GUIDELINES FOR AUTHORS

Practical Gastroenterology publishes articles for the primary care physician, and your article should therefore have a nuts-and-bolts slant. We urge you to keep the nonspecialist in mind as you write your article. We cannot stress strongly enough the importance of focusing your article on information that will be useful and instructive to the primary care physician. In this regard, it would be helpful for you to emphasize prevention and cost (of tests, drugs, surgery, hospital stay, procedures, techniques, etc.) whenever and wherever possible.

We offer the following list to help you conform to our mechanical requirements:

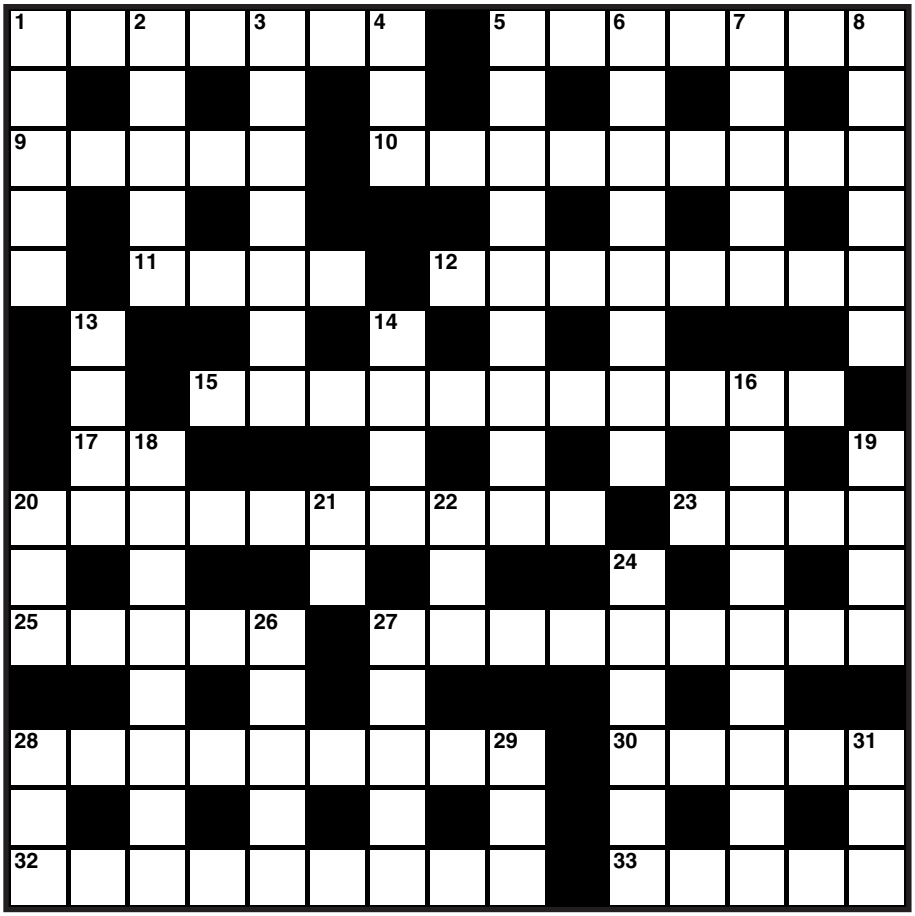
1. Please submit one copy of the manuscript, which should be typed on 8½ × 11″ paper, with 1″ margins, and double-spaced throughout, including references, tables, and figure legends. Ideally, the length of the manuscript should be 2000–2500 words (10–13 pages). Manuscripts should be submitted via e-mail to: PracticalGastro@aol.com
2. Manuscripts must be submitted in Microsoft Word or Corel WordPerfect only. Files should not contain automatic footnoting (END CODE) and they should be submitted as final format documents (without indications of markup).
3. Tables should not be submitted as Excel spreadsheets or in Power Point. Each table should have a title and an accompanying legend. If the table has been previously published, you should identify the source and provide all information that would be included in a standard reference list (see below), along with indication that permission to republish has been obtained. It is your responsibility to obtain permission.
4. Figures and illustrations (photographs, drawings, charts) help explain the text, add to the visual appeal of the published article, and are very welcome. Each table should have a title, and each figure should have an accompanying legend. If figures and illustrations have been previously published, you should identify the source and provide all information that would be included in a standard reference list (see below), along with indication that permission to republish has been obtained. It is your responsibility to obtain permission. All figures and illustrations must be supplied in JPEG format and must be identified as Figure 1, Figure 2, etc. When e-mailing figures and illustrations, do not embed them into a text document. Each JPEG should be sent as a separate document attached to the e-mail.
5. The title page should include the names, addresses, phone numbers, complete titles and affiliations of all authors.
6. A color head-shot photograph of each author should accompany the manuscript. These will be published with your article. These must be submitted as JPEG files.
7. An abstract of 125–150 words should also accompany your paper. This will be published at the beginning of your article. Please do not exceed the 150-word limit.
8. References should be used sparingly and cited in the body of the paper using consecutive superscript (raised) numbers. The references section should be numbered consecutively in the order in which the references are cited in the text. References should follow AMA style, and journal names should be abbreviated according to Index Medicus practice. Inclusive page ranges should be indicated. The following references illustrate AMA style:

    1. Jacobson IM, McHutchison JG, Dusheiko GM, et al. Telaprevir for previously untreated chronic hepatitis C virus infection. *N Engl J Med*. 2011;364:2405–2416.
    2. Bernatsky S, Clarke AE, Suissa S. Hematologic malignant neoplasms after drug exposure in rheumatoid arthritis. *Arch Intern Med.* 2008;168:378-81.

9. Articles will be copyrighted upon publication by Practical Gastroenterology Publishing, Inc. The manuscript must not have been published previously. Each article we publish is subject to review by members of our Editorial Board. Articles are also subject to final editing.

PRACTICAL GASTROENTEROLOGY CROSSWORD PUZZLE

by Myles Mellor



ACROSS

1. Complex carbohydrate used as a sweetening agent

5. Changed genetic form

9. Take place

10. Combined genetic material of the microorganisms in a particular environment

11. Of higher order or level

12. Fuse or cause to grow together

15. Gives medication

17. Islets __ Langerhans

20. Type of infectious diarrhea

23. Type of genetic material

25. Evacuate bowels or stomach

27. The P in HPS

28. Biological study of microscopic structure

30. He helped discover the helical structure of DNA

32. Microbial imbalances in the digestive tract

33. Inert gas

DOWN

1. Asexual reproductive body

2. Intestinal pouch

3. Magnetic field strength measurement

4. Shady tree

5. Relating to minute life forms

6. Arrange statistical results in a certain way

7. Equipment

8. Regulated consumption

13. Nutrient

14. Essential mineral

16. It's often used as part of cancer treatment

18. Development of excess tissue

19. Deviate

20. Liquid unit

21. Enclosed inside

22. Hosp. section

24. Bone at the end of the vertebral column

26. Intestinal bacteria

27. Either of two muscles of the abdomen and pelvis

28. Concealed

29. "Of course"

31. Relatives

(Answers on page 45)

Endoscopic Papillectomy to Measure Short-Term Safety and Efficacy of Papillectomy

To define patient and lesion characteristics associated with incomplete endoscopic resection, and measure adenoma recurrence rates during long-term followup, a retrospective cohort study was carried out at a tertiary-care, academic medical center, including all patients who underwent that procedure for ampullary lesions between July 1995 and June 2012.

A total of 182 patients were identified and 134 (73.6%) having complete resection. Short-term adverse events occurred in 34 (18.7%). Risk factors for incomplete resection were jaundiced at presentation (OR 0.21), occult adenocarcinoma (OR 0.06), and intraductal involvement (OR 0.29). The en bloc resection technique was strongly associated with a higher rate of complete resection (OR 4.05), among patients with ampullary adenoma who had complete resection (N = 107). Sixteen patients (15%) developed recurrence up to 65 months after resection.

It was concluded that jaundice at presentation, occult adenocarcinoma in the resected specimen, and intraductal involvement are associated with a lower rate of complete resection, whereas en bloc papillectomy increases the odds of complete endoscopic resection.

Despite complete resection, recurrence was observed up to 5 years after papillectomy, confirming the need for long-term surveillance.

Ridtidi, W., Tan, D., Schmidt, S., et al. "Endoscopic Papillectomy: Risk Factors for Incomplete Resection and Recurrence During Long-Term Followup. Gastrointestinal Endoscopy 2014; Vol. 79, pp. 289-296.

Interpreting Polyp Size

To assess error rates in polyp size determination with open forceps as a step of measurement after the forceps are aligned on the polyp, evaluation was carried out with prospective assessment of 49 gastroenterologists who received training on 10 photographs of polyps with a line forceps and then measured 10 additional test polyps from photographs.

One of the test photographs was excluded because of incorrect forceps alignment. This study was carried out at an academic medical center and the main outcome measurements included description of rates of accurate measurements, including refraction corrects within 50% and 25% margins of error.

A total of 37% of all measurements were correct to the exact millimeter; 34% were larger and 29% smaller, compared with the reference standard. A total of 47 of 49 doctors measured all nine polyps within 50% of the reference standard and 21 measured all 9 correctly within a 25% error margin.

It was concluded that open forceps polyp size determination is subject to error at the step of using the fully aligned forceps of the scale for measurement. A margin of error of 50% up or down is needed to prevent this step in size determination from causing errors in polyp matching in clinical trials, comparing diagnosis-only imaging to colonoscopy.

Rex, D., Rabinowitz, R. "Variable Interpretation of Polyp Size by Using Open Forceps by Experienced Colonoscopists." Gastrointestinal Endoscopy 2014; Vol. 79, pp. 402-407.

Cold Snare Versus Conventional Polypectomy for Removal of Small Colorectal Polyps in Anticoagulated Patients

To compare the bleeding risk after cold snare polypectomy or conventional polypectomy for small colorectal polyps in anticoagulated patients, a study was carried out in a prospective, randomized controlled study in a municipal hospital in Japan. Patients with polyps up to 10 mm in diameter were enrolled and randomized to polypectomy with either cold snare technique or conventional polypectomy (cold group versus conventional group), without discontinuation of Warfarin.

The primary outcome measure was delayed bleeding requiring endoscopic intervention within two weeks after polypectomy. Secondary outcome measures were immediate bleeding and retrieval rate of colorectal polyps.

Seventy patients were randomized (159 polyps), cold group (N = 35; 78 polyps), and conventional group (N = 35; 81 polyps). The patient's demographic characteristics, including INR and number, size, and shape of polyps removed were similar between the two techniques. Immediate bleeding during the procedure was more common with conventional polypectomy (23%), compared with cold polypectomy (5.7%). No

delayed bleeding occurred in the cold group, whereas 5 patients (14%) required endoscopic hemostasis in the conventional group. Complete polyp retrieval rates were identical (94% vs. 93%). The presence of histologically demonstrated injured arteries in the submucosal layer with cold snare was significantly less than with conventional snare (22% vs. 39%).

It was concluded that delayed bleeding requiring hemostasis occurred significantly less commonly after cold snare polypectomy than conventional polypectomy, despite continuation of anticoagulants. Cold snare polypectomy is preferred for removal of small colorectal polyps in anticoagulated patients.

Horiuchi, A., Nakayama, Y., Kagiyama, M., et al. "Removal of Small Colorectal Polyps in Anticoagulated Patients: A Prospective, Randomized Comparison of Cold Snare and Conventional Polypectomy." Gastrointestinal Endoscopy 2014; Vol. 79, pp. 417-423.

Endoscopic Versus Surgical Resection for Early Esophageal Cancer

To compare overall survival and mortality related to endoscopic eradication therapy and esophagectomy in patients with early esophageal cancer (EC), patients with early esophageal cancer (EC), stages T0 and T1 were identified from epidemiology and end result database from 1998 to 2009.

Demographics, tumor-specific data and survival were compared. Cox Proportional Hazards Regression models were used to evaluate the association between treatment and EC-specific mortality (two years), and long-term (five years). Overall survival and EC-specific mortality, outcomes based on histology and stage, treatment patterns, and predictors of cancer-specific mortality represented the main outcome measurements.

A total of 430 (21%), and 1,586 (79%) patients underwent endoscopic eradication therapy (EET), and esophagectomy, respectively. There was no difference in the two-year (EET 10.5%) versus esophagectomy (12.7%) and five-year (EET 36.7%) versus esophagectomy (42.8%) EC-related mortality rates between the two groups. EET patients had higher mortality rates attributed to non-EC causes (5 years 46.6% versus 20.6%). Similar results were noted when comparisons were limited to patients with stage T0 and T1A disease and esophageal adenocarcinoma.

There was no difference in EC-specific mortality in the EET compared with the surgery group (HR 1.4). The variables associated with mortality were older age, year of diagnosis, radiation therapy, higher stage, and esophageal squamous cell carcinoma.

It was concluded that this population-based study demonstrated comparable mid and long-term EC-related mortality with early EC undergoing EET and surgical resection.

Wani, S., Drehos, J., Cook, M., et al. "Comparison of Endoscopic Therapies and Surgical Resection in Patients with Early Esophageal Cancer: A Population-Based Study. Gastrointestinal Endoscopy 2014; Vol. 79, pp. 224-232.

Endoscopy Versus Surgery for Early Neoplasia in Barrett's Esophagus

To compare the efficacy and safety of esophagectomy versus endotherapy in the treatment of Barrett's esophagus, with high-grade dysplasia and intramucosal cancer, seven studies were reviewed involving 870 patients. The main outcome measurements included neoplasia, remission rate, neoplasia recurrence rate, overall survival rate, neoplasia-related death, and major adverse events. Meta-analysis showed that there was no significant difference between endotherapy and esophagectomy in the neoplasia remission rate (RR 0.96), overall survival rate at one year (RR 0.99), three years (RR 1.03), five years (RR 1.0), and neoplasia mortality (risk difference zero).

Endotherapy was associated with a higher neoplasia recurrence rate (RR 9.5), and fewer major adverse events (RR 0.38).

It was concluded that endotherapy and esophagectomy show similar efficacy except in neoplasia recurrence rate, which is higher after endotherapy.

Wu, J., Pan, Y., Wang, T., et al. "Endotherapy Vs. Surgery for Early Neoplasia in Barrett's Esophagus: A Meta-Analysis." Gastrointestinal Endoscopy 2014; Vol. 79, pp. 233-241.

Murray H. Cohen, D.O., "From the Literature" Editor, is on the Editorial Board of *Practical Gastroenterology.*

Macrolide Use and Pyloric Stenosis

Macrolides are a commonly used antibiotic class, and there is a concern regarding a possible association between infant macrolide use and infantile hypertrophic pyloric stenosis (IHPS). It is unknown if maternal use of macrolides increases the risk of IHPS in the setting *in utero* exposure or during breast feeding. This study utilized the Danish Civil Registration System which includes a large amount of parent-child health data. Maternal macrolide and other antibiotic prescription information were determined in a large cohort of mothers from onset of pregnancy until 120 days after birth from 1996 to 2011. Diagnostic codes and surgery codes were utilized to determine cases of IHPS in the first 120 days of life.

The study included 999,378 infants in which 33,091 infants (3%) had mothers who used a macrolide during pregnancy; 21,557 infants (2.2%) had mothers who had used a macrolide in the first 120 days after birth; and 6591 infants (0.6%) had themselves been given macrolides in the first 120 days after birth. A total of 880 infants developed IHPS, and the rate ratio for infants taking macrolides and developing IHPS was 29.8 for the first 13 days of life and 3.24 for days 14 through 120. The rate ratio for postnatal maternal macrolide use and infants developing IHPS was 3.49 for the first 13 days of life and 0.7 for days 14 through 120. A positive risk difference for developing IHPS after infant macrolide use or from postnatal maternal macrolide use per 1000 exposed infants was noted, especially in the first 13 days of life. Similar IHPS risk findings were seen if macrolide exposure occurred during pregnancy, especially from gestational week 28 to birth. No effect modifications were found based on infant sex, presence of congenital malformations, maternal age, seasonality, or maternal tobacco use. No association was noted between IHPS and other antibiotics groups (penicillin and amoxicillin).

In summary, infant or maternal exposure to macrolides appears to be associated with an increased risk of IHPS, especially in the first 2 weeks of life. There is also a smaller risk of IHPS occurring in infants exposed to macrolides during week 28 of gestation to birth. This study provides further evidence that macrolides should be used with caution late in pregnancy or in the first weeks of life.

(Lund M, Pasternak B, Davidsen R, Feenstra B, Krogh C, Diaz L, Wohlfahrt J, Melbye M. "Use of macrolides in mother and child and risk of infantile hypertrophic pyloric stenosis: nationwide cohort study." British Medical Journal. 2014; 348: g1908).

Gluten Sensitivity in Children

Celiac disease (CD) is well described in children, but gluten sensitivity (GS) has undergone very limited pediatric research as to its clinical presentation. The authors of this study evaluated 15 children (10 males) with GS defined as negative CD serology and a negative allergy work-up for wheat, including food-specific IgE, prick testing, and patch testing. The study group had a mean age of 9.6 ± 3.9 years.

(continued on page 48)

(continued from page 46)

GS patients were compared to 15 CD patients and 15 patients with functional abdominal pain who underwent similar CD and allergy testing. All children underwent a gluten challenge consisting of no gluten exposure for 8 weeks, followed by sequential and increasing dosing of gluten up to 5 grams in a 48-hour observed trial to assess for gastrointestinal symptoms. Esophagogastroduodenoscopy (EGD) with duodenal biopsies was offered to all GS patients although only 11 GS patients (73%) underwent this procedure.

Most GS patients had abdominal pain (80%) and diarrhea (73%) although additional symptoms were noted which included fatigue, bloating, limb pain, vomiting, constipation, headache, and failure to thrive. All GS patients had symptoms when they underwent a gluten challenge. Celiac serology, including tissue transglutaminase and anti-endomysial IgA antibody titers, was negative in all GS patients. In those GS patients who underwent duodenal biopsy, patients either had no duodenal pathologic changes or had mildly inflamed mucosa (Marsh score 0-1). In contrast, all CD patients had characteristic duodenal biopsy findings of CD (Marsh 3a-3c). No inflammatory or hematologic testing abnormalities were found between the GS and control subjects.

This study demonstrates children with GS symptoms and no associated wheat allergy or CD can have symptoms that are reproducible when they are challenged by wheat ingestion. These pediatric patients have GS symptoms in a manner similar to adults; however, this study includes only a relatively small number of patients. It is unknown if children with GS have a type of functional abdominal pain or if children with GS will develop CD later in life.

(Francavilla R, Cristofori F, Castellaneta S, Polloni C, Albano V, Dellate S, Indrio F, Cavallo L, Catassi C. "Clinical, serologic and histologic features of gluten sensitivity in children." Journal of Pediatrics. 2014; 164: 463-467).

John Pohl, M.D., Book Editor, is on the Editorial Board of *Practical Gastroenterology*

OLYMPUS LAUNCHES NEW, MINIMALLY INVASIVE INNOVATION FOR CAPSULE ENDOSCOPY PROCEDURES

ENDOCAPSULE 10 Delivers Outstanding Visualization, Improved Efficiency and Enhanced Features for Noninvasive Observation of the Small Intestine

CENTER VALLEY, PA – Olympus, a precision technology leader in designing and delivering innovative solutions in Medical and Surgical Products, among other core businesses, announced today the commercial availability of its 510(k) cleared, next-generation ENDOCAPSULE 10 System for small bowel capsule endoscopy procedures.

Today, thousands of Americans are plagued with disorders of the small bowel, including chronic constipation or diarrhea, bleeding, infections, cancers, ulcers, obstructions, celiac and Crohn's disease, and irritable bowel syndrome among others. Advances in endoscopic technology — including capsule endoscopy — have helped physicians better detect and treat small bowel disorders at earlier stages. According to Truven Health, 137,850 outpatient capsule endoscopies were performed in the United States in 2012.[i]

"The new ENDOCAPSULE 10 System offers advanced, minimally invasive technology designed to improve diagnostic capabilities, procedural efficiency and patient comfort," said Luke Calcraft, President of the Medical Systems Group at Olympus Corporation of the Americas. "The system can help facilities fulfill the requirements of healthcare reform aimed at improving quality of care, decreasing costs and enhancing patient satisfaction."

Outstanding Visualization

The ENDOCAPSULE 10 System features advanced Olympus lens technology and sensitive, high-resolution image sensor technology to provide clear and vivid imaging results for fine observation of a variety of abnormalities in the small bowel. The capsule's 160° field of view sees 10% more mucosa than the other capsule endoscopy.

Olympus' ENDOCAPSULE 10 System offers new innovations for capsule endoscopy with outstanding visualization, improved efficiency and enhanced user features for optimal clinical performance and improved patient comfort.

Improved Efficiency

Intelligent software built into the system simplifies the reading and analysis of the captured imagery, automatically detects images that require closer inspection and indicates where each thumbnail image was captured to determine location of any detected abnormalities. A 3D tracking function allows the system to display the capsule position inside the body to check its progress as it moves through the intestine.

Enhanced User Features

In addition to improvements in the imaging and software technologies, the system also features improvements that increase ease of use for clinicians and patients. The recorder unit is now lighter, more compact and more comfortable to wear with an improved harness and an antenna that can be worn over clothes rather than applied directly to the skin. The recorder allows quick initialization by the clinician and allows image to be viewed in real time or via download later to the system's workstation.

The ENDOCAPSULE 10 System was showcased at Digestive Disease Week (DDW) in May, 2014 in Chicago, IL. Physicians were invited to see the latest features and improvements in capsule endoscopy.

For more information about the ENDOCAPSULE 10 System, please contact your Olympus sales representative by calling: **866-888-1950**

or visit: www.medical.olympusamerica.com

About Olympus Medical Systems Group

Olympus Medical Systems Group, a division of global technology leader Olympus, develops solutions for healthcare professionals that help improve clinical outcomes, reduce overall costs and enhance quality of life for their patients. By enabling less invasive procedures, innovative diagnostic and therapeutic endoscopy, and early stage lung cancer evaluation and treatments, Olympus is transforming the future of healthcare.

[i] Data for use in this study were supplied by Truven Health Analytics Inc., Ann Arbor, Michigan ("Truven Health"). Any analysis, interpretation or conclusion based on these data is solely that of the authors and Truven Health disclaims responsibility for any such analysis, interpretation or conclusion.

AbbVie Receives Orphan Drug Designation for HUMIRA® (adalimumab) from the U.S. Food and Drug Administration for the Investigational Treatment of Certain Forms of Non-infectious Uveitis

NORTH CHICAGO, IL – AbbVie (NYSE:ABBV) announced that the U.S. Food and Drug Administration (FDA) has granted HUMIRA® (adalimumab) orphan drug designation for the treatment of non-infectious intermediate, posterior, or pan-uveitis, or chronic non-infectious anterior uveitis, a group of rare but serious inflammatory diseases of the eye. AbbVie is investigating the efficacy and safety of HUMIRA for the treatment of non-infectious uveitis, and the clinical program is in Phase III development. HUMIRA is not currently approved to treat any form of uveitis.

Uveitis is a general term that encompasses several inflammatory eye diseases. The associated inflammation causes damage of eye tissue leading to reduced vision and/or vision loss. While the exact cause of uveitis is unknown, this condition can be caused by an infection, autoimmune disease, medication, surgery or trauma to the eye. Symptoms of uveitis may include vision loss, blurred vision, eye pain and redness, as well as sensitivity to light.[1] It is estimated that uveitis accounts for 10 to 15 percent of all cases of total blindness in the U.S.[2]

"Few well characterized treatment options are available for patients suffering from uveitis, and the orphan drug designation recognizes the significant unmet need that exists within this disease," said Scott Brun, M.D., Vice President, Pharmaceutical Development, AbbVie. "AbbVie remains committed to the ongoing development of HUMIRA to treat a variety of autoimmune diseases where patients have the potential to benefit."

About Orphan Drug Designation

The Orphan Drug Designation program provides orphan status to drugs and biologics which are defined as those intended for the safe and effective treatment, diagnosis or prevention of rare diseases/disorders that affect fewer than 200,000 people in the United States, or that affect more than 200,000 persons but are not expected to recover the costs of developing and marketing a treatment drug**.**

The approval of an orphan designation request does not alter the standard regulatory requirements and process for obtaining marketing approval for an investigational use. Sponsors must establish safety and efficacy of a compound in the treatment of a disease through adequate and well-controlled studies.

U.S. Product Information for HUMIRA® (adalimumab)

HUMIRA is a prescription medicine used:

To reduce the signs and symptoms of:

- **Moderate to severe rheumatoid arthritis (RA)** in adults. HUMIRA can be used alone, with methotrexate, or with certain other medicines. HUMIRA may prevent further damage to bones and joints and may help the ability to perform daily activities.
- **Moderate to severe polyarticular juvenile idiopathic arthritis (JIA)** in children 4 years of age and older. HUMIRA can be used alone, with methotrexate, or with certain other medicines.
- **Psoriatic arthritis (PsA)** in adults. HUMIRA can be used alone or with certain other medicines. HUMIRA may prevent further damage to bones and joints and may help the ability to perform daily activities.
- **Ankylosing spondylitis (AS)** in adults.
- **Moderate to severe Crohn's disease (CD)** and to achieve and maintain clinical remission in adults who have not responded well to conventional treatments. HUMIRA is also used to reduce signs and symptoms and achieve clinical remission in these adults who have also lost response to or are unable to tolerate infliximab.

In adults, to help get moderate to severe ulcerative colitis (UC) under control (induce remission) and keep it under control (sustain remission) when certain other medicines have not worked well enough. It is not known if HUMIRA is effective in people who stopped responding to or could not tolerate anti-TNF medicines.

To treat moderate to severe chronic plaque psoriasis (Ps) in adults who are ready for systemic therapy or phototherapy, and are under the care of a doctor who will decide if other systemic therapies are less appropriate.

IMPORTANT SAFETY INFORMATION

HUMIRA is a TNF blocker medicine that affects the immune system and can lower the ability to fight infections. **Serious infections have happened in people taking HUMIRA. These serious infections include tuberculosis (TB) and infections caused by viruses, fungi, or bacteria that have spread throughout the body. Some people have died from these infections.** People should be tested for TB before HUMIRA use and monitored for signs and symptoms of TB during therapy. People at risk of TB may be treated with medicine for TB. Treatment with HUMIRA should not be started in a person with an active infection, unless approved

by a doctor. HUMIRA should be stopped if a person develops a serious infection. People should tell their doctor if they live in or have been to a region where certain fungal infections are common, have had TB, hepatitis B, are prone to infections, or have symptoms such as fever, fatigue, cough, or sores. For people taking TNF blockers, including HUMIRA, the chance of getting lymphoma or other cancers may increase. Some people have developed a rare type of cancer called hepatosplenic T-cell lymphoma. This type of cancer often results in death. If using TNF blockers including HUMIRA, the chance of getting two types of skin cancer (basal cell and squamous cell) may increase. These types are generally not life-threatening if treated. Other possible serious side effects with HUMIRA include hepatitis B infection in carriers of the virus, allergic reactions, nervous system problems, blood problems, certain immune reactions, including a lupus-like syndrome, liver problems, and new or worsening heart failure or psoriasis. The use of HUMIRA with anakinra or abatacept is not recommended. People using HUMIRA should not receive live vaccines. Common side effects of HUMIRA include injection site reactions (redness, rash, swelling, itching, or bruising), upper respiratory infections (including sinus infections), headaches, rash, and nausea. HUMIRA is given by injection under the skin. The benefits and risks of HUMIRA should be carefully considered before starting therapy.

This is not a complete list of the Important Safety Information for HUMIRA. For additional important safety information, please visit:

http://www.rxabbvie.com/pdf/humira.pdf

http://www.rxabbvie.com/pdf/humira_medguide.pdf

U.S. FDA Grants Priority Review to AbbVie for Investigational, All-Oral, Interferon-Free Therapy for the Treatment of Genotype 1 Chronic Hepatitis C

NORTH CHICAGO, IL – AbbVie (NYSE: ABBV) announced that the New Drug Application (NDA) for its investigational, all-oral, interferon-free regimen for the treatment of adult patients with chronic genotype 1 (GT1) hepatitis C virus (HCV) infection has been accepted by the U.S. Food and Drug Administration (FDA) and has been granted priority review.

The NDA was submitted on April 21, 2014 and is supported by data from a large clinical program including six Phase III studies of more than 2,300 GT1 patients in over 25 countries. The regimen was granted a Breakthrough Therapy designation by the FDA in May 2013, a status given to investigational treatments for serious or life-threatening conditions with preliminary clinical evidence demonstrating substantial improvement on at least one clinically significant endpoint compared to available therapy.

In May 2014, AbbVie submitted marketing authorization applications (MAAs) for regulatory approval in the European Union.

About AbbVie's Investigational HCV Regimen

The AbbVie investigational regimen consists of the fixed-dose combination of ABT-450/ritonavir co-formulated with ombitasvir (ABT-267), and dasabuvir (ABT-333) with or without RBV. The combination of three different mechanisms of action interrupts the hepatitis C virus replication process with the goal of optimizing sustained virologic response rates across different patient populations.

Additional information about AbbVie's Phase III studies can be found on: **www.clinicaltrials.gov**

AbbVie's HCV Development Program

The AbbVie HCV clinical development program is intended to advance scientific knowledge and clinical care by investigating an interferon-free, all-oral regimen with and without ribavirin with the goal of producing high sustained virologic response rates in as many patients as possible, including those that typically do not respond well to treatment, such as previous non-responders to interferon-based therapy or patients with advanced liver fibrosis or cirrhosis. ABT-450 was discovered during the ongoing collaboration between AbbVie and Enanta Pharmaceuticals (NASDAQ: ENTA) for hepatitis C virus protease inhibitors and regimens that include protease inhibitors. ABT-450 is being developed by AbbVie for use in combination with AbbVie's other investigational medicines for the treatment of hepatitis C.

About AbbVie

AbbVie is a global, research-based biopharmaceutical company formed in 2013 following separation from Abbott Laboratories. The company's mission is to use its expertise, dedicated people and unique approach to innovation to develop and market advanced therapies that address some of the world's most complex and serious diseases. AbbVie employs approximately 25,000 people worldwide and markets medicines in more than 170 countries.

For further information on the company and its people, portfolio and commitments, please visit **www.abbvie.com**.

MEETINGS CALENDAR

July 15 - 16, 2014 The Kenneth Rainin Foundation 2014 Innovations Symposium Targeting IBD

Union Square Marriott, San Francisco, CA – The Kenneth Rainin Foundation's 2014 Innovations Symposium: Taming the Microbiome brings together influential and collaborative researchers and institutions, with the common goal of curing Inflammatory Bowel Disease (IBD), a disease that affects five million people worldwide. The annualvSymposium provides a nexus of diverse people, ideas and insights with the potential to accelerate and transform IBD research.

A new addition to the Symposium this year is the Rainin Foundation's Synergy Award, a grant opportunity available only to conference participants. This award was established to encourage synergistic, discovery-oriented projects that feature interdisciplinary collaboration. The Synergy Award will provide $100,000 in research support for one year to each investigator on the team, up to a total of $300,000.

To learn more about the symposium, please visit:

rainin-symposium.com

September 16, 2014 Raising C Diff Awareness Conference

Royal Holloway, University of London, Egham Hill, Surrey, England – The C Diff Foundation, a nonprofit organization, is pleased to host the annual "Raising C Diff Awareness" Conference.Tuesday, September 16th, 2014 8:00 am – 4:30 pm

Exhibit Space is limited and Sponsorships are available. For more information contact Nancy C. Caralla, Executive Director at **(919) 201-1512** or email the Foundation at: **cdiff.foundation@yahoo.com** or visit the website: **www.cdifffoundation.org**

C Diff Foundation: Educating, and advocating for C. diff. prevention, treatments, and environmental safety worldwide.

October 8 - 11, 2014 77th Annual University of Minnesota Colon and Rectal Surgery: Current Principles & Practice

The Depot Renaissance Minneapolis Hotel, Minneapolis, MN – Invited Lecturers:

- Andre D'Hoore, M.D. - Leuven, Netherlands
- George Chang, M.D. - Houston. TX
- Arden Morris, M.D. - Ann Arbor, MI
- Neil Mortensen, MA, M.D. - Oxford, UK

The University of Minnesota is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

For more information, contact:

Mary Pat McGlynn at (952) 564-3062
info@colonrectalcourse.org
http://www.colonrectalcourse.org