asking them to consider how time has (and has not) transformed our practices.

– Charles DiMaggio, PhD, MPH, PA-C; *JAAPA* Editorial Board

Patients who required repeated blood transfusions were often taken to the operating room for intraoperative endoscopy with "telescoping" of the entire small bowel over an endoscope to localize a bleeding site. Now, however, capsule endoscopy has become readily available to visualize the small intestine and potential bleeding sites. More recently, the double-balloon enteroscopy technique allows the endoscopist to view the entire ileum for sources of bleeding, inflammation, or tumor. This not only permits a diagnostic procedure for those patients but also offers the ability to biopsy a lesion or treat a bleeding vessel.[3]

HEPATITIS

In 1984, another young investigator joined our GI division at the University of Florida. Dr. Gary Davis had just completed a research fellowship at the National Institutes of Health on the treatment of chronic non-A, non-B viral hepatitis. At the time, there were no treatment options for this infection, which would later be called *hepatitis C*. When Dr. Davis's sentinel work was published in the *New England Journal of Medicine* in 1989,[4] the success rates seen with interferon monotherapy were only 10% to 15%. I had the opportunity to work with Dr Davis again in the 1990s, when I returned to the University of Florida. We saw the therapy for chronic hepatitis C evolve from clinical trials to the current FDA-approved combination treatment of weekly pegylated interferon injections and daily oral ribavirin, and the "cure" rates improved to 50% to 80% for some genotypes of the virus.

Through the collaborations of Dr. Davis and others with the Schering-Plough Corporation, the first year-long hepatology fellowship for PAs was born in the late 1990s. We now estimate that more than 500 PAs and more than 800 nurse practitioners are working in partnership with supervising gastroenterologists in the United States. Many of them are managing patients with chronic viral hepatitis. In the United States, chronic hepatitis C is the most frequent indication for liver transplantation and also the leading cause of hepatocellular carcinoma. Worldwide, hepatitis B is the most common viral hepatitis and a leading cause of hepatocellular carcinoma, especially in areas where vaccination is not widely available. It is often passed by vertical transmission from infected mother to infant.[5,6]

INFLAMMATORY BOWEL DISEASE

In the 1980s, patients with inflammatory bowel disease (IBD) had few treatment options. Flares of the disease were treated with steroids, and maintenance therapy was limited to sulfasalazine for colitis and immunomodulatory therapy with azathioprine or its metabolite 6-mercaptopurine for Crohn's disease or severe colitis. The use of antibiotics and surgical therapy were the mainstays for fistulizing Crohn's disease.

As *JAAPA* debuted in 1988, clinical trials of a new 5-ASA drug, mesalamine, were being completed. Mesalamine did not have the sulfa component of sulfasalazine and allowed higher dosing of the active ingredient for colitis. Ten years later, the first of the biologic therapies, infliximab, an anti-TNF inhibitor, was FDA-approved for rheumatoid arthritis and subsequently for Crohn's disease. This infusion therapy markedly improved the treatment of fistulizing Crohn's disease and produced higher rates of remission. Infliximab was initially used for brief courses of treatment, but later experience showed that patients taking chronic biologic therapies tended to do better, require less surgery, and be less likely to lose response to the drug.

Today, there is a spirited debate as to whether these costly medications should be used earlier in the chronic treatment of patients with IBD—a top-down versus a step-up approach. Another agent, adalimumab was recently approved for the treatment of Crohn's disease, and infliximab has also been approved for the treatment of ulcerative colitis.

These agents are not without their side effects and potential for infection,[7] but their availability—and the other advances discussed in this article—demonstrate that much has changed for the better in the field of gastroenterology over the past 20 years. Articles in *JAAPA* have reported on new therapies and technologies that have emerged and helped us to incorporate them into our busy practices. Happy anniversary to *JAAPA*, and here's to 20 more years of providing quality medical education to physician assistants! JAAPA

Rick Davis practices in the Division of Gastroenterology, Hepatology, and Nutrition, University of Florida, Gainesville. He has indicated no relationships to disclose relating to the content of this article.

DRUGS MENTIONED

6-mercaptopurine (Purinethol)
Adalimumab (Humira)
Azathioprine (Azasan, Imuran)
Ibuprofen
Infliximab (Remicade)
Mesalamine
Peginterferon alfa-2a (Pegasys)
Peginterferon alfa-2b (PEG-Intron)
Ribavirin (Copegus, Rebetol)
Sulfasalazine (Azulfidine)

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