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Listen using your computer audio. A headset is recommended but not required.

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.

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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, 2020 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, 2021 for this activity.

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Include specific strategies or changes that you plan to implement.

ACG Virtual Grand Rounds

Join us for upcoming Virtual Grand Rounds!

Week 3: Update on Managing Your Pregnant IBD Patient
Sunanda V. Kane, MD, MSPH, FACG
April 9, 2020 at Noon EDT

Week 4: Hepatitis B: An Update
Nancy S. Reau, MD, FACG
April 16, 2020 at Noon EDT

Visit gi.org/ACGVGR to Register
Disclosures:

Presenter:
Brian E. Lacy, MD, PhD, FACG
Dr. Lacy has no relevant financial relationships to disclose.

Moderator:
Brooks D. Cash, MD, FACG
Consultant: Allergan, Salix, Takeda, QOL Medical
Speakers Bureau: Allergan, Salix, Takeda, QOL Medical

Chronic Abdominal Pain & Bloating

ACG Virtual Grand Rounds
April 2, 2020

Brian E. Lacy, PhD, MD, FACG
Senior Associate Consultant
Mayo Clinic, Jacksonville
Objectives

• Define chronic abdominal pain and bloating
• Review the epidemiology of chronic abdominal pain and bloating
• Understand the most common causes of chronic abdominal pain
• Appreciate the complex pathophysiology of these two disorders
• Identify key questions to make the diagnosis
• Recognize available treatment options

Chronic Abdominal Pain

• Abdominal pain present for > 3 months duration
• Intensity, frequency, severity, location are not factored into the definition
Epidemiology, Natural History & Impact

- Incidence, prevalence, natural history – all poorly understood
- Estimates of chronic abdominal pain approach 30% of U.S. adults
- The most common cause of CAP in the United States is IBS
- Functional dyspepsia and functional constipation (CIC) are the next 2 most common causes
- Impact: Associated with co-morbid conditions
  - Depression
  - Fibromyalgia
  - Opioid addiction
- Reduces patients’ quality of life
- Increases health care resources

Pathophysiology of CAP

- Inflammatory
- Ischemic
- Autoimmune/CTD related
- Obstructive
- Medication related
- Referred
- Metabolic
- Genetic
- Psychogenic/Factitious
- Neuropathic (diabetes, post-viral, post-surgical, CIP, visceral hypersensitivity)
Visceral Hypersensitivity: Defined

- “An increased sensitivity to different stimuli within the GI tract”
- “Reduced pain thresholds with normal stimuli”
- “Altered sensation in response to physiological stimuli”
- “Abnormal abdominal pain perception to intestinal distension”

Abdominal pain: key concepts

- Allodynia
  - Noxious response to an innocuous process
- Hyperalgesia
  - A decrease in the stimulus intensity required to elicit or maintain nociceptor activation
  - An exaggerated response to a noxious stimulus
- Hypervigilance
  - Inappropriate focus on symptoms
Pathophysiology of Functional Abdominal Pain Syndrome (FAP/CAP)

Genetic Predisposition

**INSULT(s)**

Symptom generation

- DEPRESSION → STRESS
- POOR COPING SKILLS → ANXIETY
- CATASTROPHIZATION → ABUSE
- POOR SOCIAL SUPPORT → SOMATIZATION

Worsening of Symptoms

---

Pathophysiology of CAP

**Predisposing Factors**

- Early trauma
- Health-care seeking behavior
- Abuse
- Genetics
- Environmental exposures

**Precipitating Factors**

- Infections
- Drug abuse
- Somatic illnesses
- Unresolved abuse
- Unresolved interpersonal difficulties

**Perpetuating Factors**

- Helplessness
- Vulnerability
- Anxiety
- Catastrophizing
- Low self-esteem
- Depression

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American College of Gastroenterology
CAP: Diagnostic evaluation

• Start slowly
• Take a great history
  • Dietary, medical, surgical, psychological
• Evaluate for alarm features
• The physical examination is important

Key Questions to aid in Diagnosis

• Age at onset of symptoms
• Duration of each event (onset; offset)
• Location of the pain
• Characterization of the pain
• Relationship to meals, defecation, urination
• Co-existing symptoms
• Co-existing illnesses
• Prior tests
• Prior treatments
• Concerns/goals
CAP: Key Points for the Provider

- Is the pain really gastrointestinal in origin?
- Is the pain proportionate to the individual’s behavior?
- Is the pain part of an occult systemic illness?
- What is the psychological status of the patient?
- Is the pain related to drug therapy?
- Is there something to be gained by having symptoms?

CAP: Differential Diagnosis - Upper

- Esophageal motility disorders (NCCP)
- Functional dyspepsia/Gastroparesis
- Gastritis/duodenitis
- Functional abdominal pain (FAP/CAP)
- Abdominal wall pain
- Pancreatic/Hepatobiliary disorders
  - chronic pancreatitis, NASH, SOD dysfunction
- Vascular disorders
- Bacterial overgrowth
- Narcotic bowel syndrome
CAP: Differential Diagnosis - Lower

- Functional abdominal pain
- IBS – irritable bowel syndrome
- IBD – inflammatory bowel disease
- Spastic bowel disorders (NOS)
- Chronic constipation
- Urologic disorders
- Urogynecologic disorders
- Abdominal wall pain
- Narcotic bowel syndrome
- Referred pain

CAP: Rare causes

- Heavy metal poisoning
- Acute intermittent porphyria
- Familial Mediterranean Fever
- Abdominal migraine
- Abdominal epilepsy
- Benign tumors
- Malignancies
Rome IV criteria for CAPS

Must include all of the following:

1. Continuous or nearly continuous abdominal pain.
2. No or only occasional relationship of pain with physiological events (e.g. eating, defecation or menses)
3. Pain limits some aspect of daily functioning (e.g. impairments in work, intimacy, social/leisure, family life, and care-giving for self and others).
4. The pain is not feigned.
5. Pain is not explained by another structural or functional gastrointestinal disorder or other medical condition.
6. The criteria must be fulfilled for the last 3 months with symptom onset at least 6 months before diagnosis.

Chronic abdominal wall pain (CAWP)

• 10-30% of patients with CAP have CAWP
• First described by Carnett in 1926
• Somatic sensation – T7-T12
• W:M ratio of 4:1; obesity may be a risk factor
• RUQ/epigastric area – most common sites
• Carnett’s test: 85% sensitivity; 97% specificity
• Treatment: trigger point injection
**CAP: The Physical Examination**

- Assess general appearance
- Eyes open or eyes closed?*
- Vital signs (is tachycardia present?)
- Location of the pain
- Radiation of the pain
- ? Prior surgeries
- Check for enlarged nodes, hepatosplenomegaly, ascites, hernias
- Assess vascular system
- Check for a succussion splash

*Gray et al, BMJ 1988

Universe.gi.org
CAP: Diagnostic Tests

- Patient dependent
- Approach in a logical manner
- What is the hypothesis leading to the test?
- Start simply
- Communicate with the patient in-between tests
- Don’t keep repeating normal tests
- Initiate treatment as well – don’t wait until EVERY test has been performed

CAP: Treatment Approaches - I

- Educate, reassure
- Be empathetic; be patient; avoid quick fixes
- Understand goals, fears and concerns
- Set limits
- Identify expectations
- Help the patient take responsibility (what have you done to improve your symptoms?)
- Minimize unnecessary testing
- No opioids
CAP: Treatment Approaches - II

- Lifestyle
  - Diet, exercise, sleep, stress reduction
- Alternative therapies
  - Capsaicin, acupuncture, iberogast
- Behavioral therapy (CBT)
- Treat co-existing psychological dysfunction
- No opioids

Which medication is FDA approved for the treatment of CAP?

1. Tramadol
2. Amitriptyline
3. Duloxetine
4. Gabapentin
5. All of the above
6. None of the above
CAP: Medication Options

- TCAs
  - Desipramine, nortriptyline, amitriptyline, imipramine
- SRNIs (duloxetine, venlafaxine)
- SSRIs
- Anxiolytics
- Antinociceptive agents
  - Pregabalin
  - Gabapentin
  - Tramadol
- Others – mirtazapine, buspirone, anti-spasmodics
- No opioids

CAPS: TCAs or SNRI? Action of neuromodulators

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CAP: Key Practice Points

- Abdominal symptoms are not always GI in origin
- Symptoms can be non-specific
- The presence of pain does not require an organic process in order to be taken seriously
- An algorithmic approach to ALL patients with chronic abdominal pain will never work
- Approach tests and medications logically
- Set expectations/limits
- Identify goals
- Consider combination therapy

Bloating and Distension: Epidemiology

- US Household survey – 1991 – prevalence of 31% (Rome I criteria)¹
- 2510 US subjects – 2000 – prevalence of 16% (Rome II criteria)²
- Prevalence in IBS - > 60% ³
- Pts with IBS-D are more likely to report Sx than Pts with IBS-C
- Women are more likely to report symptoms than men

Intestinal Gas: the basics

5 major gases play a role in bloating and distension:
- Nitrogen (N\textsubscript{2}), oxygen (O\textsubscript{2}), carbon dioxide (CO\textsubscript{2}), hydrogen (H\textsubscript{2}), and methane (CH\textsubscript{4})

N\textsubscript{2} and O\textsubscript{2} are swallowed
CO\textsubscript{2}, H\textsubscript{2}, CH\textsubscript{4} are produced within bowel lumen

Chronic Bloating: A visual differential

Lacy, Vazquez, Cangemi – CGH; 2020; in press
Bloating & Distension: Common Etiologies

- Functional bloating/distension
- IBS
- Functional dyspepsia
- Chronic constipation
- Gastroparesis
- Delayed SB transit
- Mechanical obstruction
- Pseudo-obstruction
- Ischemia
- Pancreatic insufficiency
- Infectious gastroenteritis
- Medication induced
- Carbohydrate intolerance
- Celiac disease
- SIBO
- Colonic dysbiosis
- IBD
- Psychiatric disorders
- Aerophagia
- Other (malignancy, liver)

Functional Bloating & Distension

- Symptoms of recurrent abdominal fullness, pressure, or a sensation of trapped gas (functional abdominal bloating; FAB)
- And/or a measurable (objective) increase in abdominal girth (functional abdominal distension; FAD)
- FAB/D should not meet criteria for other functional bowel disorders
- Onset > 6 months ago
- Symptoms active in the last 3 months

Abdominal bloating and abdominal distension

Abdominal bloating

Subjective sensation of abdominal inflation and/or gas/flatulence

Abdominal distension

Objective and measurable increase in abdominal girth

May coexist in the same individual or may occur independently

Pathophysiology of Functional Bloating and Distension

• Increased bowel wall tension
• Augmented conscious perception of wall tension
• Abnormal viscero-somatic reflex
Bloating & Distension: An abnormal viscero-somatic reflex

Lacy, Vazquez, Cangemi 2020; CGH, in press

Bloating and Distension: A Diagnostic & Treatment Algorithm
FODMAPs & the GI Tract

Antibiotic Therapy for SIBO

- Ciprofloxacin (250 mg bid)
- Doxycycline (100 mg bid)
- Metronidazole (250 mg tid)
- Neomycin (500 mg bid)
- Norfloxacin (800 mg/d)
- Rifaximin (550 mg tid)
- Tetracycline (250 mg qid)
- Trimethoprim-sulfamethoxazole (bid)
Treatment Options Based on Pathophysiology: Attenuating visceral perception

- TCAs
- SNRIs
- SSRIs
- Gabapentin
- Pregabalin
- Other anti-nociceptive agents
- (anti-spasmodics)
- No opioids

Treatment Options Based on Pathophysiology: Abnormal viscero-somatic reflex

- Diaphragmatic breathing
- Biofeedback
Summary

• Bloating and distension are common
• Symptoms are non-specific – you need to be a good detective
• Consider your evaluation with 3 separate physiologic processes in mind
• Take a good dietary history – is this food related?
• Look for overlapping functional GI disorders
• Consider the concept of visceral hypersensitivity
• Don’t forget the abnormal viscero-somatic reflex

Questions?
NEW IBS Patient Tools

**IBS Treatment Checklist** - Create a personalized checklist of treatments “currently using,” “have tried in the past” or “wish to discuss”
[gi.org/patients/ibs-treatment-checklist/](http://gi.org/patients/ibs-treatment-checklist/)

**IBS Screener** - six questions to start the discussion on IBS
[gi.org/patients/ibs-screener/](http://gi.org/patients/ibs-screener/)
Six questions to start the discussion on IBS

[Link: gi.org/patients/ibs-screener/]

Patients select treatment “currently using,” “have tried in the past” or “wish to discuss”

[Link: gi.org/patients/ibs-treatment-checklist/]
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