

# Gastroenterology

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TABLE OF  
CONTENTS

## Contents

### ON THE COVER

See article by Meyer et al on page 2077 for additional information.

Gastroenterology



### COVERING THE COVER

1995 A. T. Chan and C. S. Williams

### COMMENTARIES

1998 **Colorectal Cancer Screening in the Novel Coronavirus Disease-2019 Era**

*E. Dekker, H.-M. Chiu, I. Lansdorp-Vogelaar, and On behalf of the Expert Working Group on COVID-19 of the WEO Colorectal Cancer Screening Committee*

2004 **Monitoring Fecal Microbiota Transplantation Practice in a Rapidly Evolving Health and Regulatory Environment**

*C. R. Kelly, L. A. Laine, and G. D. Wu*

2007 **Moving Toward Impact: An Introduction to Implementation Science for Gastroenterologists and Hepatologists**

*S. S. Rogal, B. J. Powell, M. Chinman, and On behalf of the Gastroenterology and Hepatology Implementation Research Group*

### MEETING SUMMARY

2013 **Defining Endpoints and Biomarkers in Inflammatory Bowel Disease: Moving the Needle Through Clinical Trial Design**

*M. T. Abreu, W. J. Sandborn, and the IOIBD Defining Endpoints and Biomarkers in Inflammatory Bowel Disease Writing Group*

Video Related article in CGH Hot Papers From New Investigators

CME quiz Editorial accompanies this article Additional online content available Cover

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**MENTORING, EDUCATION, AND TRAINING CORNER**

- 2019 Navigating the Human Gut Microbiome: Pathway to Success from Lessons Learned**  
*J. Miyoshi, M. C. Rao, and E. B. Chang*

**EDITORIAL**

- 2025 Could a Small Population of Epithelial Cells Get “Tuft” With Crohn’s Disease?**  
*M. J. Rosen*  
See Banerjee A et al on page 2101.

**CLINICAL CHALLENGES AND IMAGES IN GI**

- 2028 A “Nonemergent” Case of Air Under the Diaphragm**  
*D. A. Lakhani, Y. Hadi, and M. Smith*
- 2030 Generalized Gingival Hyperplasia and Rectorrhagia in a 13-Year-Old Boy**  
*A. Courtet, J. Lemale, and M. C. Carra*
- 2034 Colitis in a Rheumatologic Patient**  
*J. Lui, J. d. l. Fuente, and M. Halland*

**ELECTRONIC CLINICAL CHALLENGES AND IMAGES IN GI**

For a full list, please see the table of contents online at [www.gastrojournal.org](http://www.gastrojournal.org).

**PRACTICAL TEACHING CASE**

- 2036 A Curious Case of Confusion in a Patient With Cirrhosis**  
*A. K. Kamboj, J. Yung-Lun Chin, and R. C. Huebert*

**ORIGINAL RESEARCH****Clinical—Alimentary Tract**

- 2039 Alterations in Intestinal Microbiota of Children With Celiac Disease at the Time of Diagnosis and on a Gluten-free Diet**  
*K. Zafeiropoulou, B. Nichols, M. Mackinder, O. Biskou, E. Rizou, A. Karanikolou, C. Clark, E. Buchanan, T. Cardigan, H. Duncan, D. Wands, J. Russell, R. Hansen, R. K. Russell, P. McGrogan, C. A. Edwards, U. Z. Ijaz, and K. Gerasimidis*

Children with celiac disease have differences in composition of intestinal microbes compared to healthy children. Some of these differences are caused by a gluten-free diet, but studies are needed to determine whether the other changes are a cause or a result of celiac disease.

- 2052 Relationship Between Combined Histologic and Endoscopic Endpoints and Efficacy of Ustekinumab Treatment in Patients With Ulcerative Colitis**  
*K. Li, C. Marano, H. Zhang, F. Yang, W. J. Sandborn, B. E. Sands, B. G. Feagan, D. T. Rubin, L. Peyrin-Biroulet, J. R. Friedman, and G. De Hertogh*

The drug ustekinumab induces and maintains mucosal healing in patients with UC, based on endoscopy and pathology evaluation.

- 2065 Sex-Specific Genetic Associations for Barrett's Esophagus and Esophageal Adenocarcinoma**  
*J. Dong, C. Maj, S. Tsavachidis, Q. T. Ostrom, P. Gharahkhani, L. A. Anderson, A. H. Wu, W. Ye, L. Bernstein, O. Borisov, J. Schröder, W.-H. Chow, M. D. Gammon, G. Liu, C. Caldas, P. D. Pharoah, H. A. Risch, A. May, C. Gerges, M. Anders, M. Venerito, T. Schmidt, J. R. Izbicki, A. H. Hölscher, B. Schumacher, Y. Vashist, H. Neuhaus, T. Rösch, M. Knapp, P. Krawitz, A. Böhmer, P. G. Iyer, B. J. Reid, J. Lagergren, N. J. Shaheen, D. A. Corley, I. Gockel, R. C. Fitzgerald, Stomach and Oesophageal Cancer Study (SOCS) consortium, M. B. Cook, D. C. Whiteman, T. L. Vaughan, J. Schumacher, and A. P. Thrift*

The authors identify sex-specific genetic features that are associated with BE and EA, and that may contribute to sex disparities in these diseases.

- 2077 Group 2 Innate Lymphoid Cells Coordinate Damage Response in the Stomach**  
*A. R. Meyer, A. C. Engevik, T. Madorsky, E. Belmont, M. T. Stier, A. E. Norlander, M. A. Pilkinton, W. J. McDonnell, J. A. Weis, B. Jang, S. A. Mallal, R. S. Peebles Jr, and J. R. Goldenring*

We have determined that intrinsic mucosal immune cells are integral for coordinated repair of the gastric lining following severe injury.

- 2092 Increased Intestinal Permeability Is Associated With Later Development of Crohn's Disease**  
*W. Turpin, S.-H. Lee, J. A. Raygoza Garay, K. L. Madsen, J. B. Meddings, L. Bedrani, N. Power, O. Espin-Garcia, W. Xu, M. I. Smith, A. M. Griffiths, P. Moayyedi, D. Turner, E. G. Seidman, A. H. Steinhart, J. K. Marshall, K. Jacobson, D. Mack, H. Huynh, C. N. Bernstein, A. D. Paterson, The Crohn's and Colitis Canada Genetic Environmental Microbial Project Research Consortium, and K. Croitoru*

Abnormal intestinal permeability appears to precede development of CD, and might be involved in pathogenesis. Strategies to restore gut barrier function might be developed to prevent CD in susceptible individuals.

- 2101 Succinate Produced by Intestinal Microbes Promotes Specification of Tuft Cells to Suppress Ileal Inflammation**  
*A. Banerjee, C. A. Herring, B. Chen, H. Kim, A. J. Simmons, A. N. Southard-Smith, M. M. Allaman, J. R. White, M. C. Macedonia, E. T. McKinley, M. A. Ramirez-Solano, E. A. Scoville, Q. Liu, K. T. Wilson, R. J. Coffey, M. K. Washington, J. A. Goettel, and K. S. Lau*

See editorial on page 2025.

Tuft cell subpopulations in the intestinal tract respond differentially to external stimuli. Therapeutic expansion of tuft cells in models of small intestinal inflammation ameliorates disease.

- 2116 Single-Cell Transcriptional Analyses Identify Lineage-Specific Epithelial Responses to Inflammation and Metaplastic Development in the Gastric Corpus**  
*K. A. Bockerstett, S. A. Lewis, C. N. Noto, E. L. Ford, J. B. Saenz, N. M. Jackson, T.-H. Ahn, J. C. Mills, and R. J. DiPaolo*

This study identified cells and proteins that contribute to development of cancer in the inflamed stomach.

- 2130 S100A8 and S100A9 Are Important for Postnatal Development of Gut Microbiota and Immune System in Mice and Infants**  
*M. Willers, T. Ulas, L. Völlger, T. Vogl, A. S. Heinemann, S. Pirr, J. Pagel, B. Fehlhaber, O. Halle, J. Schöning, S. Schreek, U. Löber, M. Essex, P. Hombach, S. Graspeuntner, M. Basic, A. Bleich, K. Cloppenburg-Schmidt, S. Künzel, D. Jonigk, J. Rupp, G. Hansen, R. Förster, J. F. Baines, C. Härtel, J. L. Schultze, S. K. Forslund, J. Roth, and D. Viemann*

The authors found proteins that modulate the immune system, that are present in higher levels of full-term infants than preterm infants, and that are important for development of a healthy intestinal microbiota and immune system.

**2146 The Long Noncoding RNA *CCAT2* Induces Chromosomal Instability Through BOP1-AURKB Signaling**

*B. Chen, M. P. Dragomir, L. Fabris, R. Bayraktar, E. Knutsen, X. Liu, C. Tang, Y. Li, T. Shimura, T. C. Ivkovic, M. Cruz De los Santos, S. Anfossi, M. Shimizu, M. Y. Shah, H. Ling, P. Shen, A. S. Multani, B. Pardini, J. K. Burks, H. Katayama, L. C. Reineke, L. Huo, M. Syed, S. Song, M. Ferracin, E. Oki, B. Fromm, C. Ivan, K. Bhuvaneshwar, Y. Gusev, K. Mimori, D. Menter, S. Sen, T. Matsuyama, H. Uetake, C. Vasilescu, S. Kopetz, J. Parker-Thornburg, A. Taguchi, S. M. Hanash, L. Girnita, O. Slaby, A. Goel, G. Varani, M. Gagea, C. Li, J. A. Ajani, and G. A. Calin*

The authors identified a gene product that causes chromosomes to become unstable in colon cells, promoting development of colorectal cancer.

**2163 In Colorectal Cancer Cells With Mutant *KRAS*, *SLC25A22*-Mediated Glutaminolysis Reduces DNA Demethylation to Increase WNT Signaling, Stemness, and Drug Resistance**

*C. C. Wong, J. Xu, X. Bian, J.-L. Wu, W. Kang, Y. Qian, W. Li, H. Chen, H. Gou, D. Liu, S. T. Y. Luk, Q. Zhou, F. Ji, L.-S. Chan, S. Shirasawa, J. JY. Sung, and J. Yu*

The authors identified an altered metabolic pathway in colorectal cancer cells that increases their proliferation and survival. Strategies to block this pathway might be developed for treatment of colorectal and other cancers.

**2181 *Clostridioides difficile* Toxin A Remodels Membranes and Mediates DNA Entry Into Cells to Activate Toll-Like Receptor 9 Signaling**

*X. Chen, X. Yang, J. de Anda, J. Huang, D. Li, H. Xu, K. S. Shields, M. Džunková, J. Hansen, I. J. Patel, E. U. Yee, D. T. Golenbock, M. A. Grant, G. C. L. Wong, and C. P. Kelly*

This study identified a mechanism by which a bacterial toxin activates an inflammatory response in the intestine.

**2193 Linking Strain Engraftment in Fecal Microbiota Transplantation With Maintenance of Remission in Crohn's Disease**

*L. Kong, J. Lloyd-Price, T. Vatanen, P. Seksik, L. Beaugerie, T. Simon, H. Vlamakis, H. Sokol, and R. J. Xavier*

This manuscript represents the first study to use metagenomics to investigate the effects of fecal microbiota transplant (FMT) in Crohn's disease (CD). This approach enables far greater resolution than previously available, revealing strain- and species-level differences induced by FMT.

**Basic and Translational—Liver****2203 Cooperation Between Distinct Cancer Driver Genes Underlies Intertumor Heterogeneity in Hepatocellular Carcinoma**

*P. Molina-Sánchez, M. Ruiz de Galarreta, M. A. Yao, K. E. Lindblad, E. Bresnahan, E. Bitterman, T. C. Martin, T. Rubenstein, K. Nie, J. Golas, S. Choudhary, M. Bárcena-Varela, A. Elmas, V. Miguela, Y. Ding, Z. Kan, L. T. Grinspan, K.-L. Huang, R. E. Parsons, D. J. Shields, R. A. Rollins, and A. Lujambio*

This novel collection of murine hepatocellular carcinoma models and corresponding cell lines establishes the role of cancer driver genes in promoting inter-tumor heterogeneity and enables mechanistic and translational studies.

**CONTINUING MEDICAL EDUCATION (CME)/MOC ACTIVITY**

**e14 CME Exam 1: A Curious Case of Confusion in a Patient With Cirrhosis**

**e15 Continuing Medical Education Answers: December 2020**

**BRIEF COMMUNICATIONS**

- 2221** **Impact of Obesity on Outcomes of Patients With Coronavirus Disease 2019 in the United States: A Multicenter Electronic Health Records Network Study**  
*S. Singh, M. Bilal, H. Pakhchanian, R. Raiker, G. S. Kochhar, and C. C. Thompson*
- 2226** **Prevalence, Risk Factors, and Outcomes of Hospitalized Patients With Coronavirus Disease 2019 Presenting as Acute Pancreatitis**  
*S. Inamdar, P. C. Benias, Y. Liu, D. V. Sejpal, S. K. Satapathy, and A. J. Trindade, and the Northwell COVID-19 Research Consortium*
- 2229** **Asymptomatic Severe Acute Respiratory Syndrome Coronavirus 2 Infection in Patients With Inflammatory Bowel Disease Under Biologic Treatment**  
*L. Norsa, P. Cosimo, A. Indriolo, N. Sansotta, L. D'Antiga, and A. Callegaro*
- 2232** **Epoxygenase-Derived Epoxyeicosatrienoic Acid Mediators Are Associated With Nonalcoholic Fatty Liver Disease, Nonalcoholic Steatohepatitis, and Fibrosis**  
*A. Arvind, S. A. Osganian, J. A. Sjoquist, K. E. Corey, and T. G. Simon*
- 2235** **Low Risk of Advanced Neoplasms for up to 20 Years After Negative Colonoscopy Result: Potential for Personalized Follow-up Screening Intervals**  
*T. Heisser, F. Guo, T. Niedermaier, B. Holleczeck, M. Hoffmeister, and H. Brenner*
- 2238** **Early-Onset Esophageal Adenocarcinoma Presents With Advanced-Stage Disease But Has Improved Survival Compared With Older Individuals**  
*J. M. Kolb, S. Han, F. I. Scott, C. C. Murphy, P. Hosokawa, and S. Wani, on behalf of the Early Onset Esophageal Adenocarcinoma Study Group*
- 2241** **Monoallelic *NTHL1* Loss-of-Function Variants and Risk of Polyposis and Colorectal Cancer**  
*F. A. Elsayed, J. E. Grolleman, A. Ragunathan, *NTHL1* study group, D. D. Buchanan, T. van Wezel, and R. M. de Voer*

**SELECTED SUMMARIES**

- 2244** **This String's Attached: The Esophageal String Test for Detecting Disease Activity in Eosinophilic Esophagitis**  
*R. D. Venkatesh and E. S. Dellon*
- 2245** **Novel Coronavirus Disease-2019 and the Gastrointestinal Tract: Lessons Learned from Human Organoids**  
*A. Jurado-Gomez and M. D. Giraldez*

**CORRESPONDENCE**

**2248 Noninferiority or Nonsuperiority?**

*M. t. Groen, N. den Broeder, and F. Hoentjen*

**2249 Positive Fecal Immunochemical Test or Cologuard in the Era of the Novel Coronavirus Disease-2019 Pandemic**

*P. E. Young, M. Tadros, and S. Mago*

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