Participating in the Webinar

All attendees will be muted and will remain in Listen Only Mode.

Type your questions here so that the moderator can see them. Not all questions will be answered but we will get to as many as possible.
How to Receive CME and MOC Points

LIVE VIRTUAL GRAND ROUNDS WEBINAR
ACG will send a link to a CME & MOC evaluation to all attendees on the live webinar.

ABIM Board Certified physicians need to complete their MOC activities by December 31, 2021 in order for the MOC points to count toward any MOC requirements that are due by the end of the year. No MOC credit may be awarded after March 1, 2022 for this activity.

MOC QUESTION

If you plan to claim MOC Points for this activity, you will be asked to: Please list specific changes you will make in your practice as a result of the information you received from this activity.

Include specific strategies or changes that you plan to implement.
THESE ANSWERS WILL BE REVIEWED.
ACG Virtual Grand Rounds
Join us for upcoming Virtual Grand Rounds!

Week 11, 2021
Managing Complications of GI Endoscopy
Shivangi T. Kothari, MD, FACG
March 18, 2021 at Noon Eastern

Week 12, 2021
Colorectal Cancer Screening and Prevention in the US and Worldwide: Lessons from the COVID-19 Pandemic
David A. Greenwald, MD, FACG
March 25, 2021 at Noon Eastern

Visit gi.org/ACGVGR to Register

ACG VIRTUAL GRAND ROUNDS
CAREER EDITION
Networking and Social Media
Wednesday, March 24, 2021 at 8:30 p.m. EST
Aline Charabaty, MD  Mohammad Bilal, MD
Hala Fatima, MD  Prashant S. Kedia, MD, FACG

Register: gi.org/ACGVGR  #GIHomeschooling
SPECIAL EDITION – COVID-19 Vaccine Update

Speakers will explain the data behind the various vaccines, clinical recommendations, allergy and safety recommendations, and describe COVID-19 vaccine special issues in underrepresented minorities.

MONDAY, MARCH 29th, 8 to 9:30 PM EDT

Faculty
- Freddy Caldera, DO, MS
- Francis A. Faraye, MD, MSc, MACG
- Sophie M. Balzora, MD, FACG

Moderator
- ACG President David A. Greenwald, MD, FACG

Disclosures:

Speaker:
Elena A. Ivanina, DO, MPH
Dr. Ivanina has no conflicts of interest related to this talk.

Moderator:
William D. Chey, MD, FACG
Board of Directors: GI Health Foundation, GI OnDemand, International Foundation of GI Disorders, Rome Foundation
Consultant: Allakos, Allergan, Alnylam, Biomerica, IM Health, Ironwood, Phathom, QOL Medical, Redhill, Salix/Valeant, Takeda/Shire
Patent Holder/Intellectual Property: Rectal Expulsion Device (patent shared by inventor and University of Michigan)
Research Grant: Biomerica, Commonwealth Diagnostics International, QOL Medical (clinical trial), Salix, Vibrant
Stockholder: Gastro Girl, Modify Health, Ritter
How to be an Integrative Gastroenterologist

Elena A. Ivanina, DO, MPH
Assistant Professor, Zucker School of Medicine at Hofstra/Northwell
Assistant Program Director, Lenox Hill Gastroenterology Fellowship
Lenox Hill Hospital of Northwell Health
eivanina@northwell.edu
The Physician-Patient Disconnect

• Survey of 2,027 adults

• 90% agreed that health means more than treating sickness

• Communication gap
  • 50% discuss exercise
  • 42% discuss diet
  • 40% discuss sleep
  • 36% discuss mental health
  • 10% discuss spiritual health

• 53% wished their physician would discuss non-medical therapies
  • Nutrition, acupuncture, meditation

Harris Poll Sept 2018
Complementary & alternative medicine (CAM) in cancer

- Adult outpatient cancer patients at M.D. Anderson Cancer Center between 12/1997 - 6/1998 invited to participate in a questionnaire about CAM. N=882.
  - 77% expected CAM to improve QOL
  - 71% expected CAM to boost immune system
  - 63% expected CAM to prolong life
  - 44% expected CAM to relieve symptoms
  - 38% expected CAM to cure their disease

Richardson et al. Journal of Clinical Oncology 18, no. 13 (July 01, 2000) 2505-2514

Use of Alternative Medicine for Cancer and Its Impact on Survival

Overall Survival

Colorectal Cancer

American College of Gastroenterology
The Integrative approach

**Alternative**

Patient → CAM

**Complementary**

Patient → CAM
→ Conventional

**Integrative**

Patient → CAM
→ Conventional


Peregoy et al. Regional variation in use of complementary health approaches by U.S. adults. NCHS Data Brief. 2014;(146):1-8

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How to be an Integrative Gastroenterologist

1. **Patient partnership**
2. Practitioner referral partnership
3. Work-up
4. Treatment
Virtual Grand Rounds

Patient Partnership


Francisconi et al. Gastroenterology 2016;150:1344–1354
Patient Partnership

- Develop trust, empathy and understanding
- Treat the person as a whole, not a disease
- Try not to be dismissive
  - Patient symptoms, “it’s all in your head”
  - Consider diagnoses made by alternative practitioners
- Discuss risk factors, root causes
- Shared decision-making
  - Ask and align with patient’s preferences for treatment modalities
  - Respect, empower, educate and encourage patient to play active role in their care

How to be an Integrative Gastroenterologist

1. Patient partnership
2. **Practitioner referral partnership**
3. Work-up
4. Treatment
Practitioner referral partnership

• Survey administered to patients attending GI clinic at a county hospital January - May 2019. N=60.

• Forty-nine (82%) respondents were female, median age was 43 years old.

• Twelve (20%) subjects reported consultation with a naturopath or herbalist in the past year for GI symptoms.
  • 92% female
  • Most common symptoms for referral = abdominal pain, nausea, constipation
  • Most common dx given= IBS, food allergies, leaky gut, SIBO (25% for each)
  • Seven (58%) subjects received herbal medications

Bushyhead et al. AJG: October 2019 - Volume 114 - Issue - p S298

Practitioner referral partnership

• Acupuncturists/herbalists, naturopaths, functional medicine practitioners, chiropractors, nutritionists

• Recognize and respect relationship of alternative practitioner with patient

• Communicate, share information and work together

• Have an open mind, but also back up decisions with evidence-based medicine

• Partner on social media

• Take a course in a type of CAM
Practitioner referral partnership

Treatment Options for GERD

GERARD E. MULLEN, MD, MS, CNSP
GI Advanced Practice Module
Livestream PDT
October 2020

How to be an Integrative Gastroenterologist

1. Patient partnership
2. Practitioner referral partnership
3. Work-up
4. Treatment
Work-up

- History
  - Nutrition, food diary
  - Supplements/herbs, CAM use
  - Exercise
  - Sleep
  - Stress + coping mechanisms
  - Relaxation
  - Relationships + community
  - Trauma
  - Toxins (environmental, occupational)
  - Genetic/family history

- Physical
  - Thorough - skin, hair, nails, mouth/tongue. Rectal exam.
Integrative differential diagnosis

• Red flags? First think about your standard DDX (cancer, IBD and autoimmune conditions, infection, toxins/NSAIDs...)

• Then...
  1. Food-related conditions
  2. SIBO/IMO
  3. SIFO
  4. Leaky gut
  5. Dysbiosis and microbiome testing
  6. Mast cell activation syndrome

1. Food-related conditions

• Gluten: celiac, non-celiac gluten sensitivity, gluten allergy
• Carbohydrate malabsorption: Lactose, fructose
• Congenital sucrase-isomaltase deficiency
• Food allergies
Gluten: Good tests


Gluten: Bad tests
Table 8. Examples of claims of diagnosis, treatment, and efficacy

<table>
<thead>
<tr>
<th>Claim type</th>
<th>Claim</th>
<th>Client</th>
<th>Client website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>&quot;An unmeasured diagnostic test for celiac disease&quot;</td>
<td>celiac.com</td>
<td>diagnostic.celiac.com</td>
</tr>
<tr>
<td>Treatment</td>
<td>&quot;Whole body scan for celiac disease&quot;</td>
<td>celiac.com</td>
<td>diagnostic.celiac.com</td>
</tr>
<tr>
<td>Efficacy</td>
<td>&quot;A successful therapy for celiac disease&quot;</td>
<td>celiac.com</td>
<td>diagnostic.celiac.com</td>
</tr>
</tbody>
</table>

Watch out for...

### Emerging eating disorders relevant to gastroenterologists

<table>
<thead>
<tr>
<th>Eating disorder</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulimia Nervosa</td>
<td>Uncontrolled eating and purging behavior.</td>
</tr>
<tr>
<td>Anorexia Nervosa</td>
<td>Restriction of food intake and fear of gaining weight.</td>
</tr>
<tr>
<td>Binge Eating</td>
<td>Recurrent episodes of consuming large amounts of food.</td>
</tr>
</tbody>
</table>

Chey et al. Am J Gastroenterol 2019;114:201–203

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### 2. SIBO/IMO

3. SIFO

Small intestinal bacterial and fungal overgrowth

Abstract

Millions of patients in the United States and around the world suffer from symptoms of irritable bowel syndrome, including abdominal pain, bloating, diarrhea, and constipation. These symptoms can be exacerbated by factors such as dietary alterations, stress, and medications. Small intestinal bacterial overgrowth (SIBO) and small intestinal fungal overgrowth (SIFO) are conditions that have been associated with these symptoms. Both conditions are characterized by an increase in the bacterial or fungal population in the small intestine, leading to an increased production of gas and malabsorption of nutrients.


Figure 1. Diagram of the procedure for duodenal aspiration, specimen collection, and ultrasound. The technique involves the insertion of a thin needle under ultrasound guidance, followed by the aspiration of fluid and the collection of specimens for further analysis.

4. Leaky gut (Increased intestinal permeability)

Fritscher-Ravens et al. Gastroenterology 2014;147:1012–1020
Wallace et al. Gastroenterology 2014;147:952–968

American College of Gastroenterology
5. Dysbiosis and Microbiome testing

Microbiome 101: Studying, Analyzing, and Interpreting Gut Microbiome Data for Clinicians

- **Regional changes**: Microbiome varies dramatically along the length of the gut, with stomach + small intestine essentially entirely distinct from colon.

- **Fluidity**: The microbiome has a fluid, constantly changing profile.

- **Accuracy**: Testing services that use proprietary protocols produce different results, even on the same biological specimens.

- **Data insufficiency**: Lack of standard parameters and reference data for comparison.

Allaband et al. Clinical Gastroenterology and Hepatology 2019;17:218–230
6. Mast cell activation syndrome (MCAS)

- Heartburn + nausea may be caused by gastric acid hypersecretion from parietal cells stimulated by histamine
  - Histamine + lipid-derived mast cell mediators (leukotrienes) contribute to abd pain, diarrhea

References:
- Pichetshote et al. Am J Gastroenterol. 2019 May; 114(5):726-732

6. Mast cells in IBS

References:
- Philpott et al. Asia Pac Allergy 2011;1:36-42
How to be an Integrative Gastroenterologist

1. Patient partnership
2. Practitioner referral partnership
3. Workup
4. **Treatment**

Treatment

- Medications
- Nutrition
- Behavioral modification and therapy
- Natural supplements - herbs, vitamins, minerals, probiotics
- Mind-body medicine - yoga, hypnosis, meditation, biofeedback, relaxation practices, acupuncture, pilates, Tai Chi
- Osteopathy
- Other - Ayurveda, TCM (traditional Chinese medicine)
Integrated care model

- RCT of comprehensive self-management intervention. N=188.
  - 1. Education
  - 2. Nutritional counseling (fiber, fluids, balanced diet, triggers, size/timing, meal planning, eating slowly and relaxed)
  - 3. Relaxation training (abdominal breathing before each meal, progressive muscle relaxation, body scan)
  - 4. CBT, cognitive restructuring

- GI symptom score (abdominal pain/discomfort, gas) and QOL significantly improved vs usual care (p<0.001)

- High adherence (94%) persisted in 1 year

Patients 18–80 with Rome IV criteria-defined functional GI disorders randomly assigned (1:2) to receive GI-only standard care or multidisciplinary clinic care x 9 months

- 144 in mITT analysis (n=46 standard-care group; n=98 multidisciplinary-care group)

- 57% in standard-care group and 84% in multidisciplinary-care group had global symptom improvement (p=0.00045)

- Cost per successful outcome was higher in standard-care group than multidisciplinary-care group
Treatment approach

- Disorders of gut-brain interaction (DGBI)
- IBD
### Table 4. CAM therapies for irritable bowel syndrome (IBS)

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Proposed mechanism of action</th>
<th>Adverse effects</th>
<th>Does it work?</th>
<th>Cost</th>
<th>Evidence</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peppers</td>
<td>Gastrointestinal stimulation and increased bowel tone</td>
<td>Abdominal bloating, decreased appetite, and diaphoresis (81)</td>
<td>Commonly available, alleges very (over the counter)</td>
<td>Unlicensed</td>
<td>European meta-analysis concluded that there was moderate improvement in symptoms of IBS-D, O, and IBS-C in adults, and that effect was dose-dependent (97)</td>
<td>Weak</td>
</tr>
<tr>
<td>Psyllium Husk</td>
<td>Peristaltic activity and increased stool weight</td>
<td>Constipation, abdominal bloating, and flatulence (81)</td>
<td>Commonly available, alleges very (over the counter)</td>
<td>Unlicensed</td>
<td>A reduction of IBS symptoms that was suggestive of a beneficial effect was found in patients given psyllium or placebo (43)</td>
<td>Weak</td>
</tr>
<tr>
<td>Gasparia</td>
<td>The colonic fermentation responsible for gastrointestinal effects</td>
<td>Diarrhea, bloating, and flatulence (82)</td>
<td>Rarely available, alleges very (over the counter)</td>
<td>Unlicensed</td>
<td>Gasparia demonstrated a statistically significant improvement in symptoms of both the treatment and placebo groups (56). Gasparia demonstrated that the effects of gasparia were not significantly different from those of placebo, with respect to the reduction of abdominal pain and flatulence in patients with IBS-D (43). In addition, gasparia showed increased bowel weight and reduced symptoms of IBS-C (27). The hypothesis that gasparia has a beneficial effect on IBS-C (43), has not been systematically evaluated</td>
<td>Weak</td>
</tr>
<tr>
<td>Aloe Vera</td>
<td>Can prevent oxidative stress and induce growth</td>
<td>Diarrhea, bloating, and flatulence (82)</td>
<td>Commonly available, alleges very (over the counter)</td>
<td>Unlicensed</td>
<td>ALC did not demonstrate improvement in IBS-D, but significant symptoms improvement was demonstrated in IBS-C compared to placebo. In a 12-week, double-blind, randomized, controlled study, Aloe vera was significantly better than placebo in reducing abdominal pain (95). A further study showed that Aloe vera was significantly better than placebo in reducing abdominal pain (95).</td>
<td>Weak</td>
</tr>
<tr>
<td>Milk Thistle</td>
<td>Prevents liver inflammation and protects against damage</td>
<td>Diarrhea, bloating, and flatulence (82)</td>
<td>Commonly available, alleges very (over the counter)</td>
<td>Unlicensed</td>
<td>Milk thistle has been shown to improve symptoms of IBS-C and IBS-D in a randomized controlled trial (90).</td>
<td>Weak</td>
</tr>
</tbody>
</table>
Virtual Grand Rounds

L-glutamine in PI-IBS

- Randomized, double-blind, placebo-controlled trial to assess glutamine in IBS-D with increased intestinal permeability after enteric infection (n=54 glutamine, n=52 placebo)
- Glutamine powder 5g PO TID or placebo for 8 weeks
- Primary end point: reduction of ≥50 points on IBS-SS
  - 43/54 (80%) in glutamine group
  - 3/52 (6%) in placebo group (p<0.0001)
- Glutamine also:
  - Reduced daily bowel movement frequency (p<0.0001)
  - Improved stool form on the Bristol Stool Scale (p<0.0001)
  - Normalized intestinal hyperpermeability (p<0.0001)

Table 5: Adverse events

<table>
<thead>
<tr>
<th></th>
<th>Glutamine (n=54)</th>
<th>Placebo (n=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Adverse event</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td>1 (1.9)</td>
<td>0</td>
</tr>
<tr>
<td>Diarrhea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diarrhea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total adverse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>event</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>


Integrative plan for PI-IBS

- Soluble fiber (psyllium husk starting with 1tsp daily and increasing to 1tbsp 1-2x daily), enteric-coated peppermint oil (2 capsules 30 min before each meal), L-glutamine 5g TID x2mo, Rifaximin 550mg TID x2weeks
- Referral to RD for low FODMAP
- Referral to therapist for CBT, gut-directed hypnotherapy
- Recommendations for mindfulness meditation app, sleep app, yoga, acupuncture
- Osteopathic manipulative treatment
Treatment approach

- Disorders of gut-brain interaction (DGBI)
- IBD

IBD: CAM

<table>
<thead>
<tr>
<th>General Recommendations</th>
<th>Summary of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulcerative colitis</td>
<td>Active microbial translocation: positive evidence supporting VSL#3, positive evidence for maintenance of remission, moderate evidence for induction of remission with antibiotics (1 RCT)[31]</td>
</tr>
<tr>
<td>Crohn's disease</td>
<td>May decrease CDM and CDP (2 RCT)[32]</td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td>Evidence indicates improvements in QoL, anxiety, and depression (1 RCT)</td>
</tr>
<tr>
<td>Crohn's disease</td>
<td>Can consider as a complement to conventional therapy for improving QoL, anxiety, and depression</td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td>Can consider as a supplement to conventional therapy for improving symptoms</td>
</tr>
<tr>
<td>Crohn's disease</td>
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</tr>
</tbody>
</table>

Lin et al. Gastroenterology & Hepatology Volume 14, Issue 7 July 2018
IBD: Diet

<table>
<thead>
<tr>
<th>Dietary component</th>
<th>5-ASA (60 mg/kg, 30% of daily dose)</th>
<th>VSL#3 (900 billion bacteria/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits</td>
<td>Increase in dietary fiber content in the form of soluble fiber.</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>A variety of fruits and vegetables, especially those high in fiber.</td>
<td></td>
</tr>
<tr>
<td>Whole grains</td>
<td>Increase the intake of whole grains.</td>
<td></td>
</tr>
<tr>
<td>Dietary fats</td>
<td>Limit the intake of saturated and trans fats.</td>
<td></td>
</tr>
<tr>
<td>Alcohol beverages</td>
<td>Limit alcohol consumption.</td>
<td></td>
</tr>
<tr>
<td>Egg white/egg yolk</td>
<td>Limit the intake of egg white and egg yolk.</td>
<td></td>
</tr>
</tbody>
</table>

**Integrative plan for mild ulcerative proctitis**

- Induction of remission: Rectal 5-ASA 1 g/d, VSL#3 900 billion bacteria/day, Curcumin 3 g/day
  - Maintenance of remission: Rectal 5-ASA 1 g/d, Curcumin 1g BID
- Referral to RD and evidence-based recommendations:
  - Limit intake of red + processed meat, dairy fat and processed dairy with maltodextrins + emulsifiers, myristic acid, maltodextrin-containing foods + artificial sweeteners, carboxymethylcellulose and polysorbate-80, processed foods with carrageenan, titanium dioxide and sulfites
  - Avoid unpasteurized dairy, trans fat
  - Increase dietary omega-3 fatty acids (DHA and EPA) from marine fish
  - Low alcohol consumption and avoid alcohols with high levels of sulfites (beer, wine)
- Referral to therapist for CBT, gut-directed hypnotherapy
- Individually tailored exercise regimen
- Recommendations for mindfulness meditation app, sleep app, yoga, acupuncture
Final thoughts

• **First, do no harm.**
  - Supplements not regulated by the FDA
  - Side effects including CAM-induced liver injury
    - 253 subjects with idiosyncratic DILI
      - 41 (16%) CAM, 210 (84%) prescription medicine

• Stay up-to-date and knowledgeable.

• Know the evidence. Draw the line.
  - Ex. Colonic hydrotherapy

Lee et al. ACG Case Reports Journal7(1):e00292, January 2020

Thank you!

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Instagram: gut_love
Twitter @elenaAivanina
Questions?

Speaker:
Elena A. Ivanina, DO, MPH

Moderator:
William D. Chey, MD, FACG

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