

Gastroenterology

www.gastrojournal.org

Vol. 153, No. 6

December 2017

TABLE OF
CONTENTS

Contents

ON THE COVER

Gastroenterology



Plasma Cell Selects Intestinal Microbiota
in Mice and Promotes Visceral Hypersensitivity

See article by Riba et al, on page 1594 for further information.

COVERING THE COVER

1457 *A. T. Chan and C. S. Williams*

COMMENTARIES

1460 **Will Computer-Aided Detection and Diagnosis Revolutionize Colonoscopy?**

M. F. Byrne, N. Shahidi, and D. K. Rex

1465 **Repeal and Replace? Repair or Despair? 2017 Health Care Reform and Clinical Gastroenterology**

S. D. Dorn

MEETING SUMMARY

e1 **AAA IBD 2017: Methodologies to Collect and Analyze Clinical Data to Support Quality Improvement Initiatives Designed to Optimize the Care of Patients With IBD**

A. K. Waljee, Y. Yang, and G. D. Wu

MENTORING, EDUCATION, AND TRAINING CORNER

1469 **"Spending Your Life Wisely": How to Create an Asset Management Plan**

M. A. Adams and J. I. Allen

EDITORIALS

1473 **Enteric Glia: The Origin of Duodenal Gastrinomas?**

B. D. Gulbransen

See Sundaresan S et al on page 1555.

Video Related article in CGH

CME quiz Editorial accompanies this article Additional online content available Cover

Publisher: *Gastroenterology* (ISSN 0016-5085) is published monthly (semi monthly in January and May) in two indexed volumes by Elsevier Inc, 230 Park Avenue, New York, NY 10169-0901, USA. Periodicals postage paid at New York, NY and additional mailing offices. POSTMASTER: Send address changes to Elsevier, Journal Returns, 1799 Highway 50 East, Linn, MO 65051, USA. 2017 US subscription rates: individual, \$684.00; student and resident, \$261.00. Outside of the U.S. and possessions: individual, \$968.00; student and resident, \$562.00; surface delivery, no additional charge; air mail delivery, add \$78.00. Prices subject to change without notice.

- 1475 Human Intestinal Microbiota and Colorectal Cancer: Moving Beyond Associative Studies**
C. Jobin
 See Liu X et al on page 1607 and Wong SH et al on page 1621.
- 1479 Smoking and Drinking Synergize in Pancreatitis: Multiple Hits on Multiple Targets**
M. Sahin-Tóth and P. Hegyi
 See Lugea A et al on page 1674.

CLINICAL CHALLENGES AND IMAGES IN GI

- 1482 Striking Finding on Colonoscopy: Is This a Watermelon Colon?**
R. Mandalia, T. Choden, and A. Thomas
- 1484 Not Your Ordinary Ulcer: A Cautionary Tale of an Uncommon Condition**
H. H. Nguyen and P. L. Beck
- 1486 An Unusual Finding During Evaluation of Iron Deficiency**
A. Rubio-Tapia, I. A. Hujuel, and T.-T. Wu
- 1488 Periduodenal Mass: A Rare Diagnosis Confirmed by Endoscopic Ultrasound-Guided Fine-Needle Aspiration**
Y. Tomizawa, G. H. Yu, and M. L. Kochman

ELECTRONIC CLINICAL CHALLENGES AND IMAGES IN GI

For a full list, please see the table of contents online at www.gastrojournal.org.

PRACTICAL TEACHING CASE

- 1490 A Rare Cause of Diarrhea and Polyposis**
 (CME) *N. J. Samadder, J. F. Valentine, and K. Affolter*

ORIGINAL RESEARCH

Brief Report

- 1492 Association of Aneuploidy and Flat Dysplasia With Development of High-Grade Dysplasia or Colorectal Cancer in Patients With Inflammatory Bowel Disease**
 (WWW) *J.-H. Tsai, P. S. Rabinovitch, D. Huang, T. Small, A. N. Mattis, S. Kakar, and W.-T. Choi*

Aneuploidy is frequently detected in flat dysplastic lesions in patients with inflammatory bowel disease. This study reveals a significant association between aneuploidy and low-grade dysplasia in conjunction with the subsequent detection of high-grade dysplasia or colorectal cancer.

Full Reports

Clinical—Alimentary Tract

- 1496 Predictors of Use of Monitored Anesthesia Care for Outpatient Gastrointestinal Endoscopy in a Capitated Payment System**
 (CME) (WWW) *M. A. Adams, K. M. Prenovost, J. A. Dominitz, R. G. Holleman, E. A. Kerr, S. L. Krein, S. D. Saini, and J. H. Rubenstein*

The use of monitored anesthesia care (MAC) has doubled in the VA system in the last decade, and is only weakly associated with clinically relevant patient-related factors. This suggests that addressing financial incentives may not be enough to facilitate high-value use of this costly resource outside the VA.

1504 Increased Tryptophan Metabolism Is Associated With Activity of Inflammatory Bowel Diseases

www

S. Nikolaus, B. Schulte, N. Al-Massad, F. Thieme, D. M. Schulte, J. Bethge, A. Rehman, F. Tran, K. Aden, R. Häsler, N. Moll, G. Schütze, M. J. Schwarz, G. H. Waetzig, P. Rosenstiel, M. Krawczak, S. Szymczak, and S. Schreiber

This study reports an inverse relationship between serum levels of tryptophan and disease activity in patients with IBD, suggesting that tryptophan deficiency could contribute to IBD exacerbations.

1517 Association Between Inflammatory Diet Pattern and Risk of Colorectal Carcinoma Subtypes Classified by Immune Responses to Tumor

www

L. Liu, R. Nishihara, Z. R. Qian, F. K. Tabung, D. Nevo, X. Zhang, M. Song, Y. Cao, K. Mima, Y. Masugi, Y. Shi, A. da Silva, T. Twombly, M. Gu, W. Li, T. Hamada, K. Kosumi, K. Inamura, J. A. Nowak, D. A. Drew, P. Lochhead, K. Noshō, K. Wu, M. Wang, W. S. Garrett, A. T. Chan, C. S. Fuchs, E. L. Giovannucci, and S. Ogino

This study reports that inflammatory diets are associated with a higher risk of colorectal cancers that contained little or no lymphocytic reaction around the tumors, but they do not increase risk of other colorectal cancers.

Clinical—Liver**1531 Cost-Effectiveness of Access Expansion to Treatment of Hepatitis C Virus Infection Through Primary Care Providers**

www

T. Rattay, I. P. Dumont, H. S. Heinzow, and D. W. Hutton

Project ECHO® is a cost-effective way to identify and treat chronic hepatitis C virus (HCV) infection, enabling primary care providers to care for HCV patients via routine engagement through videoconferences.

Clinical—Pancreas**1544 Development and Validation of a Chronic Pancreatitis Prognosis Score in 2 Independent Cohorts**

www

G. Beyer, U. M. Mahajan, C. Budde, T. J. Bulla, T. Kohlmann, L. Kuhlmann, K. Schütte, A. A. Aghdassi, E. Weber, F. U. Weiss, A. M. Drewes, S. S. Olesen, M. M. Lerch, and J. Mayerle

This study reports the development of the Chronic Pancreatitis Prognosis Score (COPPS) system to monitor patients with chronic pancreatitis, and determine risk for hospital readmission and potential length of hospital stay.

Basic and Translational—Alimentary Tract**1555 Gastrin Induces Nuclear Export and Proteasome Degradation of Menin in Enteric Glial Cells**

E www

S. Sundaresan, C. A. Meininger, A. J. Kang, A. L. Photenhauer, M. M. Hayes, N. Sahoo, J. Grembecka, T. Cierpicki, L. Ding, T. J. Giordano, T. Else, D. J. Madrigal, M. J. Low, F. Campbell, A.-M. Baker, H. Xu, N. A. Wright, and J. L. Merchant

See editorial on page 1473.

Sub-epithelial enteric glial cells expressed and secreted gastrin in omeprazole-treated mice that harbored Men1 and somatostatin deletions, suggesting a novel origin for MEN1 gastrinomas in the proximal duodenum.

1568 Degradation of PHLPP2 by KCTD17, via a Glucagon-Dependent Pathway, Promotes Hepatic Steatosis

www

K. Kim, D. Ryu, P. Dongiovanni, L. Ozcan, S. Nayak, B. Ueberheide, L. Valenti, J. Auwerx, and U. B. Pajvani

PHLPP2 protects the liver from excess lipid accumulation by terminating insulin signaling, which prevents inappropriate de novo lipogenesis. In obesity, glucagon-dependent PHLPP2 phosphorylation induces PHLPP2-KCTD17 interactions and PHLPP2 degradation to increase lipogenesis, leading to NAFLD.

1581 A Nigro–Vagal Pathway Controls Gastric Motility and Is Affected in a Rat Model of Parkinsonism*L. Anselmi, L. Toti, C. Bove, J. Hampton, and R. A. Travagli*

This study reports a novel pathway between the substantia nigra and brainstem neurons innervating the gut, providing insight into how ingested toxins target these areas to trigger prodromal GI dysfunctions and, later, Parkinson's disease.

1594 Paneth Cell Defects Induce Microbiota Dysbiosis in Mice and Promote Visceral Hypersensitivity*A. Riba, M. Olier, S. Lacroix–Lamandé, C. Lencina, V. Bacquié, C. Harkat, M. Gillet, M. Baron, C. Sommer, V. Mallet, C. Salvador–Cartier, F. Laurent, V. Théodorou, and S. Ménard*

Mice with defects in Paneth cell function develop an intestinal expansion of commensal *Escherichia coli*, leading to visceral hypersensitivity. These findings provide evidence that Paneth cell and intestinal dysbiosis are involved in visceral sensitivity.

1607 BMI1 and MEL18 Promote Colitis-Associated Cancer in Mice via REG3B and STAT3*X. Liu, W. Wei, X. Li, P. Shen, D. Ju, Z. Wang, R. Zhang, F. Yang, C. Chen, K. Cao, G. Zhu, H. Chen, L. Chen, J. Sui, E. Zhang, K. Wu, F. Wang, L. Zhao, and R. Xi*

See editorial on page 1475.

This study documents that BMI1 and MEL18 are required for colitis-associated cancer (CAC) development via regulating a novel REG3B-STAT3 signaling pathway. These findings may have wide implications for both the prevention and treatment of CAC.

1621 Gavage of Fecal Samples From Patients With Colorectal Cancer Promotes Intestinal Carcinogenesis in Germ-Free and Conventional Mice*S. H. Wong, L. Zhao, X. Zhang, G. Nakatsu, J. Han, W. Xu, X. Xiao, T. N. Y. Kwong, H. Tsoi, W. K. K. Wu, B. Zeng, F. K. L. Chan, J. J. Y. Sung, H. Wei, and J. Yu*

See editorial on page 1475.

Previous studies showed associations between colorectal cancer and composition of the gut microbiota; however, cause-and-effect relationships remained undefined. This study demonstrates that fecal samples from colorectal cancer patients can promote cancer formation in mice.

1634 A Panel of Methylated MicroRNA Biomarkers for Identifying High-Risk Patients With Ulcerative Colitis-Associated Colorectal Cancer*Y. Toiyama, Y. Okugawa, K. Tanaka, T. Araki, K. Uchida, A. Hishida, M. Uchino, H. Ikeuchi, S. Hirota, M. Kusunoki, C. R. Boland, and A. Goel*

Methylation of each of a specific subset of miRNAs in rectal mucosa was significantly higher in patients with cancer or neoplasia than in those without these lesions.

Basic and Translational—Liver**1647 Viral Load Affects the Immune Response to HBV in Mice With Humanized Immune System and Liver***M. Dusséaux, G. Masse–Ranson, S. Darche, J. Ahodantin, Y. Li, O. Fiquet, E. Beaumont, P. Moreau, L. Rivière, C. Neuveut, P. Soussan, P. Roingeard, D. Kremsdorf, J. P. Di Santo, and H. Strick–Marchand*

This study demonstrates that the immunophenotype of the host response in a humanized mouse model of HBV infection is dependent on HBV viral load.

1662 **CRISPR/Cas9 Engineering of Adult Mouse Liver Demonstrates That the *Dnajb1-Prkaca* Gene Fusion Is Sufficient to Induce Tumors Resembling Fibrolamellar Hepatocellular Carcinoma**

www

L. H. Engelholm, A. Riaz, D. Serra, F. Dagnæs-Hansen, J. V. Johansen, E. Santoni-Rugiu, S. H. Hansen, F. Niola, and M. Frödin

The DNA mutation DNAJB1-PRKACA, repeatedly identified in fibrolamellar hepatocellular carcinoma patients, was replicated in mice that developed tumors demonstrating that the DNAJB1-PRKACA mutation causes this type of liver cancer.

Basic and Translational—Pancreas

1674 **The Combination of Alcohol and Cigarette Smoke Induces Endoplasmic Reticulum Stress and Cell Death in Pancreatic Acinar Cells**

e www

A. Lugea, A. Gerloff, H.-Y. Su, Z. Xu, A. Go, C. Hu, S. W. French, J. S. Wilson, M. V. Apte, R. T. Waldron, and S. J. Pandol

See editorial on page 1479.

Cigarette smoke promotes cell death and features of pancreatitis in ethanol-sensitized acinar cells by suppressing the adaptive unfolded protein response signaling pathway. ER stress pathways are also activated in response to cigarette smoke, which promotes acinar cell death.

CONTINUING MEDICAL EDUCATION (CME)/MOC ACTIVITIES

e18 Exam 1: A Rare Cause of Diarrhea and Polyposis

e19 Exam 2: Predictors of Use of Monitored Anesthesia Care for Outpatient Gastrointestinal Endoscopy in a Capitated Payment System

SELECTED SUMMARIES

1687 Nonalcoholic Fatty Liver Disease and Colorectal Neoplasia

M. W. Gleeson and J. C. Anderson

1689 Keeping the (S)toolbox Alive Outside of the Body for Drugs Discovery

L. F. Poulin, L. Peyrin-Biroulet, D. Collard, and M. Chamaillard

CORRESPONDENCE

1692 *GREM1* Defect Unlikely to be Disease Causing and Hence Not Useful for Screening and Surveillance in Singapore Mixed Polyposis Families

P. Y. Cheah, M. Lo, and C. L. Tang

1692 Multiple Serrated Polyps and Serrated Polyposis Syndrome: Equally Hazardous?

A. G. C. Bleijenberg, V. H. Roos, J. E. G. Ijspeert, and E. Dekker

1693 Reply

M. Juárez, C. Egoavil, and R. Jover

- 1694 *IFNL4* Genotype Is Associated With Virologic Relapse After 8-Week Treatment With Sofosbuvir, Velpatasvir, and Voxilaprevir**
T. R. O'Brien, S. Kottlil, and R. M. Pfeiffer
- 1695 Quality Indicators for Colonoscopy: Missing the Wood for the Trees?**
A. Braillon

Access to the full content of Gastroenterology Online is available to all subscribers!

AGA members have seamless access to full *Gastroenterology* content from the AGA Web site. Simply sign in to <http://www.gastro.org>, visit the Publications section of the Web site, and click on *Gastroenterology*. You will be directed to the Journal Web site and will have full access to all content without having to supply a different username and password. Members can also visit <http://www.gastrojournal.org> directly and click on "Activate Online Access." Nonmember subscribers must create an online user account and activate their subscription to access the full text of articles on *Gastroenterology* Online. To activate your individual online subscription, please visit <http://www.gastrojournal.org> and click on "Activate Online Access." To activate your account, you

will need your subscriber account or member number, which you can find on your mailing label, (AGA members must use their 10-digit member number, including leading zeros). If you have any questions regarding your online subscription please call Elsevier Customer Service at (800) 654-2452.

Institutional access to *Gastroenterology* Online will be allowed only by limited site licensing. Further instructions will be available online. Personal subscriptions to *Gastroenterology* Online are for individual use only and may not be transferred. Use of *Gastroenterology* Online is subject to agreement to the terms and conditions of use as indicated online.

AGA Member Number

Your Account Number

**Sample
mailing
label**

GAST0000101864
 JANE DOE
 531 MAIN ST
 CENTER CITY, NY 10001-001

1GAST V91-4 1234567-8
 JANE DOE
 531 MAIN ST
 CENTER CITY, NY 10001-001