Physiology of the Gastrointestinal Tract; 5th Edition  
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There is little doubt that the fifth edition of Physiology of the Gastrointestinal Tract is an impressive collection. At 82 chapters and over 2200 pages, this two volume set is not only physically substantial but is equally as remarkable in its expansive coverage of gastrointestinal physiology. The books are arranged into a total of six sections that include discussion of genetics and growth of the GI tract, host defense mechanisms, secretion, digestion and absorption, neurophysiology, and gastrointestinal pathophysiology. Each segment contains chapters written by leading experts in basic and clinical science. According to the editor, the material covered in these texts is intended for those interested in gastrointestinal research. These books are lucid and well-written and are indeed accessible to the intended target audience. Trainees will find these volumes especially useful as an introduction to the molecular biology and physiology of the GI tract, as will those experienced researchers and physician scientists who are seeking a timely collection of reviews in areas outside of their expertise.

This edition of Physiology of the Gastrointestinal Tract is notable for the comprehensive topic coverage within many of the book’s sections. For example, spanning over 20 chapters, the review of multiple aspects of neurophysiology is outstanding. Subjects range from the molecular biology and development of the enteric nervous system and the neurophysiology of enteric neurons to neuronal control of mucosal secretion and gastrointestinal motility. Similarly, the initial portion of volume two is dedicated to the physiology of secretion and includes a number of excellent chapters detailing mechanisms of gastric, intestinal, and pancreatic ion transport and fluid regulation. The illustrations and diagrams in both books are ample, informative and, for the most part, an important element supporting the accompanying text.

However, there are some minor weaknesses in these two volumes. Expanded in this edition is the section on pathophysiology. Reviewed there, for example, is the impact of stress on the enteric nervous system as well as chapters on intestinal inflammation and GI malignancy. While there are several excellent pathology-related chapters in this portion of the text, the range of topics regarding GI disease is understandably limited and readers should look elsewhere for a detailed, comprehensive look at gastrointestinal pathophysiology. There are also subjects of great interest and excitement in the GI research community that garner little space in these volumes. For example, our understanding of the central importance of commensal microflora to GI development, physiology, and disease has expanded rapidly in the last several years and yet there is but a single, generalized (albeit excellent) chapter dedicated to this vital area of GI research.

Overall, any deficiencies in the fifth edition of Physiology of the Gastrointestinal Tract are easily overlooked and this would be an excellent addition to the bookshelf of those interested in gastrointestinal medicine and research. This clear, detailed collection provides a challenging but rewarding read for students and fellows while also serving as an authoritative resource for seasoned clinicians and researchers.

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PRACTICAL GASTROENTEROLOGY  
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Biomarkers for Biliary Atresia

Biliary atresia (BA) is a common cause of liver transplantation in children and a palliative procedure, the hepaticoportoenterostomy (Kasai procedure), needs to be performed very early in an infant’s life to allow for a delay before liver transplantation is considered. It would be useful to have serum biomarkers to aid in the diagnosis of BA and to help facilitate an early Kasai procedure.

The authors of this study evaluated for the presence of microRNAs (miRNAs) that might be associated with the hepatobiliary injury associated with BA. Serum samples were obtained from a children’s liver disease network. RNA samples were isolated from both human sera (pediatric patients with BA or other forms of cholestasis) and from mouse liver tissue. A low-density array was used to obtain miRNA by reverse transcription and real-time quantitative polymerase chain reaction (PCR).

In total, 5 children with BA were compared to age and sex-matched controls consisting of children with other causes of cholestasis. All patients had similar total and conjugated bilirubin levels. The serum miRNA profile was noted to be different in these two patient groups, and real-time quantitative PCR demonstrated that miR-200b, miR-200a, and miR-429 (from the miR-200b/429 locus) were elevated significantly in the BA patient group. Subsequent receiver operating characteristic analysis showed that these 3 miRNAs had a good area-under-the-curve value with the miR-200b/429 cluster being significantly increased in the BA patients compared to non-BA patients. Additionally, RNA isolation from hepatobiliary tissue from 8-week old Balb/c mice showed that the miR-200b/429 cluster was likely occurring in cholangiocytes.

This study shows the potential of using specific miRNAs as serum biomarkers for diagnosing BA in children. If larger studies validate these findings, testing for the miR-200b/429 cluster may potentially lead to an even earlier diagnosis of BA.


Determining Cow’s Milk Protein Allergy Resolution

Cow’s milk protein allergy (CMPA) is a common IgE-mediated food allergy in children, especially in infants. The lack of standardized criteria for diagnosis of CMPA in infants makes it difficult to determine which children will have long-term medical issues associated with this allergy as most infants with CMPA seem to have resolution of this allergy. The authors of this study from Israel tried to determine which infants were at risk of long-term CMPA by using part of a population-based study of 13,234 infants. Infants were recruited at birth and followed for 4 to 6 years. Parents of this study group were asked to contact the study authors if any potential allergic reaction occurred while consuming cow’s milk within 14 to 30 days of starting cow’s milk containing formula. These parents (381 total) were interviewed by the study group, and patients were diagnosed with CMPA based on history and results of skin prick testing. Testing confirmed IgE-mediated CMPA in 66 infants, and 54 infants qualified for the study after demonstrating CMPA manifestations after an oral feeding challenge. This final group of infants was subsequently followed for 48 to 60 months.

Thirty-one infants (57.4%) had resolution of CMPA symptoms during the entire study period as noted by a negative oral feeding challenge. Age at first CMPA reaction (less than 30 days), larger wheal size (greater than 6mm) by initial skin prick testing, and CMPA symptoms in children with an oral food challenge of less than 10mL were at a significantly higher risk of CMPA compared to infants who had CMPA resolution.

This study highlights 2 important findings. First, as many clinicians have long expected, most infants with CMPA have symptom resolution over time. Second, specific findings may be able to predict which infants will have long-term issues with CMPA, and perhaps consultation with a pediatric allergist may be helpful in this clinical setting to determine which infants may be at long-term risk of disease.

PPI Therapy and Osteoporosis

PPI use has been identified as a risk factor for hip and vertebral fractures. To evaluate whether PPIs are associated with accelerated DMV loss that might increase fracture risk, a Canadian multicentre osteoporosis study that enrolled a population-based sample of Canadians who underwent DMV testing of the femoral neck, total hip, and lumbar spine at baseline and then again at 5 and 10 years. Participants also reported drug use and exposure to risk factors of osteoporosis and fracture. Multivariate linear regression was used to determine the independent association of proton pump inhibitor exposure and baseline BMD and on change in BMD at 5 and 10 years.

A total of 8,340 subjects were included in the baseline analysis, with 4,512 undergoing year 10 BMD testing, after adjusting for potential confounders. PPI use was associated with significantly lower BMD at the femoral neck and total hip. PPI use was not associated with a significant acceleration in covariate-adjusted BMD loss at any measurement site after 5 and 10 years of followup.

It was concluded that PPI users had lower BMD at baseline than PPI-nonusers, but PPI use over 10 years did not appear to be associated with accelerated BMD loss.


Evaluation of Acute Overt Obscure Gastrointestinal Bleeding

Both capsule endoscopy (CE) and angiography have been recommended as first investigation for patients with acute overt obscure gastrointestinal bleeding (OGI bleed). No studies have directly compared the two modalities and in order to compare the diagnostic long-term outcomes of patients with same, randomization to CE or angiogram were carried out in consecutive patients who presented with acute melena or hematochezia, but nondiagnostic upper and lower GI endoscopy. All patients were monitored for rebleeding and anemia for up to five years.

Primary endpoint was a diagnostic year of CE or angiography. Secondary endpoints included rebleeding, further transfusion, readmission for bleeding or anemia, and mortality.

Sixty patients with overt OGI bleed were randomized. The mean followup was 48.5 months. The diagnostic yield of immediate CE was significantly higher than angiography (53.3% versus 20%). The cumulative risk of rebleeding in the angiography and CE group was 33.3% and 16.7%, respectively. There is no significant difference in the long term outcomes between the two groups, including further transfusion, hospitalization for rebleeding, and mortality.

It was concluded that in patients with overt OGI bleed, immediate CE has higher diagnostic yield and comparable long term outcomes when compared with angiography.


Approach to Treatment of Idiopathic Recurrent Acute Pancreatitis

To evaluate the therapeutic effects of endoscopic sphincterotomy in patients with recurrent acute pancreatitis (RAP), and the prognostic significance of pancreatic sphincter dysfunction (SOD), a randomized trial of ERCP with SOM for patients with idiopathic RAP was carried out. Patients with pancreatic SOD (N=69), were assigned randomly to groups that received only biliary sphincterotomy (BES), or a combination of biliary and pancreatic sphincterotomy (DES); patients who underwent normal SOM (N=20), were assigned randomly to groups that received BES or a sham surgery. The primary outcome was incidence of RAP during the follow-up period (1 to 10 years). The incidence of chronic pancreatitis was determined and factors were analyzed associated with recurrence of acute pancreatitis.

Among the 69 patients with SOD, 48.5% who received BES and 47.2% who received DES had recurrent acute pancreatitis. In patients with normal SOM (N=20), 27.3% of those who received BES and 11.1% who received the sham surgery had recurrent (continued on page 52)
FROM THE LITERATURE

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acute pancreatitis. Overall, 16.9% of subjects developed chronic pancreatitis during a median followup period of 78 months. The odds of recurrent acute pancreatitis during followup evaluation were significantly greater among patients with SOD than those with normal SOM (HR 3.5), and remained so after adjusting for potential confounders (HR 4.3).

It was concluded that among patients with pancreatic SOD, DES and BES had similar effects in preventing recurrence of acute pancreatitis. Pancreatic SOD is an independent prognostic factor, identifying patients at higher risk for recurrent acute pancreatitis.

The benefits of biliary sphincterotomy in patients with RAP, irrespective of the results of pancreatic manometry, are unclear. SOD may be a secondary marker of more significant information related to previous AP and cannot be recommended as a curative treatment of unexplained RAP alone.


Additional Treatment for Short Bowel Syndrome With Intestinal Failure

Teduglutide, a glucagon-like peptide to analogue, might restore intestinal structure and functional integrity by promoting growth of the mucosa and reducing gastric emptying and secretion, increasing fluid and nutrient absorption in patients with short bowel syndrome with intestinal failure (SBS-IF).

A prospective study to determine whether the drug reduces parenteral support in these patients was performed as a 24-week study with patients given subcutaneous teduglutide (0.05 mg/kg/d – N=43), or placebo (N=43), once daily.

Parenteral support was reduced if 48-hour urine volumes exceed baseline values by 10% or greater. The primary efficacy endpoint was number of responders (patients with greater than 20% reduction in parenteral support volume).

There were significantly more responders in the medication group (27/43 – 63%), than the placebo group (13/43 – 30%). A mean reduction in parenteral support volume in the drug group was 4.4 liters per week (baseline 12.9 liters per week), compared with 2.3 liters per week (baseline 13 liters per week) in the placebo group.

A percentage of patients with a one day or more reduction and weekly need for parenteral support was greater in the medication group (21/39 – 54%), than in the placebo group (9/39 – 23%). Teduglutide increased plasma concentrations, citrulline as a biomarker of mucosal mass.

The distribution of treatment-emergent adverse effects that led to study discontinuation was similar between patients receiving medication (N=2) and placebo (N=3).

It was concluded that 24 weeks of teduglutide was generally well tolerated in patients with SBS-IF, and treatment with the medication reduced volumes and numbers of days of parenteral support for patients with SBS-IF.


Treatment of Intrahepatic Cholestasis of Pregnancy

A meta-analysis to evaluate the effects of ursodeoxycholic acid (UDCA) on pruritus, liver test results, and outcomes of babies born to women with intrahepatic cholestasis of pregnancy (ICP), was carried out with a systemic review of nine published, randomized, controlled trials of which three were double-blinded, that compared the effects of UDCA to other drugs, placebo, and controls in patients with ICP.

Data was analyzed from 454 patients and 207 received only UDCA. Seventy received only placebo, 42 received cholestyramine, 36 received dexamethasone for one week and then placebo for two weeks, 65 received S-adenosyl methionine and 44 received no specific treatment.

A standard questionnaire was sent to all corresponding authors and pooled analysis was carried out, comparing the effects of UDCA with those of all controls and UDCA with those of placebos.

Comparing UDCA with all controls, it was associated with total resolution of pruritus with an OR of 0.23, reduced pruritis (OR 0.27), normalized ALT (OR 0.23), decreased serum level of ALT (OR
0.24), reduced serum level bile acid (OR 0.37), fewer premature births (OR 0.44), reduced fetal distress (OR 0.46), less frequent respiratory distress syndrome (OR 0.30), and fewer neonates in the intensive care unit (OR 0.49). Even greater reductions were noted when compared with placebo.

It was concluded that based on meta-analysis, UDCA is effective in reducing pruritus and improving liver test results in patients with ICP; UDCA therapy might also benefit fetal outcomes.


Hip Fracture Risk and Chronic HCV
HCV infection has been associated with reduced bone mineral density. To determine whether persons with HCV infection alone are at increased risk for hip fracture, compared to uninfected individuals, and whether HIV coinfected persons compared to those with HCV alone and HIV alone, and those uninfected, a cohort study in 36,950 HCV/HIV coinfected, 276,901 HCV-monoinfected, 95,807 HIV monoinfected, and 3,110,904 uninfected persons within the US Medicaid populations of five states was carried out.

Incidence rates of hip fracture were lowest among uninfected persons (1.29 events/1,000 person/years), increased with HIV infection (1.95 events), or HCV infection (2.69 events/1,000 person/years), and highest among HCV/HIV coinfected individuals (3.06 events/1,000 person years).

It was concluded that among Medicaid enrollees, HCV/HIV coinfection was associated with increased rates of hip fracture, compared to HCV monoinfected, HIV monoinfected and HCV/HIV uninfected persons.

HCV monoinfected patients had an increased risk of hip fracture, compared to uninfected individuals.


Treatment of Hypersensitive Esophagus
A total of 252 patients with normal endoscopic findings and typical reflux symptoms (heartburn, chest pain, and regurgitation), despite proton pump inhibitor therapy twice daily, underwent 24 hour pH impedance sign monitoring. Distal esophageal acid exposure (percentage time pH less than 4), was measured and reflux episodes were classified into acid or non-acid. A positive symptom index (SI) was declared if at least half of the symptom events were preceded by reflux episodes. Patients with a normal distal esophageal acid exposure time, but with a positive SI were classified as having hypersensitive esophagus and were randomized to receive Citalopram 20 mg or placebo once daily for
Linaclotide For IBS With Constipation

A phase 3, double-blind, parallel group, placebo-controlled trial of randomized IBS-C patients to placebo on 290 mcg of oral linaclotide once daily for a 26-week period was carried out. The primary and secondary efficacy assessments were evaluated over the first 12 weeks of treatment. Primary endpoints included the FDA’s endpoint for IBS-C (responder) in patients who reported improvement of greater than 30% from baseline in average daily worst abdominal pain score and increase of greater than one complete spontaneous bowel movement (CSBM) from baseline, both in the same week for greater than six to twelve weeks and three other primary endpoints, based on improvements in abdominal pain and CSBMs for nine to twelve weeks. Adverse events (AEs) were monitored.

A total of 804 patients were evaluated with a mean age of 44 years with 90% female and 78% white. A total of 33.7% of treated patients were FDA endpoint responders versus 13.9% of placebo-treated patients. It was determined the number needed to treat equals 5.1. The pain responder criteria of the FDA endpoint was met by 48.9% of linaclotide-treated patients versus 34.5% of placebo-treated patients (number to treat equals 7), and the CSBM responder criteria was met by 47.6% of treated patients versus 22.6% of placebo patients (number to treat equals 4).

The remaining primary endpoints and all secondary endpoints, including abdominal pain, abdominal bloating and bowel symptoms (SBM and CSBM rates, Bristol stool form scale score and straining), were also statistically significantly improved with linaclotide versus placebo.

Statistically, significant differences from placebo were observed for a responder and continuous endpoints over 26 weeks of treatment. AE incidence was similar between treatment groups, except for diarrhea which caused discontinuation in 4.5% of linaclotide patients versus 0.2% of placebo patients.

It was concluded that linaclotide 290 mcg once daily significantly improved abdominal and bowel symptoms associated with IBS-C over 26 weeks of treatment.


Murray H. Cohen, D.O., “From the Literature” Editor, is on the Editorial Board of Practical Gastroenterology.
First Patient Enrolled in Boston Scientific Randomized Study of Removable WallFlex® Biliary RX Fully Covered Stent for Patients Suffering From Chronic Pancreatitis

Study to Compare Clinical Outcomes of Self-Expanding Metal Stents (SEMS) Versus Plastic Stents for the Treatment of Biliary Strictures Caused by Chronic Pancreatitis

NATICK, Mass., Dec. 4, 2012 /PRNewswire/ -- The first patient has been enrolled in a Boston Scientific Corporation (NYSE: BSX) study comparing the WallFlex® Biliary RX Fully Covered self-expanding metal stent (SEMS) to plastic stents for the treatment of benign bile duct strictures caused by chronic pancreatitis. This multi-center, prospective, randomized study will enroll 164 patients at leading hospitals in Australia, Austria, Belgium, Canada, France, Germany, Hong Kong, India, Italy and the Netherlands.

In a separate single-arm study, 187 patients were treated with the WallFlex Stent for multiple types of benign biliary strictures including, those caused by chronic pancreatitis. The stents implanted in that study were removed up to one year after being placed in the body. Five-year follow-up post stent removal is ongoing. Preliminary data were presented this summer at Digestive Disease Week 2012 by Professor Jacques Deviere of Erasme Hospital in Brussels. The data indicate that a SEMS can be removed safely any time up to one year post placement, and that short-term stricture resolution rates compare favorably with the results reported with plastic stents in chronic pancreatitis-related benign biliary strictures.

“Preliminary data show promising results for the treatment of chronic pancreatitis-related benign biliary strictures using SEMS, compared to literature on the use of plastic stenting,” said Professor Puspok of the Medical University of Vienna, an investigator in both studies who enrolled the first patient in the randomized study. “Multiple plastic stenting remains an established treatment choice for biliary strictures caused by chronic pancreatitis. However, this form of treatment requires multiple stent exchanges and the long-term success rate is low. Treatment with removable fully covered SEMS could overcome these limitations. A head-to-head comparison of both stenting treatment regimens is essential in order to collect robust data to guide physicians in the optimal treatment of their patients with chronic pancreatitis.”

SEMS, which have a significantly larger diameter than plastic biliary stents, have long been the standard of care for palliation of malignant biliary strictures. The studies above are evaluating the benefits of using a SEMS in benign biliary strictures, with an objective to demonstrate stricture resolution in fewer procedures.

“Boston Scientific continues to deliver industry-leading technologies that enhance patient quality of life,” said David Pierce president of the Endoscopy business at Boston Scientific. “We are hopeful that the results of this study will demonstrate clinical benefit and cost effectiveness of a single metal stent approach versus plastic stenting, which typically requires multiple procedures.”

The WallFlex Biliary RX Fully Covered Stent has a silicone polymer Permalume® Coating designed to reduce the potential for tumor/tissue ingrowth, and an integrated retrieval loop for removing or repositioning the stent in the event of incorrect placement during the initial procedure or for removal from benign strictures up to one year after placement. The stent is constructed of braided, platinum-cored Nitinol wire (Platinol™ Wire) and features three key components: radial force to help maintain duct patency and resist migration, flexibility to aid in conforming to tortuous anatomicies and full-length radiopacity to enhance stent visibility under fluoroscopy.

The complete line of WallFlex Stents - Fully Covered, Partially Covered and Uncovered - is available in the United States and has CE Mark approval for use in the palliative treatment of malignant biliary strictures. In addition, the WallFlex Biliary RX Fully Covered stent is CE marked for the treatment of benign biliary strictures. The WallFlex Stent is the most frequently implanted biliary metal stent worldwide.

The WallFlex Stent is not approved in the United States for use in the treatment of benign biliary strictures. The safety and effectiveness of the stent for use in the vascular system have not been established. For more information, visit Boston Scientific Endoscopy Resources on-line at: www.bostonscientific.com/endo-resources

About Boston Scientific

Boston Scientific is a worldwide developer, manufacturer and marketer of medical devices that are used in a broad range of interventional medical specialties. For more information, please visit: www.bostonscientific.com

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Seven-day viral kinetic data showed that when once-daily ALS-2200 (200 mg) was dosed in combination with ribavirin, there was a median 4.18 log10 reduction (range -3.6, -5.2) in HCV RNA in people with genotype 1 chronic hepatitis C who were new to treatment (n=8). Five patients achieved HCV RNA levels below the limit of quantification (< LOQ = < 25 IU/mL), and two of these five achieved HCV RNA levels below the limit of detection (Roche COBAS Taqman HCV test, Version 2) after seven days of dosing. Similar to the data from the monotherapy cohort, ALS-2200 in combination with ribavirin was well-tolerated, no patients discontinued due to adverse events and there were no serious adverse events.

“The early antiviral activity and tolerability of this nucleotide analogue are very promising as we seek to develop new interferon-free treatment regimens,” said Patrick Marcellin, M.D., Ph.D., Professor of Hepatology at the University of Paris and Head of the Viral Hepatitis Research Unit in Hôpital Beaujon, Clichy. “The data suggest VX-135 could be a core component of all-oral regimens for the treatment of hepatitis C.”

“In vitro viral kinetic studies of VX-135,” Poster presentation #1882

Preclinical characterization of ALS-2200, a potent nucleotide polymerase inhibitor for the treatment of chronic hepatitis C. Preclinical data on ALS-2200 was presented at AASLD that support the Phase 1 viral kinetic study and further clinical development plans. In preclinical studies, ALS-2200 was shown to be a potent, selective, specific, and pan-genotypic nucleotide analogue that inhibits the HCV NS5B polymerase. Specifically, there was no in vitro inhibition of non-HCV viruses, human DNA (β or γ) or RNA (II) polymerases, or mitochondrial protein synthesis. The studies also showed that ALS-2200 retains potency in vitro against a panel of HCV variants resistant to NS3/4A, NS5A and non-nucleoside NS5B inhibitors.

“Analysis of ALS-2200, a novel potent nucleotide analog, combination drug interactions in the hepatitis C virus (HCV) subgenomic replicon system.” Poster presentation #1887 November 13, 2012, 8:00 a.m. – 12:00 p.m. EST

Combination studies with ALS-2200 were performed in vitro to determine whether interactions with other drugs were additive, synergistic or antagonistic. Combination of ALS-2200 with either telaprevir or VX-222 demonstrated a synergistic effect, and combination with ribavirin resulted in an additive response. No significant cytotoxicity or antagonism were observed.
at any concentration of the combinations tested. Combinations of ALS-2200 and 18 other compounds were also tested, including simeprevir, which showed significant synergy with ALS-2200.

“We’re pleased with the strength of our collaboration with Vertex and how it may lead to advances in the treatment of hepatitis C,” said Lawrence M. Blatt, Ph.D., Founder, President and Chief Executive Officer of Alios BioPharma. “We’re looking forward to seeing the results of several studies evaluating various all-oral combinations including VX-135.”

**VX-135 Phase 2 Trials**

Vertex recently announced that it has entered into two non-exclusive agreements to conduct Phase 2 proof-of-concept studies of VX-135 in combination with simeprevir (TMC435), a protease inhibitor being jointly developed by Janssen R&D Ireland and Medivir AB, and with GSK2336805, an NS5A inhibitor in development by GlaxoSmithKline (GSK). The studies with GSK2336805 and simeprevir are expected to begin in early 2013, pending discussions with regulatory authorities. Screening is expected to begin in the coming weeks for a Phase 2 study of VX-135 and ribavirin. Vertex also plans to begin a study of VX-135 and telaprevir, the company’s approved protease inhibitor marketed as INCIVEK® (telaprevir) tablets for people with chronic genotype 1 hepatitis C, in early 2013, pending discussions with regulatory authorities. All of these Phase 2 studies will evaluate safety, tolerability and viral cure rates (SVR12; undetectable hepatitis C virus 12 weeks after the end of treatment) using 12-week combination regimens.

**About VX-135 (ALS-2200)**

VX-135 (ALS-2200) is a uridine nucleotide analogue pro-drug that appears to have a high barrier to drug resistance based on in vitro studies. It is designed to inhibit the replication of the hepatitis C virus by acting on the NS5B polymerase. In vitro studies of the compound showed antiviral activity across all genotypes, or forms, of the hepatitis C virus, including genotypes more prevalent outside of the United States.

Vertex gained worldwide rights to ALS-2200 through an exclusive worldwide licensing agreement signed with Alios BioPharma, Inc. in June 2011. The agreement also includes a research program that focuses on the discovery of additional nucleotide analogues that act on hepatitis C polymerase. Vertex has the option to select additional compounds for development emerging from the research program.

Please see full Prescribing Information for INCIVEK including the Medication Guide, available at: [www.INCIVEK.com](http://www.INCIVEK.com) For further information, contact: mediainfo@vrtx.com

**St. Joseph’s Healthcare System**

Paterson, NJ — Lap band surgery is one of the safest weight loss surgeries available, but in 2−14 percent of patients, the device can erode into the stomach and cause pain and requires surgical removal. Sohail N. Shaikh, MD, at St. Joseph’s Healthcare System, is the first physician in New Jersey to remove an eroded lap band using endoscopic technology, a nonsurgical intervention. To date, there has been only a handful such procedures done nationally.

A female patient from New Jersey had the lap band put in about six years ago. For the past year, she had been in pain and had difficulty eating. Her gastroenterologist confirmed the imbedded lap band with an endoscopy. Because of Dr. Shaikh’s expertise in endoscopic procedures, he was asked to intervene.

Dr. Shaikh is an interventional gastroenterologist with extensive knowledge in internal medicine, bariatric and developmental gastroenterology, and advanced endoscopy. As one of the leaders in his field, he is able to address the very serious and life-threatening conditions that may occur due to bariatric surgery or complications from cancers or ulcers in the abdomen.

“By using minimally invasive techniques, the patient can go home earlier, in little if any pain, and with less risk of complications,” says Dr. Shaikh. “In this case, using endoscopy and state-of-the-art techniques, we were able to remove the eroded lap band without major surgery, which would have meant days in the hospital and possibly weeks of recovery. The patient was home in less than 24 hours, ready to get back to her life - pain-free.”

For more information about the full range of advanced gastroenterology services, including unique minimally invasive techniques available at St. Joseph’s Healthcare System, please visit: [www.StJosephsHealth.org](http://www.StJosephsHealth.org) or call 877.757.SJHS (7547).

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MEETINGS CALENDAR

May 17–22, 2013 SGNA 40th Annual Course
Austin, Texas—Celebrating 40 years of Annual Course education, The Society of Gastroenterology Nurses and Associates brings together the best and brightest GI/endoscopy professionals to drive the future of our field. SGNA is the leading organization of nurses and associates dedicated to the safe and effective practice of gastroenterology and endoscopy nursing. SGNA advances the science and practice of gastroenterology and endoscopy nursing through education, research, advocacy and collaboration, and by promoting the professional development of its members in an atmosphere of mutual support. Our membership spans across the United States and 16 other countries with a full range of members from Registered Nurses, Licensed Practical/Vocational Nurses, Associates (assistants and technicians) andAdvance Practice Nurses. For more information visit: www.sgna.org

May 18–21, 2013 Digestive Disease Week
Orange County Convention Center, Orlando, FL. Digestive Disease Week® (DDW) is the largest and most prestigious meeting in the world for the GI professional. Every year DDW attracts approximately 15,000 physicians, researchers and academics from around the world. Choose from over 400 sessions, including clinical and research symposia, state-of-the-art lectures and research and topic fora, covering a wide array of topics and presented by a world-renowned faculty unsurpassed in their field. For more information visit: www.ddw.org

October 24–26, 2013 Annual Probiotic Symposium
Probiotics: Current Perspectives and Controversies
San Antonio, Texas—Embassy Suites San Antonio Riverwalk Hotel. Attend the 7th Annual Probiotic Symposium for a unique opportunity to learn about the current perspectives and controversies in probiotics research and use in clinical practice. CME Credit for Physicians and other Healthcare Professionals will be available. Save $100—Register before October 6, 2013 For more information visit: www.ProbioticSymposium.com 866-216-6127 info@ProbioticSymposium.com Hotel Reservations: 800-362-2779 Group rate code: 2013 Probiotic Symposium

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PRACTICAL GASTROENTEROLOGY CROSSWORD PUZZLE

by Myles Mellor

ACROSS

1  Disease often caused by alcoholism
6  Heartburn is one of its symptoms, abbr.
8  Signal
9  ____ membrane
10  Dosage amount, for short
11  ____ signaling pathway
16  Facing for a tooth
17  Enzyme that catalyzes the reversible transfer of acyl groups
21  Animal and vegetable fats
22  Ileal resection, abbr.
25  Part of the gastrointestinal tract, for short
26  Genus of filarial worms which cause elephantiasis

28  Family of small proteins that are covalently attached to and detached from other proteins or cells to modify their function
32  Decline
33  Thin coating
34  Scale note
35  Type of cell in the epithelium
37  Smell
38  Newport, state
39  Lesch-____ syndrome
40  Continent ileal ____
42  Condition in which swallowing is difficult
43  Point of connection anatomically
44  Narrow but deep invagination into a larger anatomical structure
45  Standards of comparison in studies

DOWN

1  Deeply unconscious
2  Type of exam
3  Time period
4  For that reason
5  Stem cell clonogen, for short
6  Hereditary blueprints
7  Frequency relative to time
12  Single
13  Intestinal pouch, ___a
14  Homologous recombination, for short
15  Brown shade
16  Tube or canal
18  Part of a cage
19  Canadian province, initials
20  It’s mostly nitrogen
23  Trials found this drug safe and effective in treating UC
24  Inflammation of the ovaries
26  Bimestrial
27  Dazzling light
29  Cambridge school, for short
30  With two phases in the life history
31  Two
34  Anterior part of the alimentary canal
35  Earlier suffix
36  Relating to a positively charged electrode
39  Paroxysm
43  Clash

(Answers on page 44)