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Contents

ON THE COVER



See article by Iacucci, et al on page 1558 for additional information.

COVERING THE COVER

1435 *A. T. Chan and C. S. Williams*

COMMENTARIES

1437 **Animal Models for Hepatitis B: Does the Supply Meet the Demand?**

A. Ploss, H. Strick-Marchand, and W. Li

1443 **Potential Biases in Studies of Acid-Suppressing Drugs and COVID-19 Infection**

M. Etminan, M. Nazemipour, M. S. Candidate, and M. A. Mansournia

1447 **COVID-19 and Inflammatory Bowel Disease: Lessons Learned, Practical Recommendations, and Unanswered Questions**

R. C. Ungaro, M. D. Kappelman, D. T. Rubin, and J.-F. Colombel

MEETING SUMMARY

1452 **Selecting End Points for Disease-Modification Trials in Inflammatory Bowel Disease: the SPIRIT Consensus From the IOIBD**

C. Le Berre, L. Peyrin-Biroulet, and the SPIRIT-IOIBD study group

MENTORING, EDUCATION, AND TRAINING CORNER

1461 **How to Strategically Build Your Network for Early Career Gastroenterologists**

J. K. J. Gaidos, D. J. Hass, and S. V. Kane

V Video **CGH** Related article in *CGH* **Hot Papers From New Investigators**

CME CME quiz **E** Editorial accompanies this article **www** Additional online content available **COV** Cover

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EDITORIALS

- 1467 SARS-CoV-2 Infection in the Gastrointestinal Tract: Fecal-Oral Route of Transmission for COVID-19?**
X.-J. Meng and T. J. Liang
See Jiao L et al on page 1647.
- 1469 Pathologist, Meet Picasso! Virtual Chromoendoscopy for Detecting Histologic Remission in Ulcerative Colitis**
J. Meserve and S. Singh
See Iacucci M et al on page 1558.
- 1472 Upadacitinib for Crohn's Disease and Ulcerative Colitis Treatment: Hitting the Selective JAKpot**
T. L. Parigi, F. D'Amico, and S. Danese
See Sandborn WJ et al on page 2123, and Sandborn WJ et al on page 2139 in the June 2020 issue.

CLINICAL CHALLENGES AND IMAGES IN GI

- 1475 A Bad Gut Feeling: A Common Disease, an Unlikely Complication, and a Rare Cause**
A. Robateau Colón, B. Rapaka, and X. J. Wang
- 1477 Is It a Crohn's Disease?**
J.-y. Qu and Z. Li
- 1479 A Rare Complication of Pancreatitis**
M. Patterson and C. N. Bernstein
- 1481 Small Bowel Polypoid Lesions: Similar But Different!**
M. Casper, P. R. Stahl, and F. Lammert


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

- 1483 Pancytopenia in a Young Male Patient With Inflammatory Bowel Disease**
 *C. L. Jansson-Knodell, M. J. Walker, and M. Fischer*

REVIEWS AND PERSPECTIVES**Reviews in Basic and Clinical Gastroenterology and Hepatology**

- 1486 The Microbiota-Gut-Brain Axis: From Motility to Mood**
K. G. Margolis, J. F. Cryan, and E. A. Mayer
- 1502 Fibrosis Regression After Eradication of Hepatitis C Virus: From Bench to Bedside**
 *D. C. Rockey and S. L. Friedman*

1521 Proton Pump Inhibitors Reduce Duodenal Eosinophilia, Mast Cells, and Permeability in Patients With Functional Dyspepsia

WWW

L. Wauters, M. Ceulemans, D. Frings, M. Lambaerts, A. Accarie, J. Toth, R. Mols, P. Augustijns, G. De Hertogh, L. Van Oudenhove, J. Tack, and T. Vanuytsel

Proton pump inhibitors reduce not only symptoms but also duodenal inflammation and permeability in functional dyspepsia patients, with eosinophil-reducing effects as a therapeutic mechanism.

1532 Novel Fecal Biomarkers That Precede Clinical Diagnosis of Ulcerative Colitis

WWW

H. J. Galipeau, A. Caminero, W. Turpin, M. Bermudez-Brito, A. Santiago, J. Libertucci, M. Constante, J. A. Raygoza Garay, G. Rueda, S. Armstrong, A. Clarizio, M. I. Smith, M. G. Surette, and P. Bercik, The CCC Genetics, Environmental, Microbial Project Research Consortium, K. Croitoru and E. F. Verdu

A high activity of proteases that may be produced by microbes is detected in feces of patients who go on to develop ulcerative colitis.

1546 Common and Rare Variant Prediction and Penetrance of IBD in a Large, Multi-ethnic, Health System-based Biobank Cohort

CME WWW

K. Gettler, R. Levantovsky, A. Moscato, M. Giri, Y. Wu, N.-Y. Hsu, L.-S. Chuang, A. Sazonovs, S. Venkateswaran, U. Korie, C. Chasteau, UK IBD Genetics Consortium, National Institute of Diabetes, Digestive and Kidney Diseases Inflammatory Bowel Disease Genetics Consortium, R. H. Duerr, M. S. Silverberg, S. B. Snapper, M. J. Daly, D. P. McGovern, S. R. Brant, J. D. Rioux, S. Kugathasan, C. A. Anderson, Y. Itan, and J. H. Cho

IBD prediction was improved when using association data from multiple ancestry groups relative to single population data. We also identified rare population-specific variants which may help lead to targeted treatment.

1558 An International Multicenter Real-Life Prospective Study of Electronic Chromoendoscopy Score PICaSSO in Ulcerative ColitisV WWW
COV E

M. Iacucci, S. C. L. Smith, A. Bazarova, U. N. Shivaji, P. Bhandari, R. Cannatelli, M. Daperno, J. Ferraz, M. Goetz, X. Gui, B. Hayee, G. De Hertogh, M. Lazarev, J. Li, O. M. Nardone, A. Parra-Blanco, L. Pastorelli, R. Panaccione, V. Occhipinti, T. Rath, G. E. Tontini, M. Vieth, V. Villanacci, D. Zardo, R. Bisschops, R. Kiesslich, and S. Ghosh

See editorial on page 1469.

PICaSSO accurately predicts histological inflammatory activity and remission in ulcerative colitis. A PICaSSO score of ≤ 3 predicts favorable outcomes over 12 months.

1570 STRIDE-II: An Update on the Selecting Therapeutic Targets in Inflammatory Bowel Disease (STRIDE) Initiative of the International Organization for the Study of IBD (IOIBD): Determining Therapeutic Goals for Treat-to-Target strategies in IBD

WWW

D. Turner, A. Ricciuto, A. Lewis, F. D'Amico, J. Dhaliwal, A. M. Griffiths, D. Bettenworth, W. J. Sandborn, B. E. Sands, W. Reinisch, J. Schölmerich, W. Bemelman, S. Danese, J. Y. Mary, D. Rubin, J.-F. Colombel, L. Peyrin-Biroulet, I. Dotan, M. T. Abreu, and A. Dignass, on behalf of the International Organization for the Study of IBD

Based on a systematic review of the scientific background and surveys of 89 members of the International Organisation for the Study of Inflammatory Bowel Diseases (IOIBD), 13 recommendations for inflammatory bowel diseases are presented in this STRIDE-II (Selecting Therapeutic Targets in Inflammatory Bowel Disease) initiative. Time-dependent treatment goals are categorized as immediate (symptomatic relief), intermediate (i.e. clinical remission, stool biomarkers) and long-term (i.e. endoscopic healing as well as restoration of quality of life, growth and absence of disability).

1584 Prognostic Factors for Advanced Colorectal Neoplasia in Inflammatory Bowel Disease: Systematic Review and Meta-analysis

www

A. M. Wijnands, M. E. de Jong, M. W. M. D. Lutgens, F. Hoentjen, S. G. Elias, and B. Oldenburg, on behalf of the Dutch Initiative on Crohn and Colitis (ICC)

This comprehensive systematic review and meta-analysis identified 13 risk factors and 5 protective factors for advanced colorectal neoplasia in inflammatory bowel disease.

1599 Gastrointestinal Infection and Risk of Microscopic Colitis: A Nationwide Case-Control Study in Sweden

www

H. Khalili, J. E. Axelrad, B. Roelstraete, O. Olén, M. D'Amato, and J. F. Ludvigsson

Microscopic colitis is a common cause of diarrhea among older adults. In a nationwide study in Sweden, we found that gastrointestinal infections, particularly from *Clostridioides difficile* may be a risk factor for microscopic colitis.

Clinical—Liver**1608 The Association of Histologic and Noninvasive Tests With Adverse Clinical and Patient-Reported Outcomes in Patients With Advanced Fibrosis Due to Nonalcoholic Steatohepatitis**

www

Z. M. Younossi, Q. M. Anstee, V. Wai-Sun Wong, M. Trauner, E. J. Lawitz, S. A. Harrison, M. Camargo, K. Kersey, G. M. Subramanian, R. P. Myers, and M. Stepanova

New non-invasive tests are being found to be good tools to determine the disease progression in patients with advanced NASH.

1620 Association of Genetic Variation With Cirrhosis: A Multi-Trait Genome-Wide Association and Gene-Environment Interaction Study

www

C. A. Emdin, M. Haas, V. Ajmera, T. G. Simon, J. Homburger, C. Neben, L. Jiang, W.-Q. Wei, Q. Feng, A. Zhou, J. Denny, K. Corey, R. Loomba, S. Kathiresan, and A. V. Khera

Using a multi-trait statistical genetics approach, twelve independent common genetic variants that contribute to cirrhosis risk were identified. A polygenic score composed of these variants may have utility in identifying individuals at high risk of progression to cirrhosis.

1634 Exome-Wide Association Study on Alanine Aminotransferase Identifies Sequence Variants in the *GPAM* and *APOE* Associated With Fatty Liver Disease

www

O. Jamialahmadi, R. M. Mancina, E. Ciociola, F. Tavaglione, P. K. Luukkonen, G. Baselli, F. Malvestiti, D. Thuillier, V. Raverdy, V. Männistö, R. M. Pipitone, G. Pennisi, D. Prati, R. Spagnuolo, S. Petta, J. Pihlajamäki, F. Pattou, H. Yki-Järvinen, L. Valenti, and S. Romeo

We identified two novel genetic variants in *GPAM* and *APOE* predisposing to or protecting against FLD, respectively, among European participants from the UK Biobank and in three independent European replication cohorts.

Basic and Translational—Alimentary Tract**1647 The Gastrointestinal Tract Is an Alternative Route for SARS-CoV-2 Infection in a Nonhuman Primate Model**

www

E

L. Jiao, H. Li, J. Xu, M. Yang, C. Ma, J. Li, S. Zhao, H. Wang, Y. Yang, W. Yu, J. Wang, J. Yang, H. Long, J. Gao, K. Ding, D. Wu, D. Kuang, Y. Zhao, J. Liu, S. Lu, H. Liu, and X. Peng

See editorial on page 1467.

The gastrointestinal diseases caused by SARS-CoV-2 are related to the prognosis. Understanding the pathogenesis of SARS-CoV-2 is beneficial to treatment of this disease and control of its transmission.

1662 miR-10b-5p Rescues Diabetes and Gastrointestinal Dysmotility
R. Singh, S. E. Ha, L. Wei, B. Jin, H. Zogg, S. M. Poudrier, B. G. Jorgensen, C. Park, C. F. Ronkon, A. Bartlett, S. Cho, A. Morales, Y. H. Chung, M. Y. Lee, J. K. Park, A. Gottfried-Blackmore, L. Nguyen, K. M. Sanders, and S. Ro

The beneficial effect of the miR-10b-5p in restoring the functional defects in the key cells in regulating insulin production and GI motility provides a potential therapeutic modality for the treatment of both diabetes and GI dysmotility.

1679 Single-Cell Transcriptional Survey of Ileal-Anal Pouch Immune Cells From Ulcerative Colitis Patients

J. C. Devlin, J. Axelrad, A. M. Hine, S. Chang, S. Sarkar, J.-D. Lin, K. V. Ruggles, D. Hudesman, K. Cadwell, and P. Loke

Single cell analysis of immune cells in the colon and pouch of ulcerative colitis patients uncovers similar gene programs which contribute to inflammation and disease severity.

1694 Colonic Epithelial-Derived Selenoprotein P Is the Source for Antioxidant-Mediated Protection in Colitis-Associated Cancer

S. P. Short, J. M. Pilat, C. W. Barrett, V. K. Reddy, Y. Haberman, J. R. Hendren, B. J. Marsh, C. E. Keating, A. K. Motley, K. E. Hill, Anne. E. Zemper, M. K. Washington, C. Shi, X. Chen, K. T. Wilson, J. S. Hyams, L. A. Denson, R. F. Burk, M. J. Rosen, and C. S. Williams

Selenoprotein P, a key antioxidant enzyme reduced in ulcerative colitis and produced by the colon epithelium, protects against genomic instability and colitis-associated cancer.

1709 Inflamed Ulcerative Colitis Regions Associated With MRGPRX2-Mediated Mast Cell Degranulation and Cell Activation Modules, Defining a New Therapeutic Target

E. Chen, L.-s. Chuang, M. Giri, N. Villaverde, N.-y. Hsu, K. Sabic, S. Joshowitz, K. Gettler, S. Nayar, Z. Chai, I. L. Alter, C. C. Chasteau, U. M. Korie, S. Dzedzik, T. H. Thin, A. Jain, A. Moscati, G. Bongers, R. H. Duerr, M. S. Silverberg, S. R. Brant, J. D. Rioux, I. Peter, L. P. Schumm, T. Haritunians, D. P. McGovern, Y. Itan, and J. H. Cho

Inflamed ulcerative colitis regions demonstrate G-protein coupled receptor (GPCR)-mediated degranulation of mast cells. The identification of a loss-of-function, protective GPCR allele defines a new therapeutic target for ulcerative colitis.

Basic and Translational—Liver

1725 Integrated Multiomics Reveals Glucose Use Reprogramming and Identifies a Novel Hexokinase in Alcoholic Hepatitis

V. Massey, A. Parrish, J. Argemi, M. Moreno, A. Mello, M. García-Rocha, J. Altamirano, G. Odena, L. Dubuquoy, A. Louvet, C. Martinez, A. Adrover, S. Affò, O. Morales-Ibanez, P. Sancho-Bru, C. Millán, E. Alvarado-Tapias, D. Morales-Arreaez, J. Caballería, J. Mann, S. Cao, Z. Sun, V. Shah, A. Cameron, P. Mathurin, N. Snider, C. Villanueva, T. R. Morgan, J. Guinovart, R. Vadigepalli, and R. Bataller

Alcoholic hepatitis (AH) leads to metabolic reprogramming of the liver, including dysregulation of glucose metabolism. We found a unique glucose metabolomics profile in AH patients, with a massive up-regulation of HKDC1 in hepatocytes, which is associated with worse clinical outcomes.

1741 Hepatic Stellate Cells in Hepatocellular Carcinoma Promote Tumor Growth Via Growth Differentiation Factor 15 Production

Y. Myojin, H. Hikita, M. Sugiyama, Y. Sasaki, K. Fukumoto, S. Sakane, Y. Makino, N. Takemura, R. Yamada, M. Shigekawa, T. Kodama, R. Sakamori, S. Kobayashi, T. Tatsumi, H. Suemizu, H. Eguchi, N. Kokudo, M. Mizokami, and T. Takehara

In coexistence with hepatoma cells, hepatic stellate cells undergo autophagy with hepatoma cells and secrete Growth Differentiation Factor 15, which promotes hepatoma cell growth.

Basic and Translational—Pancreas

- 1755** **mTORC1 and mTORC2 Converge on the Arp2/3 Complex to Promote Kras^{G12D}-Induced Acinar-to-Ductal Metaplasia and Early Pancreatic Carcinogenesis**
Y. Zhao, B. Schoeps, D. Yao, Z. Zhang, K. Schuck, V. Tissen, C. Jäger, A. M. Schlitter, R. van der Kammen, C. Ludwig, J. G. D'Haese, S. Raulefs, N. Maeritz, S. Shen, X. Zou, A. Krüger, J. Kleeff, C. W. Michalski, H. Friess, M. Innocenti, and B. Kong

The Arp2/3 complex is a critical mediator of oncogenic Kras-driven ADM and PDAC initiation. The Arp2/3 complex functions downstream of mTORC1 and mTORC2 in acinar cells with oncogenic Kras mutations.

- 1771** **Zinc-Dependent Regulation of ZEB1 and YAP1 Coactivation Promotes Epithelial-Mesenchymal Transition Plasticity and Metastasis in Pancreatic Cancer**
M. Liu, Y. Zhang, J. Yang, H. Zhan, Z. Zhou, Y. Jiang, X. Shi, X. Fan, J. Zhang, W. Luo, K.-M. A. Fung, C. Xu, M. S. Bronze, C. W. Houchen, and M. Li

This study defines a novel ZIP4-miR-373-LATS2-ZEB1/YAP1-ITGA3 signaling pathway that mediates pancreatic cancer metastasis and EMT plasticity. The findings are highly translational to develop new personalized therapy for pancreatic cancer.

Basic and Translational—Biliary

- 1784** **Altered Gut Microbial Metabolism of Essential Nutrients in Primary Sclerosing Cholangitis**
M. Kummen, L. B. Thingholm, M. C. Rühlemann, K. Holm, S. H. Hansen, L. Moitinho-Silva, T. Liwinski, R. Zenouzi, C. Storm-Larsen, Ø. Middtun, A. McCann, P. M. Ueland, M. L. Høvik, M. Vesterhus, M. Trøseid, M. Laudes, W. Lieb, T. H. Karlsen, C. Bang, C. Schramm, A. Franke, and J. R. Hov

The function of gut bacteria are different in patients with PSC and healthy persons, especially functions related to vitamin B synthesis and essential nutrients, which could potentially be linked to PSC disease progression.

CONTINUING MEDICAL EDUCATION (CME)/MOC ACTIVITIES

- e19** **CME Exam 1: Pancytopenia in a Young Male Patient with Inflammatory Bowel Disease**
- e21** **CME Exam 2: Common and Rare Variant Prediction and Penetrance of IBD in a Large, Multi-ethnic, Health System-based Biobank Cohort**

CLINICAL PRACTICE GUIDELINES

- 1799** **AGA Clinical Practice Guidelines on Intra-gastric Balloons in the Management of Obesity**
T. Muniraj, L. W. Day, L. M. Teigen, E. Y. Ho, S. Sultan, P. Davitkov, R. Shah, and M. H. Murad
- 1809** **Clinical Decision Support Tool: Intra-gastric Balloons in the Management of Obesity**
American Gastroenterological Association
- 1810** **Spotlight: Intra-gastric Balloons in the Management of Obesity**
R. Shah, P. Davitkov, B. K. Abu Dayyeh, M. Saumoy, S. Sultan, and M. H. Murad
- 1811** **AGA Technical Review on Intra-gastric Balloons in the Management of Obesity**
R. Shah, P. Davitkov, B. K. Abu Dayyeh, M. Saumoy, and M. H. Murad

CLINICAL PRACTICE UPDATE

- 1831** **AGA Clinical Practice Update on the Management of Refractory *Helicobacter pylori* Infection: Expert Review**
S. C. Shah, P. G. Iyer, and S. F. Moss

BRIEF COMMUNICATIONS**1842 COVID-19 Pediatric Patients: Gastrointestinal Symptoms, Presentations, and Disparities by Race/Ethnicity in a Large, Multicenter US Study***Y. Ashktorab, A. Brim, A. Pizuorno, V. Gayam, S. Nikdel, and H. Brim***1845 Recent Trends in the Global Burden of Hepatitis B Virus: 2007–2017***J. M. Paik, Y. Younossi, L. Henry, A. Mishra, and Z. M. Younossi***1847 Abnormal Esophageal Distension Profiles in Patients With Functional Dysphagia: A Possible Mechanism of Dysphagia***R. K. Mittal, K. Muta, M. Ledgerwood-Lee, V. Gandu, and A. Zifan***1850 A High Percentage of Early-age Onset Colorectal Cancer Is Potentially Preventable***P. P. Stanich, K. R. Pelstring, H. Hampel, and R. Pearlman***1853 Multifocal Colorectal Cancer—Do Intraluminal Metastases Occur?***F. Simmer, R. L. A. van der Linden, M. J. L. Ligtenberg, B. Ylstra, R. S. van der Post, and I. D. Nagtegaal, on behalf of the Multifocal Colorectal Cancer Study Group***1856 Ranitidine Use and Cancer Risk: Results From UK Biobank***E. D. Kantor, K. O'Connell, M. Du, R. B. Mendelsohn, P. S. Liang, and L. Z. Braunstein***1860 Colorectal Cancer Mortality in Young Adults Is Rising in the United States, Canada, United Kingdom, and Australia but Not in Europe and Asia***C. Santucci, P. Boffetta, F. Levi, C. La Vecchia, E. Negri, and M. Malvezzi***1863 Increasing Prevalence of Polyps > 9 mm in Young Adults Aged 40 to 59 Years Undergoing Colonoscopy From 2002 to 2014***B. Yip, J. Holub, and D. Lieberman***SELECTED SUMMARIES****1866 Farnesoid X Receptor Variant: A Sex-based Determinant of Crohn's Disease Progression***L. G. Rabinowitz, M. K. Kim, and S.-Y. Wong***1867 Steering a Course through the COVID-19 Pandemic: Should the SECURE-IBD Registry Influence Prescribing for Patients with Inflammatory Bowel Disease?***C. F. Gomes, T. Chapman, J. Satsangi, and J. Torres***CORRESPONDENCE****1871 Increased Amylase and Lipase in Patients With COVID-19 Pneumonia: Don't Blame the Pancreas Just Yet!***E. de-Madaria, K. Siau, and K. Cárdenas-Jaén***1872 Mild Pancreatic Enzyme Elevations in COVID-19 Pneumonia: Synonymous With Injury or Noise?***A. Ashok, M. Faghieh, and V. K. Singh***1872 Reply***H. Wang, H. Wang, F. Wang, and Q. Zhao*

- 1873 The Courage to Return to Everyday Life at the Time of COVID-19: The Point of View of Inflammatory Bowel Disease Patients Needing Endoscopy**
F. Mocciano, D. Scimeca, and R. Di Mitri
- 1874 The Pi*^{MZ} Allele in Alpha-1 Antitrypsin Increases Liver-Related Outcomes in a Population-Based Study**
P. K. Luukkonen, V. Salomaa, and F. Åberg
- 1875 Reply**
C. V. Schneider, K. Hamesch, and P. Strnad
- 1877 Could Patients With Inflammatory Bowel Disease Treated With Immunomodulators or Biologics Be at Lower Risk for Severe Forms of COVID-19?**
F. S. Macaluso and A. Orlando
- 1878 Reply**
I. Rodríguez-Lago, H. Alonso-Galán, and J. L. Cabriada
- 1880 Roles of Clinical Pharmacists in Caring for Patients With Inflammatory Bowel Disease During COVID-19**
S. Bhat, F. A. Farraye, and A. Moss
- 1881 Reply**
F. D'Amico, L. Peyrin-Biroulet, and S. Danese
- 1881 The Noticeable Crosslink between miR-122 and Metabolic Dysfunction**
H.-H. Chung
- 1882 Reply**
C. Chai, H. Giladi, and E. Galun
- 1883 Therapeutic Decisions in Inflammatory Bowel Disease in the SARS-Cov-2 Pandemic**
O. Brain and J. Satsangi
- 1884 Aminosalicylates and COVID-19: Facts or Coincidences?**
F. Magro, C. C. Dias, and M. Morato
- 1885 The Course of COVID-19 in Inflammatory Bowel Disease: Protective Role of TNF Antagonists**
M. Cappello, A. Busacca, and L. Guida
- 1886 Reply**
E. J. Brenner, R. C. Ungaro, J.-F. Colombel, and M. D. Kappelman
- 1887 Gastrointestinal Involvements in Children With COVID-related Multisystem Inflammatory Syndrome**
T.-H. Chen, W.-T. Kao, and Y.-H. Tseng
- 1888 Reply**
J. Miller, M. Martinez, and K. Margolis

- 1889 The Dilemma in the Management of Gastrointestinal Bleeding During the COVID-19 Pandemic**
E. J. T. Aguila, I. H. Y. Cua, and N. T. V. Raymundo
- 1890 Reply**
J. Kim, J. B. Doyle, and B. Lebowhl
- 1891 Correlation Between Liver Function Tests Abnormalities and Interleukin-6 Serum Levels in Patients With SARS-CoV-2 Infection**
F. R. Ponziani, A. Nesci, F. Del Zompo, F. Santopaolo, M. Pompili, and A. Gasbarrini
- 1893 Impact of Preexisting Chronic Liver Disease on the Outcome of Patients With COVID-19 Disease**
N. Verma, A. Duseja, and V. Singh
- 1894 Acute-on-Chronic Liver Failure: Possibly the Main Culprit of Increased Mortality in COVID-19 Patients with Liver Disease**
M. U. Kahn, K. Mushtaq, and S. R. Alkaabi
- 1895 Reply**
S. Singh and A. Khan
- 1896 COVID-19, ACEI/ARBs, and Gastrointestinal Symptoms: The Jury Is Still Out on the Association**
T. L. Parigi, E. Vespa, and N. Pugliese
- 1897 Reply**
Y. Qiu, N.-D. Tan, and R. Mao
- 1898 Association Between Famotidine Use and COVID-19 Severity in Hong Kong: A Territory-wide Study**
K. S. Cheung, I. F. N. Hung, and W. K. Leung
- 1899 What Underlies the Benefit of Famotidine Formulations Used During COVID-19?**
V. P. Singh, B. El-Kurdi, and C. Rood
- 1900 Reply**
D. E. Freedberg, T. C. Wang, and J. A. Abrams
- 1901 What Is the Incidence of COVID-19 in Patients With IBD in Western Countries?**
C. Taxonera, C. Alba, and D. Olivares
- 1902 Reply**
J. Gubatan, S. R. Sinha, and A. Habtezion

- 1903 The Adherence to Infusible Biologic Therapies in Inflammatory Bowel Disease Patients during the COVID-19 Pandemic: Is It Really a Problem?**
B. Barberio, F. Zingone, L. Bertani, and E. Savarino
- 1904 Reply**
N. Khan and Y.-X. Yang
- 1904 Corrections**

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