CME Available Until:
May 31, 2023

This activity has been approved for
1.5 AAPA Category 1 CME credits

MORE THAN A GUT FEELING

Optimizing Diagnosis and Care of Patients with IBS

Contents:

Provided by:
AAPA

This Activity is Supported by an Independent Educational Grant from AbbVie.

Produced by:
MedicalLogix

ACTIVITY OVERVIEW

Irritable bowel syndrome (IBS) is the most commonly diagnosed gastrointestinal disorder across primary and specialty settings. It is characterized by the presence of recurrent abdominal pain often with bloating and disordered bowel habits. IBS can present with a wide spectrum of symptoms, ranging from IBS with diarrhea (IBS-D) to IBS with constipation (IBS-C) to IBS with a mixed bowel pattern (IBS-M). While the prevalence varies from country to country, the worldwide prevalence of IBS is approximately 11%. For many patients, IBS symptoms are chronic and relapsing with varying degrees of intensity. Evidence from the literature supports that the majority of patients (68%) receive their IBS diagnosis in the primary care setting. As such, PAs are uniquely positioned to tackle not only diagnosis but also the ongoing clinical management of symptoms. This program will appeal to various learning styles and allow participants to reinforce their knowledge and acquire new skills that can immediately be applied to clinical practice.

AAPA TAKES RESPONSIBILITY FOR THE CONTENT, QUALITY, AND SCIENTIFIC INTEGRITY OF THIS CME ACTIVITY.

EDUCATIONAL OBJECTIVES

- Assess patients for IBS during routine exams using simple screening questions.
- Evaluate patients with IBS using the Rome IV Diagnostic Criteria for IBS.
- Identify alarm features when evaluating a patient for potential IBS.
- Select appropriate pharmacologic options when treating patients with IBS.

ACCREDITATION STATEMENT

This activity has been reviewed by the AAPA Review Panel and is compliant with AAPA CME Criteria. The activity is designated for 1.5 AAPA Category 1 CME credits. PAs should only claim credit commensurate with the extent of their participation. Approval is valid through May 31, 2023.

Estimated time to complete this activity: 90 minutes.

HOW TO RECEIVE CREDIT

There are no fees for participating and receiving CME credit for this activity. Participants must: 1) read the educational objectives and faculty disclosures; 2) study the educational materials; 3) complete the post assessments in Learning Central.

In order to receive credit, participants must complete the post-test and evaluation. You will be able to access your certificate of completion in Learning Central as soon as you complete the post-test with a minimum score of 70%. Your certificate will be available under "Transcript" for your records.

DISCLOSURE POLICY STATEMENT

All individuals in a position to control the content of this activity have disclosed their relevant financial relationships with commercial interests. Disclosures from the author(s) are listed below.

Rick Davis, PA-C
Division of Gastroenterology, Department of Medicine
College of Medicine
University of Florida Health
Gainesville, FL
No relevant financial relationships to disclose

Carol Antequera, PA-C
Department of Gastroenterology
University of Miami
Miami, FL
No relevant financial relationships to disclose.

ACTIVITY PLANNERS

John Gentile, Megan Gentile, Joanne Jeffers, and Morgan Leafe, Medical Logix, LLC have no relationship with any commercial interests whose products or services may be mentioned during this presentation.

AAPA STAFF ACTIVITY PLANNERS

Michele Hoang, Cheryl Holmes, and Daniel Pace have no relevant financial relationships to disclose.

OFF-LABEL/UNAPPROVED PRODUCT(S) DISCUSSION

This program discusses the off-label use of amitriptyline, desipramine, hyoscine, hyoscyamine, imipramine, nortriptyline, and prucalopride.

DISCLAIMER

The opinions and comments expressed by faculty and other experts, whose input is included in this program, are their own. This enduring material is produced for educational purposes only. Please review complete prescribing information of specific drugs mentioned in this program including indications, contraindications, warnings, and adverse effects and dosage before administering to patients.

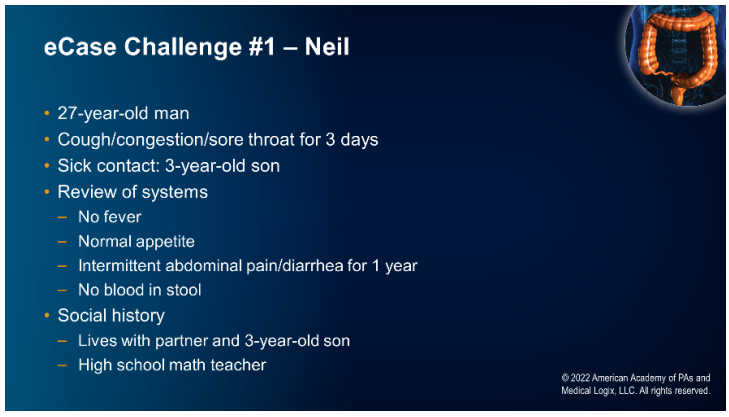
eCASE CHALLENGE #1

Rick Davis, PA-C: Hello, and welcome to this video *eCase Challenge*, "More Than a Gut Feeling: Optimizing Diagnosis and Care of Patients with IBS." I'm Rick Davis, a PA in the Division of Gastroenterology in the College of Medicine at the University of Florida in Gainesville. Joining me today is PA Carol Antequera. Carol is in the Department of Gastroenterology at the University of Miami in South Florida.

My thanks to you for your involvement in this important continuing medical education activity, which consists of two video *eCase Challenges*. So, let's get started with our first case.

Our first *eCase Challenge* is a patient we will call Neil. Neil is a 27-year-old man who presents to his primary care PA with cough and congestion that began about three days ago. He states that his 3-year-old son, who attends daycare, has frequent colds, and Neil began to have a mild cough and sore throat about two days after his son developed similar symptoms.

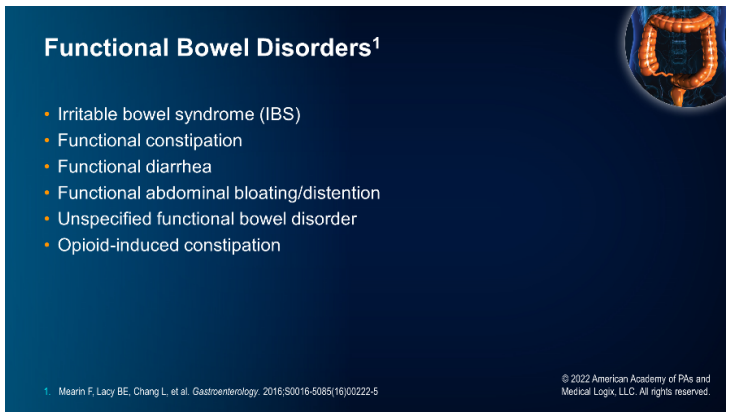
Review of systems reveals that Neil has not had a fever, but he does have nasal congestion. His appetite has been normal. And on further questioning about his gastrointestinal symptoms, he mentions that he does have intermittent abdominal pain and diarrhea, but these have been present for about a year, and did not start with the recent illness. He has not noted any blood in the stool. He lives at home with his partner and 3-year-old son and works as a high school math teacher.



Now, let's pose our first clinical question.

What frequency of abdominal pain would be required on average for Neil to meet the Rome IV diagnostic criteria for irritable bowel syndrome?

A. At least 1 day per week in the last 3 months
B. At least 3 days per week in the last 6 months
C. At least 1 day per month in the last 3 months
D. At least 3 days per month in the last 6 months

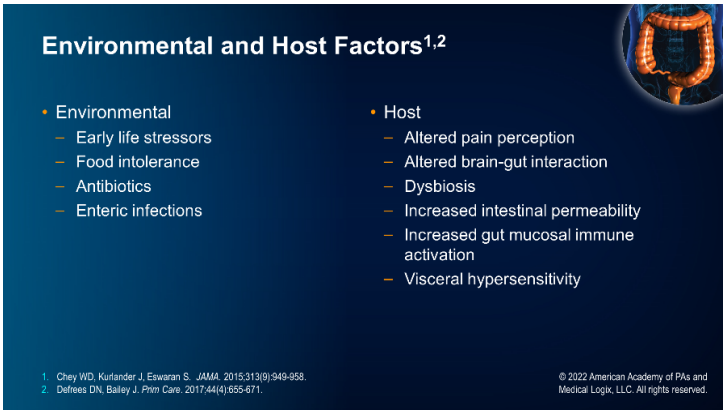


So, functional bowel disorders are highly prevalent worldwide. They include IBS, functional constipation, functional diarrhea, unspecified functional bowel disorders, and also includes opioid-induced constipation, with a worldwide prevalence of about 11%. It's more common in women.

So the pathophysiology of IBS is complex, with both environmental and host factors contributing to symptoms. So, Carol, can you talk a little bit about some of these environmental and host factors that we think are contributing to IBS symptoms?

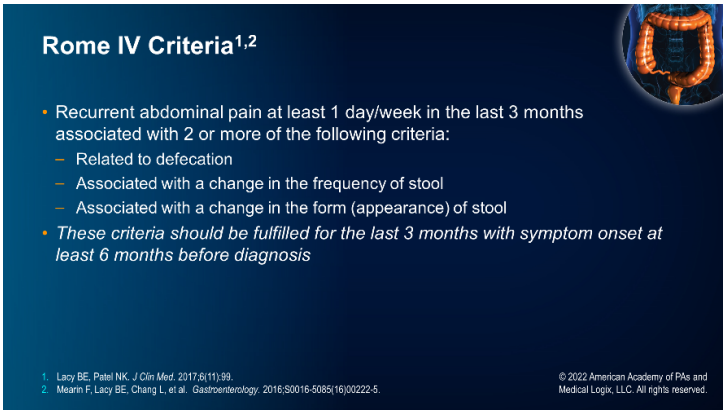
Carol Antequera, PA-C: Absolutely, Rick. Thank you so much. Yes. The pathophysiology of irritable bowel syndrome is quite complex and does include both environmental and host factors. And some common environmental factors that contribute to IBS include early life stressors, such as abuse and psychosocial stressors, as well as food intolerances, antibiotics, and enteric infections.

Host factors that also contribute to IBS include altered pain perception, altered brain-gut interaction, an increase in intestinal permeability, and increased gut mucosal immune activation, which can lead to inflammation of the gut, and increase in visceral hypersensitivity for these patients.



Rick Davis: So, Rome IV really defines IBS as a functional bowel disorder with recurrent abdominal pain, and abdominal pain is really the main feature here that distinguishes it from other functional constipation or diarrhea or a change in bowel habits. But it needs to be associated, that pain, with a change in defecation, a change in the stool frequency or consistency.

The Rome IV criteria are a 2016 update from the 2003 Rome III criteria, developed by a panel of functional GI disorder experts, and really has been used I think more so for clinical research purposes.



But again, recurrent abdominal pain at least one day per week in the last three months, and associated with at least two other features,

including, related to defecation, a change in stool frequency or consistency, and that these symptoms should have been ongoing for at least 6 months before the diagnosis. So I guess this really kind of excludes patients that might have an acute infectious diarrhea, correct?

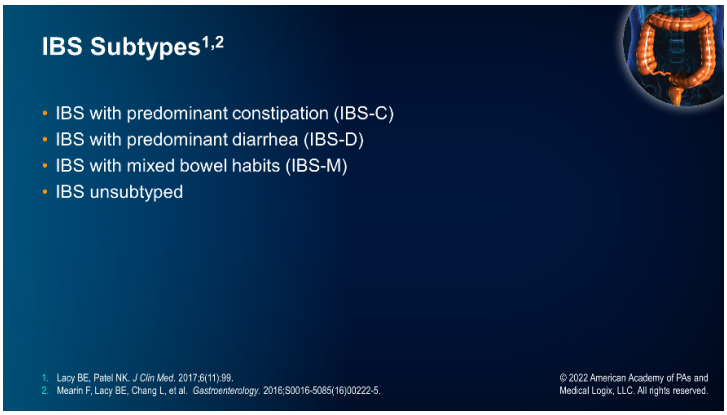
Carol Antequera: Yes, Rick. Those patients have symptoms that resolve typically within ten days, whereas patients who have IBS have symptoms typically for at least three months, and oftentimes for even the six months to a year before they are diagnosed.

Rick Davis: And then there are different subtypes of IBS, as well, correct? So, if you could comment a little bit about that.

Carol Antequera: Sure, absolutely. So, IBS can be predominantly constipation, predominantly diarrhea, or some patients have mixed-type. These are defined based on the percentage of stools that are given on the Bristol Stool Scale.

So, for example, a patient who has stools that range from type 1 to type 2 on the Bristol Stool Scale have very hard, lumpy stools, whereas patients who have stool type 6 or 7 have very loose to watery stools.

And for the subtypes of IBS, so we call IBS with constipation for patients who have constipation more than 25% of the time and diarrhea less than 25% of the time. For patients who have IBS with diarrhea, they will exhibit symptoms of diarrhea more than 25% of the time, with constipation less than 25% of the time. And for those patients who have IBS with mixed type, these patients will exhibit constipation and diarrhea both more than 25% of the time.



Rick Davis: Interesting. So, and I don't know if it's true in your practice, as well, but we often see our mixed group or the alternators tend to be more of the constipation group. They tend to not have a bowel movement for some days, and then they have a day or two of cleanout, which tends to sometimes be the diarrhea component. But a lot of those patients tend to, at least our experience, has been a little bit more on the constipation side up front. Is that yours, as well?

Carol Antequera: Yes, it is, Rick. And so it sometimes becomes a little bit tricky in managing their symptoms, but typically we try to manage their symptoms based on what symptom they have a little bit more of in the month.

Rick Davis: Yes, that's a really good point. And some of the other symptoms that patients have, certainly, abdominal bloating and distention, are very common with these patients.

Carol Antequera: Yes. Actually, the word discomfort used to be part of the Rome III criteria. However, due to its subjective nature, it was taken out. But it is one of the main symptoms of patients with IBS.

Rick Davis: Good point.

Carol Antequera: Patients with IBS also tend to have a lot of bloating and gas, and this has also been recognized as a very common symptom, but yet is not a diagnostic criteria.

There has also been a clarification in the disordered bowel habits in the Rome IV criteria, and now explicitly states that IBS subtype classification is based on predominant bowel habits on days with abnormal bowel movements.

Let's review the question posed, which asked, what frequency of abdominal pain would be required on average for Neil to meet the Rome IV diagnostic criteria for irritable bowel syndrome? The correct answer is (A) at least one day per week in the last three months.

Let's take a few moments to review Neil's history and consider what led us to consider IBS as a potential diagnosis, whether he meets Rome IV criteria, and whether there is an additional information needed to make a diagnosis.

We know that Neil has had abdominal pain and diarrhea for the past year. The time frame of 12 months of symptoms does fulfill the requirement that they need to be present for at least six months.

What we do not know is how many times per week this has been occurring over the last three months. So this will be important information to obtain in order to know if he meets the diagnostic criteria.

In addition, we do not know enough about the relationship between his abdominal pain and his diarrhea. He mentioned that he had both. But in order to determine if he has IBS, we need to know if the pain is related to the diarrhea. We should also clarify whether the diarrhea is a change in the form and appearance of his normal stool.

Let's take a few minutes now to review the key elements that should be elicited on patient history when a diagnosis of IBS is being considered.

One of the most important criteria that we need to meet the diagnosis of IBS is abdominal pain. So abdominal pain must be present. The absence of abdominal pain precludes the diagnosis. And pain can be anywhere in the abdomen, but in the lower abdomen it is most common in patients with IBS.

They also show disordered bowel habits. And this should be elucidated as to whether the patient is having constipation, diarrhea, or both. It is important to determine the relationship of disordered bowel habits to the abdominal pain.

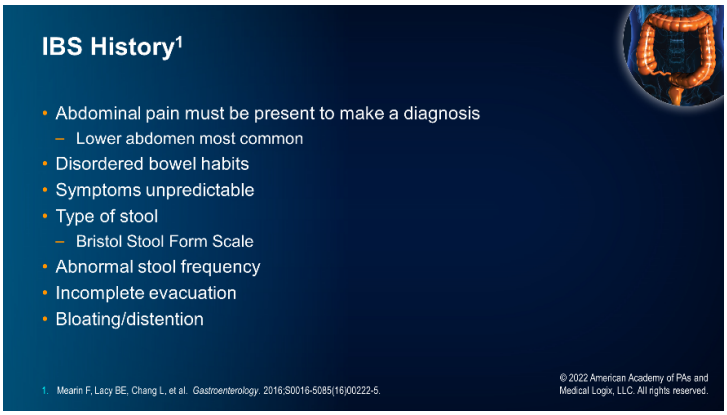
We also should ask the patient whether their symptoms are unpredictable. This pattern is more common in patients with IBS with diarrhea.

Increasing number of consecutive days without a bowel movement is more commonly associated in patients with irritable bowel syndrome and constipation.

The type of stool should also be classified using the Bristol Stool Form Scale. Patients with IBS-C may misclassify repeated episodes of hard stools as diarrhea due to their frequency. However, they still exhibit constipation.

Some other common but nondiagnostic symptoms may include abdominal stool frequency, such as more than three bowel movements per day. Some patients will have less than three bowel movements per week; abnormal stool form types, such as Bristol Stool Form Scale 1 to 2, which is hard and lumpy, or 6 to 7, which is loose and watery; excessive straining during defecation, as well as defecatory urgency; and feelings of incomplete evacuation.

Mucus with bowel movements can also be present. Most patients have abdominal bloating, and many have distention, but these are not required for diagnosis.



Rick Davis: So, getting back to that sense of incomplete evacuation, we often see patients who have pelvic floor or pelvic outlet disorders, especially in women, especially those with multiparity, as well, or dyssynergia defecation, as well. How do you sort of sort that out in the history that you take from your patients?

Carol Antequera: Well, that's a great question, Rick. So we try to elucidate how often they're having bowel movements, and we also try to ask them when they're having bowel movements and they're pushing, if they have to use any type of maneuvers in order to help them get their stools out, because that also can lead us to think if a patient had pelvic floor dysfunction or pelvic floor weakness.

Rick Davis: Mm-hm.

Carol Antequera: But many patients who have IBS with constipation will tell us they are having bowel movements, but they're very small and incomplete, and they feel like they still need to go more.

Rick Davis: Gotcha. Good points.

Carol Antequera: So, besides the type and duration of symptoms, there are a few additional pieces of history to consider when a patient is presenting with possible IBS.

Before we present more of Neil's case, we have a new clinical question.

Which of the following medications can exacerbate IBS symptoms?

A. Acetaminophen
B. Metformin
C. Methylphenidate
D. Prednisone

Rick Davis: So, Carol, it's interesting that a lot of over-the-counter medications can certainly be triggers or exacerbations of IBS symptoms. Some of the more common ones would be antihistamines with constipation, calcium. I've seen patients that are taking extra magnesium tablets for other reasons and are having diarrhea, and NSAIDs, of course.

And then prescription medications like antibiotics, certain antidepressants, antiparkinsonian drugs, we certainly see that a lot. I see a lot in our practice of calcium channel blockers, especially in patients with constipation-predominant IBS. Are you seeing that in your practice, as well?

Carol Antequera: Yes, yes. We do see that, as well, Rick. And actually, even just today, I saw a patient who was having some intermittent diarrhea, and when I looked at his medication list, he was taking 2,000 mg/day of metformin. And so metformin definitely seems to be at the top of the list.

Rick Davis: Really good point. And then diet, as well. Questions that we should ask about increased symptoms of wheat, caffeine, fruits, vegetables, if they seem to be triggers.

Carol Antequera: Absolutely, Rick. We see this all the time. There are some patients who don't necessarily have a gluten allergy, but have a gluten intolerance. And so those patients also tend to have symptoms of diarrhea, gas and bloating, as well, as well as many patients are lactose-intolerant.

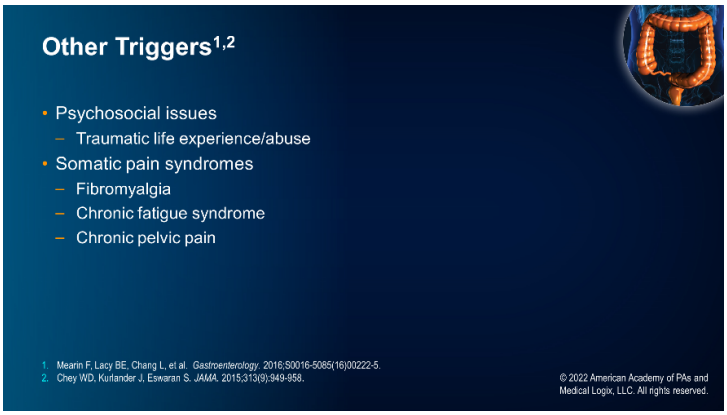
And so, you know, those patients who are having dairy, and a lot of patients don't realize that there could be dairy hidden in many of the foods that they eat. But once they start looking at the ingredients, they start to realize, and so many of them do tend to be lactose-intolerant, as well.

Rick Davis: Sure. And then there are a lot of psychosocial issues that are triggers, as well. I see a lot of referrals from the student

health center. So, I see graduate students. I see postdocs. And it's interesting, whenever somebody is studying for their qualifying exams or they're interviewing for a position, it seems to be a real trigger for their IBS symptoms.

Carol Antequera: Yes. And so we do tend to see those patients who also come to us from student health who have an onset of symptoms that typically occur around stressful situations, such as exams, a breakup, changes in relationship, a move. And so these things can affect these patients, absolutely.

Rick Davis: Sure. And then other multiple comorbidities can be associated with IBS. When I first came to the field, I remember one of my mentors talking about the triad of irritable bowel syndrome, fibromyalgia and depression, and that if you didn't treat all three, you weren't going to have a successful result.



And so we know that somatic pain syndromes can certainly be associated with IBS and other GI disorders, upper GI disorders, such as chronic reflux disease, dyspepsia, early satiety, nausea with meals, as well as then the psychiatric disorders.

Carol Antequera: Yes, absolutely. Especially those patients who have depression and anxiety, they certainly tend to have more symptoms of visceral hypersensitivity, pain, and sort of a gut-brain disorder.

Rick Davis: And that visceral hypersensitivity, it's interesting. It really seems to be more of a hyper-sensation of normal physiologic function. So transit, and if we do motility studies, they tend to be normal, but just normal sort of GI function they have this hypersensitivity to.

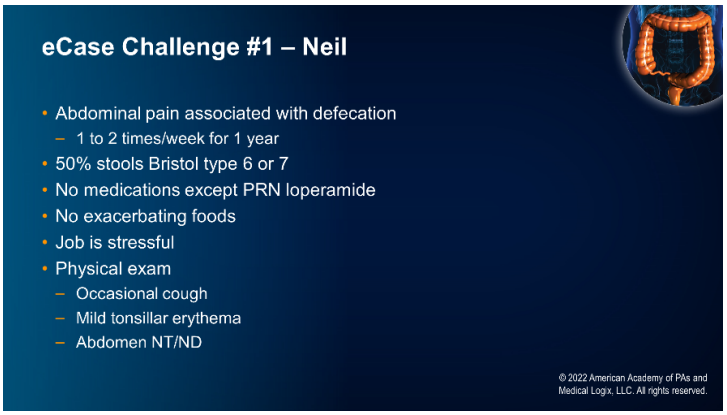
Carol Antequera : Yes, they do. I had a patient today who actually wrote me an e-mail letting me know that he felt his intestines moving. So I let him know that that was quite normal. I'd be actually a little concerned if they weren't moving. But I can totally understand that he has this somatization and hypersensitivity and hypervigilance, really somewhat of a normal physiology.

Rick Davis: Let's review the last question, which asked, which of the following medications can exacerbate IBS symptoms? The correct answer is (B) metformin.

Now, for the next steps in our case, Neil elaborates that his abdominal pain is associated with defecation and has been occurring one to two times per week for the last year. On the days he has symptoms, at least 50% of his stools are Bristol type 6 or 7, which are loose to watery. Neil states that he does not take any regular medications, but he has been taking loperamide intermittently over the past year to treat his diarrhea.

He does not feel that he has gotten much relief from this, though, and he does not take any OTC supplements. His diet does not include any excessive amounts of exacerbating foods or beverages. And as we mentioned earlier, he does not have any comorbid diagnoses. However, he does report that his job as a high school math teacher has been particularly stressful over the past year.

On physical examination, Neil appears comfortable and well-nourished. He has an occasional cough, and head and neck exam reveals mild tonsillar erythema. Heart and lung exam, however, are normal. And abdominal exam is nontender, nondistended throughout, and there are no rashes noted on his skin.



So, although Neil does not have a known psychiatric diagnosis, he does have an ongoing source of stress in his life. His diet is not an obvious contributor to his symptoms, and his physical exam is largely normal, except for some signs of a viral upper respiratory infection.

His symptoms do meet Rome IV criteria for IBS, with both the frequency of pain and association with defecation being in line with the diagnostic criteria. Given his report of predominantly Bristol type 6 or 7 stools, a subtype of IBS-D is high on our current differential diagnosis for Neil.

This brings us to our next clinical question.

Which of the following is considered an alarm symptom that may indicate a diagnosis besides IBS?

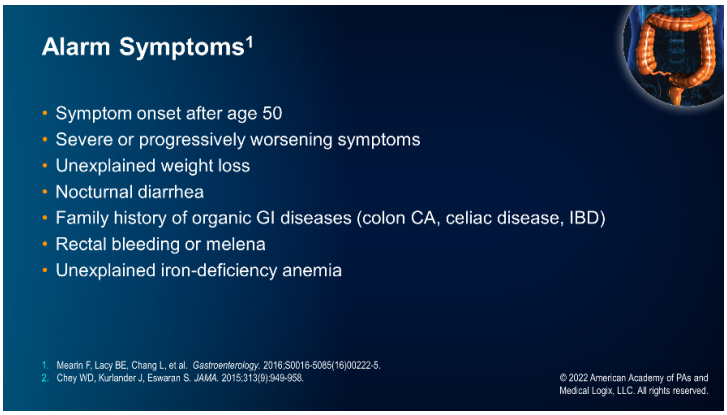
- **A.** Age under 50 years
- **B.** A family history of somatic pain syndrome
- **C.** Nocturnal passage of stool
- **D.** Unintentional weight gain

So, Carol, in addition to obtaining a history regarding the points that may confirm the diagnosis of IBS, it's really also important to identify alarm symptoms that may indicate a different differential diagnosis of underlying organic disease. So, what would some of these be?

Carol Antequera: Absolutely, Rick. We're always vigilant of alarm symptoms when we see these patients. And certainly, one very

important alarm symptom for a patient with IBS is the new onset of having IBS after the age of 50.

So, unexplained weight loss, as well as nocturnal diarrhea, these are some alarm symptoms that, when we hear, merit further workup for these patients. We also ask patients if they have a family history of organic GI disease, such as colon cancer, celiac disease or inflammatory bowel disease. Anyone who is having rectal bleeding or melena really requires further workup, as well as patients who present with unexplained iron deficiency anemia.



Rick Davis: Right. And it's important to realize, it's often missed in young females that iron deficiency anemia is related to their menses, but it can also be associated with celiac disease. So getting that family history, as well. And then inflammatory bowel disease, of course. Ulcerative colitis is, you know, a little bit more obvious, with bloody diarrhea. But Crohn's disease sometimes can take years to make the correct diagnosis.

Carol Antequera: That's right, Rick. That is true. Sometimes patients, they don't present with very obvious symptoms, which is why we always, for every patient that comes in, prior to any IBS diagnosis, we always order a CBC. And if we see any kind of anemia, then that merits further workup with iron studies and things like that, which can then prompt you to a possible diagnosis of Crohn's.

Rick Davis: Sure. And again, infectious colitis. You know, again, the IBS criteria is generally going to be for symptoms that have been going on for over 6 months and are a little bit more frequent. And, as you mentioned, infectious enteritises generally tend to be 10 to 14 days, max.

Celiac disease presentation, very variable. Sometimes it's overlooked. And the microscopic colitis, you know, I really don't see this in a young population. So, this is usually picked up just on colonoscopy with random biopsies, with the colonic mucosa looking normal. But this tends to be in patients over the age of 50, usually 50s and 60s has been our experience. Yours, as well?

Carol Antequera: Yes, Rick. And especially in patients who also have a known autoimmune disease. So, for example, I've seen this oftentimes in patients who also have lupus and scleroderma. These patients tend to present also with microscopic colitis, as well.

Rick Davis: So, again, paying attention to those alarm features, or if there's a change in the symptoms from when they initially present is a really good hallmark to require further evaluation.

Carol Antequera: Absolutely, Rick. So, let's review the correct answer to the clinical question. Based on the information that was just discussed about alarm symptoms to assess when considering a diagnosis of IBS, the correct answer is (C) nocturnal passage of stool.

Anyone greater than 50 years of age, not less than 50 years, would be a concerning patient characteristic. And weight loss, not weight gain, would also be concerning. And although a family history of colon cancer or other GI diseases would be significant, a family history of somatic pain disorder does not indicate a potentially higher risk for organic disease.

It is essential in the workup of a patient with possible IBS to both inquire about these alarm symptoms and consider the underlying diagnosis they may indicate.

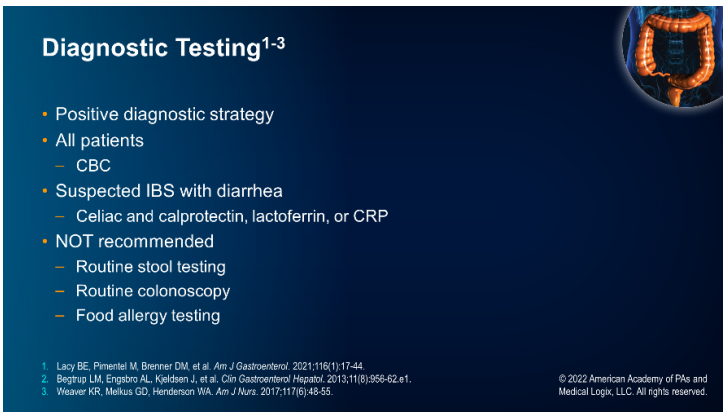
Presence or absence of these symptoms can help to guide the need for diagnostic testing. This brings us to our next clinical question.

Which of the following diagnostic studies is indicated for Neil at this time?

A. Abdominal x-ray
B. C-reactive protein
C. Food allergy testing
D. Stool culture.

Rick Davis: So, Carol, the American College of Gastroenterology guidelines on management of IBS recommend a positive diagnostic strategy rather than one of exclusion. And so this improves certainly cost-effectiveness, and low diagnostic yield of excessive testing in patients with likely IBS. So, it shortens the time before patients are prescribed in the appropriate treatment.

So, all patients with suspected IBS should have a CBC to rule out anemia, regardless of potential subtype, and looking for inflammatory markers, such as a fecal calprotectin, lactoferrin or C-reactive protein, that may indicate an inflammatory bowel disease. While these studies are normal, they don't entirely rule out inflammatory bowel disease.



Testing that's not recommended for IBS is routine stool testing; routine colonoscopy if those are patients that are younger than 45; food allergy testing, unless there are really reproducible symptoms indicating a

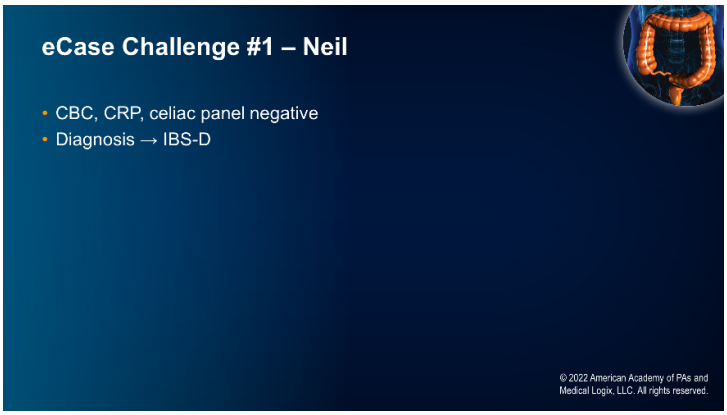
possible food allergy. Carol, what makes you either refer a patient for allergy testing or, if you're ordering that yourself, when you're suspicious of someone with IBS, whether they're truly food allergic?

Carol Antequera: So, typically, we refer to the allergist, because we do prefer them to be tested by the allergist with the food panel, and they do the sensitivity testing, as well. But I definitely take it upon myself to test patients for celiac disease. But when it comes to food allergies, I do also ask patients to keep a diary so that we can try and pinpoint if there's any specific triggers.

Rick Davis: Really good point. So, let's review the correct answer to our clinical question. Which of the following diagnostic studies is indicated for Neil at this time? The correct answer is (B) C-reactive protein. Imaging such as an abdominal X-ray is not indicated for the diagnosis for IBS, and we also just reviewed that food allergy testing and stool cultures are not generally indicated unless there is a patient-specific reason indicating the need for these.

And based on the ACG guidelines, Neil should also have a CBC and testing performed for celiac disease. In addition, he should have either a fecal calprotectin and/or lactoferrin instead of the CRP to rule out inflammatory bowel disease, if preferred.

Continuing our case, Neil has a CBC, CRP, and celiac disease panel performed. The results of these are within normal limits, indicating the diagnosis of IBS-D can appropriately be made at this time.



And this brings us to our last clinical question.

Which of the following treatments should Neil be prescribed at this time?

- **A.** Dicyclomine
- **B.** Linaclotide
- **C.** Lubiprostone
- **D.** Rifaximin

So, Carol, there are some dietary therapies that can be used in the treatment of IBS. Which do you use in your practice?

Carol Antequera: A limited trial of a low-FODMAP diet may be initiated to improve global symptoms. Elimination of dietary fermentable oligosaccharides, disaccharides, monosaccharides, and polyols, which gives us the acronym FODMAPs.

And basically, this is the elimination of foods that can lead to increased GI water secretion, increased fermentation in the colon, which leads to gas, luminal distention, and meal-related symptoms. And so this diet can be a little complicated and confusing for patients. And so we always try to have them work with a dietitian to really help them achieve the maximum benefit of this diet.

And some of the foods that are high in FODMAPs include dairy, so any milk-based products, such as yogurt and ice cream; as well as wheat-based products, such as cereal, bread and crackers, beans, lentils, some vegetables, such as artichoke, asparagus, onions, and garlic; and some fruits also are high in FODMAPs, such as apples, cherries, pears, and peaches.

Rick Davis: Now, recommending fiber in the diet, we usually recommend a soluble fiber, either supplements or soluble-fiber foods, like oatmeal. Have you found this to be helpful in your patients?

Carol Antequera: Yes. And based on the ACG guidelines, they do recommend soluble fiber versus insoluble fiber in the treatment of patients with IBS. And they do find that this is helpful for patients who are predominantly constipated. And so, we recommend patients take psyllium, oatmeal, or barley.

Rick Davis: So, peppermint oil has also been shown to provide some relief of global IBS symptoms. I've seen in some patients we'll have a little bit of improvement in abdominal pain, maybe not a change in their bowel habits. But I've noticed it depends on kind of whether it's enteric coated or not. If you could elaborate on that, Carol, whether it can increase reflux symptoms if they tend to have GERD, or if they might have other side effects.

Carol Antequera: Absolutely, Rick. Thank you, yes. That's a great point. The ACG recommends that patients use triple-coated peppermint oil so that this avoids the capsule or the peppermint oil from being released in the stomach, where it may lead to increased reflux and heartburn, but when released in the small bowel, patients do tend to have some relief of their irritable bowel syndrome, and mostly in the way of reducing pain, as well as bloating and gas.

Rick Davis: Yes. I think some of the etiologies, the way that it works, I think, as a mild smooth-muscle relaxant.

Carol Antequera: Correct, yes. That is correct.

Rick Davis: And now another question that comes up all the time is about probiotics. Should I be taking them for my IBS? Will it be helpful? Is it harmful? Which ones do you recommend, or do you just recommend avoiding them? What's been your practice?

Carol Antequera: That's a great question, Rick, and certainly comes up every day in the clinic. With the multiple products that are available now to patients over the counter, it's definitely a question that comes up quite often.

According to the ACG guideline, there is a very low quality of evidence that probiotics are effective for IBS. However, in clinical practice, we do see patients who take probiotics and can see improvement in their symptoms, but there really isn't enough data or trials that have shown us any kind of significant effect on IBS with constipation or diarrhea.

Rick Davis: Gotcha. And then antispasmodics. They've been around for a long time. That used to be the go-to medication for crampy abdominal pain. It has been shown, I guess, for treatment of global symptoms of IBS. In our practice, we've noticed maybe a worsening of constipation sometimes. It may be helpful for those who have IBS-D, more so.

I tend not to use them very much. I know our primary care colleagues tend to use them quite frequently before they get into the GI clinic.

Carol Antequera: Absolutely. So, primary care, urgent care, and the emergency department do tend to give more antispasmodics. Again, based on ACG guidelines, they don't really recommend that we use them very much. There are only three antispasmodics approved for use in the United States, and that is dicyclomine, hyoscyamine, and hyoscine. And unfortunately, there's just very limited data on the efficacy of these medications.

But again, in clinical practice, we do see some patients who do have some improvement of their symptoms with dicyclomine and hyoscyamine, which are the most commonly used.

Rick Davis: Right. I remember I had one patient who was a schoolteacher, a first-grade teacher, and her IBS symptoms only were during the first two weeks and the last two weeks of the school year, when the kids were like jumping out of their seats. And so she did very well with just a short course of the antispasmodics, but she didn't need them the rest of the time. So, it was sort of interesting. So, I kind of use it just as a PRN, but for a very short period of time, or situational --

Carol Antequera: Yes, absolutely.

Rick Davis: -- but not on a daily -- yes.

Carol Antequera: Yes, we don't recommend them for long-term use, either.

Rick Davis: Okay. And the bile acid sequestrants, I've found that more helpful in post-cholecystectomy patients that have diarrhea with bile salts getting into the colon. There actually used to be a medication over the counter called Carter's Little Liver Pills that were just bile salts, delayed-release in a capsule, for patients with constipation.

So we know that bile getting into the colon can cause diarrhea. So a bile acid sequestrant may help prevent that. But I haven't seen it very helpful in true IBS, mostly just the post-cholecystectomy diarrhea. What's your experience been with these?

Carol Antequera: Correct, yes. It doesn't really help patients who have longstanding IBS, but more in that postsurgical period for those patients. We also find that in some patients it can also cause more bloating and gas, and it does interact with a lot of other medications, and so we need to be careful with that, as well.

Rick Davis: So, one of the newer drugs on the block for IBS-D, rifaximin, this seems to be a game-changer for many patients. If you can tell us a little bit about that.

Carol Antequera: Sure. Rifaximin actually has been studied greatly and has been found to be efficacious and safe for patients with IBS-D. It is a non-absorbed antibiotic. And basically, it is used based on the hypothesis that some patients have an altered or abnormal microbiome. And so, a 14-day course of rifaximin can sometimes significantly improve patients' pain, as well as diarrhea.

Rick Davis: Right. I've seen more success with these in the patients that have postinfectious IBS. You know, they went on the cruise ship, and everybody came down with a gastroenteritis that lasted for 48 hours, but their bowel habits never went back to normal, and developed these symptoms for several months. And so, I've had some success in that subgroup, as well.

Carol Antequera: Yes, we did, too.

Rick Davis: And then some of the other, like alosetron, that's been around for a while. It's just indicated for IBS-D symptoms in women, correct?

Carol Antequera : Yes, this medication actually has a very small therapeutic window due to some safety concerns. And so really, it's only indicated for women less than age 65 who only have one or less cardiac risk factor. So it's a very small subgroup of patients that actually qualify for treatment with alosetron. But it is used for patients, or women with severe IBS diarrhea symptoms.

Rick Davis: Gotcha. Yes, I've had some success there. But I think it was post-marketing trials, there were some cases of ischemic colitis, and so they were recommending it not to be used in the elderly or in anyone that has more than one cardiovascular risk factor.

Carol Antequera: Correct, yes.

Rick Davis: Yes. And then the mixed opioid agonist-antagonist, do you use those very often?

Carol Antequera: Not too often, but one of the newest ones is eluxadoline, and this is a peripherally acting, it's a mixed mu and kappa opioid receptor agonist and delta opioid receptor antagonist. So it actually has both properties. And this medication has been shown to help patients with IBS with diarrhea. However, you do need to be careful, and it cannot be prescribed to patients who do not have a gallbladder.

Rick Davis: Okay. Good point. And then there's also use of the old antidepressant, tricyclic antidepressants to treat global symptoms of IBS. Do you use this much in your practice, and how would you prescribe it?

Carol Antequera: Yes, we do. These medications, such as amitriptyline, nortriptyline, imipramine, and desipramine, although previously used as antidepressants, actually have very good data that show that they do improve visceral pain. And patients do find benefit with these medications.

We typically start at a very low dose, and we give the patients four to six weeks to really see maximal improvement. And so a lot of them do actually see a lot of improvement in their pain and discomfort.

Rick Davis: Yes, I've noticed, especially in the diarrhea-predominant IBS group, because of probably the anticholinergic effects, will help with the diarrhea component, as well. And also, a little bit of a sleep component, too.

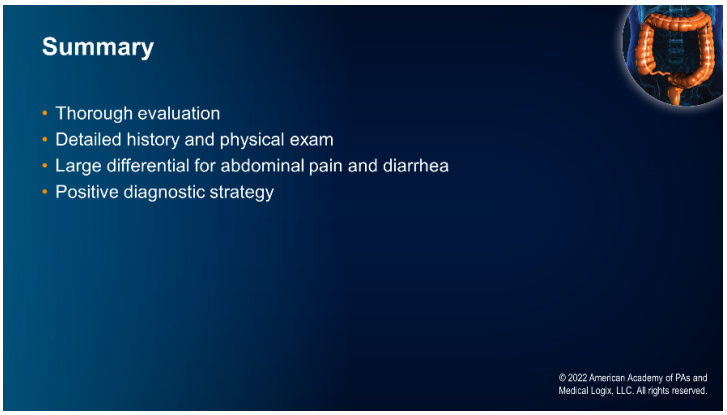
Carol Antequera: Yes. Typically, we give it at night before bed, and it does help them sleep better.

Returning to our question, the best treatment choice for Neil at this time out of those listed is (D) rifaximin. Dicyclomine is an antispasmodic, and it is not recommended in the treatment of IBS. And linaclotide and lubiprostone are not recommended for the treatment of IBS-D.

Neil's clinician can also consider whether dietary intervention would be appropriate at this time. Luckily, there are also other treatment options available if the rifaximin does not sufficiently treat his symptoms. Importantly, despite its utility in improving diarrhea, the loperamide that Neil had been taking on his own is not recommended as a first-line treatment for IBS, since it improves only his diarrhea and not the other global symptoms of his disease.

Rick Davis: As we bring our case to a close, we should remember that a thorough evaluation is essential for patients with possible irritable bowel syndrome. Importantly, a detailed history and physical exam are vital first steps in differentiating the many possible causes of abdominal pain and diarrhea that may present to a primary care PA's office, especially since some causes of these symptoms require more urgent workup and referral than others.

It is important to remember that IBS should be approached with a positive diagnostic strategy, rather than as a diagnosis of exclusion.



I'd like to thank our expert, Carol Antequera, for your great insights and discussion. And I'd like to thank you, our audience, for participating in this *eCase Challenge* on updates in diagnosis of irritable bowel syndrome.

This concludes our video *eCase Challenge* Number One. On behalf of Carol and myself, we hope that you enjoyed it, and thanks for joining us.

CLINICAL PEARL

Irritable bowel syndrome, IBS, is a prevalent condition, making it a common reason for primary care visits. The Rome IV criteria, which are used to diagnosis IBS, state that in order to qualify for diagnosis, patients should have abdominal pain on average at least 1 day per week in the last 3 months,

And associated with two or more of the criteria, relationship to defecation, association with a change in stool frequency or association with a change in stool form.

The diagnostic strategy for IBS is defined by a positive approach with minimal diagnostic testing, rather than one that actively excludes multiple other conditions.

It's essential to ensure that patients do not have any alarm symptoms that would indicate an alternate organic disease process and the need for a more extensive workup.

Once a diagnosis of IBS is made, patients should be classified into one of four subtypes based on the predominant type of stool on days with an abnormal stooling pattern.

These subtypes are IBS-C, IBS-D, IBS-M and IBS-unsubtyped. Classification into these categories helps to guide treatment.

Dietary and pharmacologic treatments are among the potential options for IBS management.

It is essential that clinicians are familiar with both recommended treatment options and those treatment options that are not recommended in order to provide evidence-based patient care.

References:

Begtrup LM, Engsbro AL, Kjeldsen J, et al. A positive diagnostic strategy is noninferior to a strategy of exclusion for patients with irritable bowel syndrome. *Clin Gastroenterol Hepatol.* 2013;11(8):956-62.e1. doi:10.1016/j.cgh.2012.12.038

Chey WD, Kurlander J, Eswaran S. Irritable bowel syndrome: a clinical review. *JAMA.* 2015;313(9):949-958. doi:10.1001/jama.2015.0954

Defrees DN, Bailey J. Irritable bowel syndrome: epidemiology, pathophysiology, diagnosis, and treatment. *Prim Care.* 2017;44(4):655-671. doi:10.1016/j.pop.2017.07.009

Dionne J, Ford AC, Yuan Y, et al. A systematic review and meta-analysis evaluating the efficacy of a gluten-free diet and a low FODMAPs diet in treating symptoms of irritable bowel syndrome. *Am J Gastroenterol.* 2018;113(9):1290-1300. doi:10.1038/s41395-018-0195-4

Halpin SJ, Ford AC. Prevalence of symptoms meeting criteria for irritable bowel syndrome in inflammatory bowel disease: systematic review and meta-analysis. *Am J Gastroenterol.* 2012;107(10):1474-1482. doi:10.1038/ajg.2012.260

Lacy BE, Patel NK. Rome Criteria and a diagnostic approach to irritable bowel syndrome. *J Clin Med.* 2017;6(11):99. Published 2017 Oct 26. doi:10.3390/jcm6110099

Lacy BE, Pimentel M, Brenner DM, et al. ACG clinical guideline: management of irritable bowel syndrome. *Am J Gastroenterol.* 2021;116(1):17-44. doi:10.14309/ajg.0000000000001036

Macaigne G, Lahmek P, Locher C, et al. Microscopic colitis or functional bowel disease with diarrhea: a French prospective multicenter study. *Am J Gastroenterol.* 2014;109(9):1461-1470. doi:10.1038/ajg.2014.182

Mearin F, Lacy BE, Chang L, et al. Bowel disorders [published online ahead of print, 2016 Feb 18]. *Gastroenterology.* 2016;S0016-5085(16)00222-5. doi:10.1053/j.gastro.2016.02.031

Palsson OS, Baggish J, Whitehead WE. Episodic nature of symptoms in irritable bowel syndrome. *Am J Gastroenterol.* 2014;109(9):1450-1460. doi:10.1038/ajg.2014.181

Pimentel M, Hwang L, Melmed GY, et al. New clinical method for distinguishing D-IBS from other gastrointestinal conditions causing diarrhea: the LA/IBS diagnostic strategy. *Dig Dis Sci.* 2010;55(1):145-149. doi:10.1007/s10620-008-0694-z

Veloso HG. FODMAP diet: what you need to know. Johns Hopkins Medicine. Accessed January 16, 2021. https://www.hopkinsmedicine.org/health/wellness-and-prevention/fodmap-diet-what-you-need-to-know

Weaver KR, Melkus GD, Henderson WA. Irritable bowel syndrome. *Am J Nurs.* 2017;117(6):48-55. doi:10.1097/01.NAJ.0000520253.57459.01

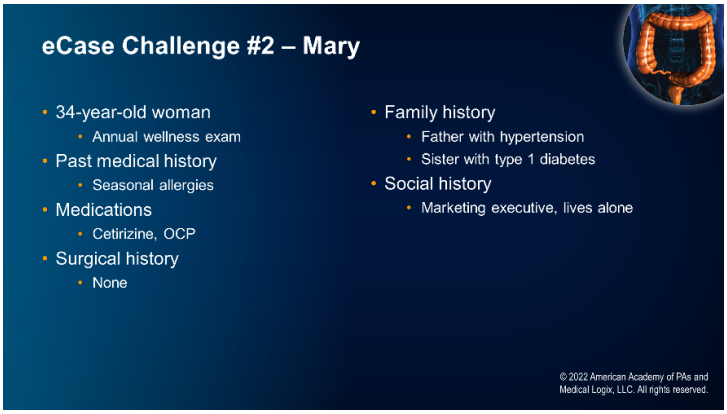
eCASE CHALLENGE #2

Rick Davis, PA-C: Hello, and welcome to this video *eCase Challenge*, "More Than a Gut Feeling: Optimizing Diagnosis and Care of Patients with IBS." I'm Rick Davis, a PA in the Division of Gastroenterology at the University of Florida in Gainesville. Joining me today is PA Carol Antequera. Carol is a PA in the department of Gastroenterology at the University of Miami.

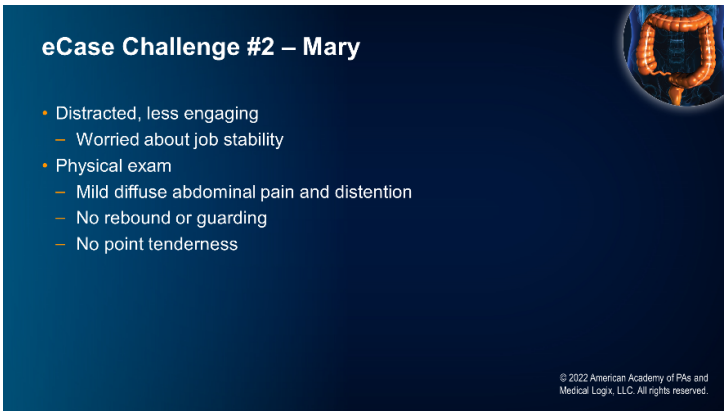
This CME activity consists of two *eCase Challenges*. This is our second *eCase Challenge*, and our patient is Mary. So, let's get started with the second case.

Mary is a 34-year-old who is presenting to her primary care PA today for an annual wellness exam. She reports that she has no concerns today and has been well overall for the past year. Mary has a history of seasonal allergies, for which she takes cetirizine, and she also takes an oral contraceptive pill. Other than these, she does not have any other medical problems and takes no other medications.

She has no surgical history, and her family history is significant for a father with hypertension and a sister with type 1 diabetes. She works as an executive at a marketing agency and lives by herself.



In talking with Mary during your physical exam, she seems to be distracted and less engaging than she usually is during your visits. When you inquire about how things are going at work, Mary sighs and tells you that things have been very stressful, with shakeups at the company and the loss of some important accounts recently. She relates that this has left her worried about the stability of her job.



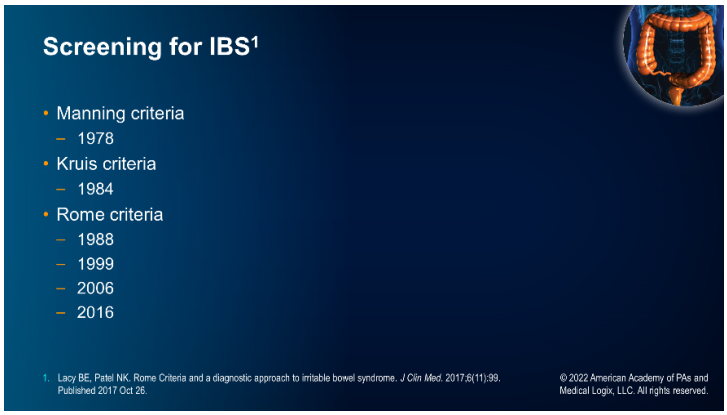
Her physical examination is normal, with the exception of some mild diffuse abdominal tenderness and distention. She has no rebound or guarding, and no point tenderness is noted. And given her history and physical exam findings, you wonder if Mary may have symptoms of irritable bowel syndrome, IBS.

This brings us to our first clinical question.

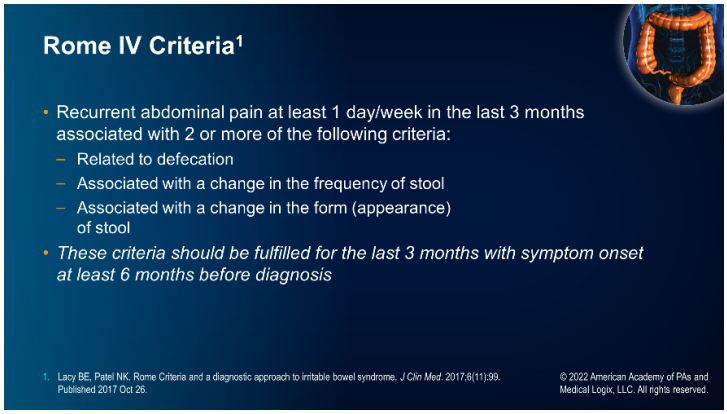
Which of the following questions would be the best next one to ask Mary?

A. Have you had any changes in your bowel habits since I last saw you?
B. Have you noticed any blood in your stool?
C. How many times per week are you having a bowel movement?
D. Is there anything else you would like to talk about today?

So, different screening tools have been used over the years to assess for IBS. The Manning criteria was first proposed in the late '70s, but asked about looser stools at the onset of the pain, frequency of bowel movements, and if pain was relieved after a bowel movement. This kind of fell out of favor and didn't really differentiate the different subtypes of IBS.



The Rome criteria, initially proposed at a conference in Rome in 1988, revised again in '99 and 2006, and the latest in 2016, the Rome IV criteria, describes recurrent abdominal pain at least one day per week in the last three months associated with two or more of the following criteria: It should be related to defecation and/or associated with a change in the frequency of stool or the appearance of the stool. And these criteria should be fulfilled for the last three months, with symptom onset at least 6 months before diagnosis.



Carol Antequera, PA-C: So, let's review the question posed, which asked, which of the following questions would be the best next one to ask Mary? The answer is (A) have you had any changes in your bowel movements since I last saw you?

Let's take a few moments to review why this is the best approach to learning more about Mary's signs and symptoms. First, if we are

considering whether Mary's stress and physical examination findings of mild diffuse abdominal tenderness and distention could point toward an underlying issue like IBS, we should be thinking about the Rome IV criteria and gearing for further questioning to elicit any symptoms in line with these.

It's important when considering a diagnosis of IBS to ask about any alarm symptoms a patient may be having that would point to an alternate organic diagnosis, such as inflammatory bowel disease. However, asking this question before eliciting more information about her bowel habits may not be useful.

It may be relevant to ask Mary how many times a week she is having a bowel movement, but without finding out if this is a new change or her typical pattern, this question really won't give us any further information to decide if she has underlying IBS.

In addition, stool consistency is often more pertinent to diagnosis than frequency, although it is always important to clarify if patients have other issues that they would like to discuss. Since Mary didn't bring up any GI concerns on her own, this will need to be asked about directly in order to avoid missing a potential diagnosis.

Since the Rome IV criteria relate to the presence of abdominal pain, frequency of abdominal pain, the relationship of the pain to defecation, and a change in the frequency or appearance of the stool, follow-up questions in this scenario should be directed toward uncovering more details related to this information.

In this case, further discussion with Mary reluctantly reveals that she has had new onset of constipation for the last 6 months, with only one or two hard bowel movements per week. This is a change from her previous bowel habits of a soft formed stool daily to every other day without discomfort.

Now that we know that Mary has constipation, let's take a few minutes now to review the Rome IV functional disorders of constipation. Chronic constipation affects 10 to 15% of the population, generally defined by symptoms that persist for at least three months.

The Rome IV criteria categorizes chronic constipation into four subtypes: functional constipation, meaning the patient does not fulfill IBS criteria; irritable bowel syndrome with constipation, included in the Rome IV criteria discussed earlier; or opioid-induced constipation, which is similar to functional constipation, but related to opioids; functional defecation disorders, which include inadequate defecatory propulsion and dyssynergic defecation.

Rick Davis: Carol, this is a good point. Maybe you could elaborate a little bit more on what exactly dyssynergic defecation is. We all know about this in GI world, but sometimes primary care may not be aware of this.

Carol Antequera: Absolutely, Rick. So, dyssynergic defecation is a defecatory disorder in which patients actually tighten their sphincter muscles of their rectum instead of relaxing when they're trying to have a bowel movement. And so basically what happens is, the patients are pushing and straining, and the stool's not coming out, because they're not appropriately relaxing their sphincter.

Rick Davis: Yes, and that's an important point, because many times, if you don't rule that out or ask those particular questions, it may lead you down a different path towards diagnosis and management.

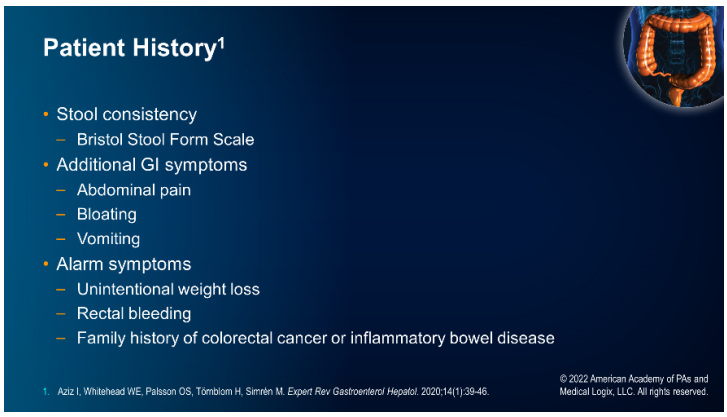
Carol Antequera: Absolutely, and there are times in which patients have IBS with constipation and also defecatory dysfunctions, such as dyssynergic defecation, and so they should both be treated accordingly.

Rick Davis: So, in your patients with constipation, further information about their stool consistency -- we often use the Bristol Stool Form Scale, which is a scale of 1 to 7. I understand you can get laminated cards and even order a coffee cup that has the Bristol Stool Form Scale on it. I think a lot of our patients are searching for a vocabulary, they're not used to talking about their stools, so some patients feel a little more comfortable coming in with a number rather than describing it.

Carol Antequera: Yes, we can use little cards, or you can actually Google Bristol Stool Form Scale, and it pops up on your screen. And so, you know, patients can choose, based on the pictures that they see, which type of stool they are having.

Rick Davis: Yes. Visual aids are often helpful and break the ice in talking about your stool.

Carol Antequera: There is also a significant overlap between functional constipation and IBS, with the main distinction being that functional constipation does not meet the full criteria for IBS with constipation, and pain is more predominant in IBS with constipation. So those patients with functional constipation lack that pain symptom, so that does not allow them to be classified as irritable bowel syndrome, because they do not meet the Rome IV criteria.



Rick Davis: And that would affect their treatment, as well.

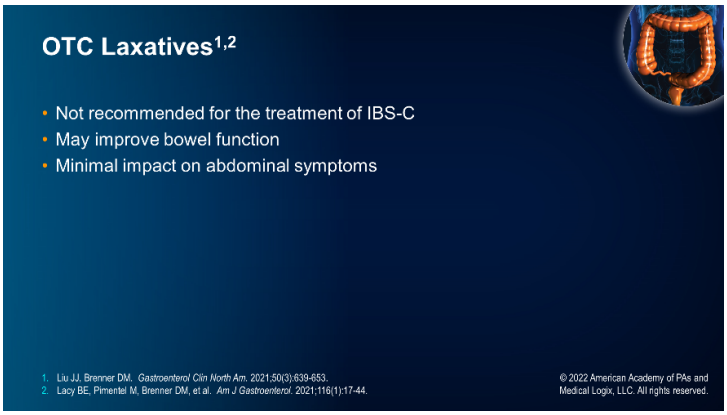
Carol Antequera: Correct, correct. And so, based on this, Mary seems to fit best with the diagnosis of irritable bowel syndrome with constipation, since she has abdominal pain associated with every bowel movement, and this is occurring at least once per week. Further work up includes a CBC, which is normal.

And before we present more of Mary's case, we have a new clinical question.

Which of the following medications would be an appropriate choice for Mary at this time?

A. Alosetron
B. Lubiprostone
C. Polyethylene glycol
D. Rifaximin

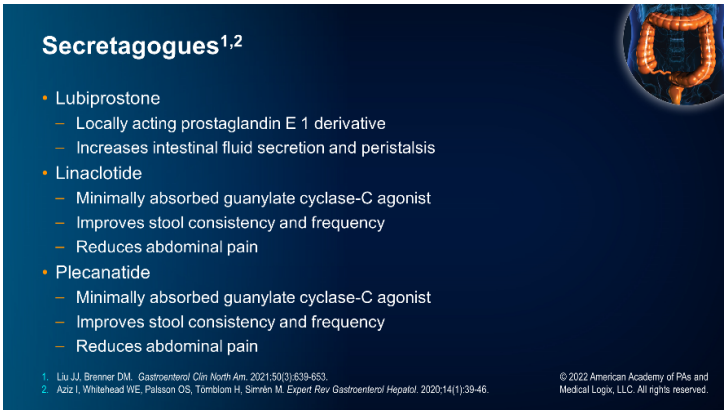
Rick Davis: So, Carol, there are multiple pharmacologic options for the treatment of IBS-C. Certainly, over-the-counter laxatives are not recommended for IBS-C, but more so for chronic constipation or functional constipation. They may improve bowel function, but minimal impact on the abdominal, especially, pain symptoms.



Then there's the whole category of secretagogues, such as lubiprostone, which is a locally acting prostaglandin E1 derivative, and it increases intestinal fluid secretion and peristalsis through chloride channels in the distal small intestine.

Linaclotide, minimally absorbed. It's a guanylate cyclase-C agonist. It can improve stool consistency, frequency but also, importantly, reduces abdominal pain. And interestingly, the higher dose is used for IBS-C compared to chronic constipation, which is the lower dose.

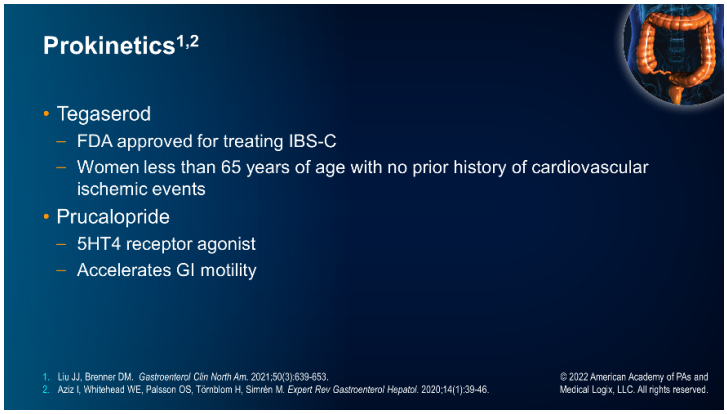
And then plecanatide, which is a newer agent in that class of guanylate cyclase-C agonists, which also improves stool frequency, reduces abdominal pain.



And then tell us a little bit about the prokinetics that are available for IBS.

Carol Antequera: There are two prokinetics. One is tegaserod. And this medication was FDA approved in treating IBS-C, specifically women less than 65 years of age with no prior history of cardiovascular or ischemic events. So this medication is really approved mostly for women, and so there is a very limited population in which this medication can be used in.

Prucalopride is one of the newer medications, and it is a 5-HT4 receptor agonist, and it accelerates GI motility. So this medication is very useful in helping patients with IBS-C, and it does have significant statistical improvement in their symptoms.



Rick Davis: So let's review the last question, which asked, which of the following medications would be an appropriate choice for Mary at this time? The correct answer is (B) lubiprostone. As we just discussed, OTC laxatives are not the best choice for patients with IBS, since they treat only constipation and not the other symptoms, like bloating and distention.

Alosetron and rifaximin are appropriate choices for treatment of IBS-D, but not IBS-C. Lubiprostone is an appropriate choice for first-line treatment for IBS-C. Furthermore, any of the medications just discussed would also be appropriate. At this time, there is not enough head-to-head clinical data on these medicines to recommend one over the other or develop a practice algorithm.

So, Mary is started on lubiprostone and asked to return for a follow-up visit in one month to see how she is responding. This brings us to our next clinical question.

Which of the following adverse effects is most likely to occur with lubiprostone?

A. Headache
B. Insomnia
C. Nausea
D. Rash

So, Carol, tell us a little bit more about the side effects of some of these medications.

Carol Antequera: Yes. So, with lubiprostone, nausea is the most common adverse effect, and this was shown in the phase three clinical trials that showed about 8% of patients exhibited symptoms of nausea. The second most common adverse effect was diarrhea, followed by abdominal distention. And so rates of nausea can be a little bit higher if they're taken without food, so it is recommended that this medication is taken with a meal and at least eight ounces of fluid.

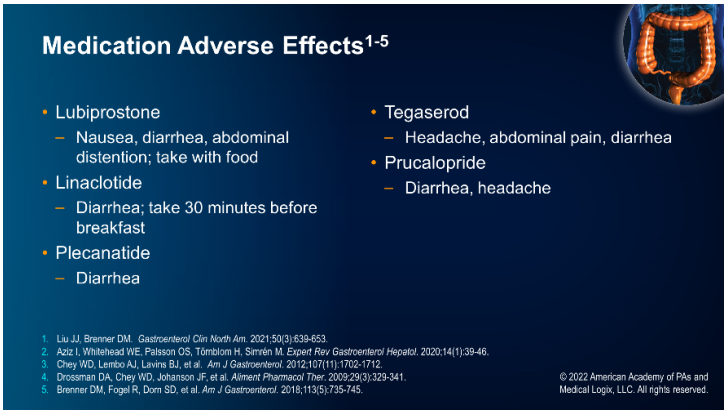
Our next medication, linaclotide, was shown that diarrhea was actually the most common adverse effect, and this occurred in up to 20% of the study participants. Again, in this medication, adverse events can be limited by taking the medication 30 to 60 minutes before breakfast. So, we always recommend that patients take this first thing in the morning, at least 30 to 60 minutes prior to their first meal.

For plecanatide, diarrhea was also the most common adverse event, and the rates of diarrhea and the study withdrawal were similar to linaclotide. So again, for plecanatide, we recommend that patients take this medication early in the morning, prior to their first meal.

With the medication tegaserod, the most common adverse event was headache, in about 14.2% of the patients, followed by abdominal pain and diarrhea.

For the patients who take plecanatide, they also can exhibit symptoms of diarrhea and headache as the most common side effect, but these often resolve after the first week of treatment.

With prucalopride, diarrhea and headache were the most common, but these symptoms often resolve after the first week of treatment.



Rick Davis: And Carol, I don't know in your practice, there is a bit of a black box warning now for both prucalopride and tegaserod regarding patients with worsening depression or suicidal ideation. And so that should be monitored, and if that occurs, then the patient should be taken off the medication.

I actually had one patient just today who had worsening depression and some suicidal ideation without a plan and was seeing a psychiatrist, but didn't put the two together. One of my colleagues had started her on that medication. So, it does bear a monitoring.

Carol Antequera: That is true, Rick, and thank you for that. Yes, that's true.

So, let's review the correct answer to the clinical question which asked, which of the following adverse events is most likely to occur with lubiprostone? Based on that information that was just discussed, the correct answer is (C) nausea.

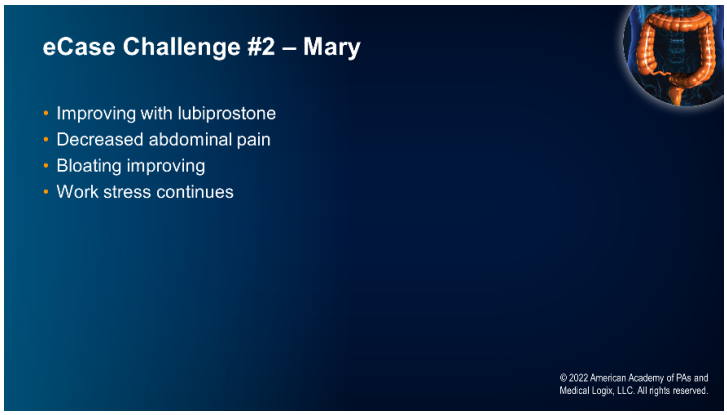
Headache can occur with tegaserod and prucalopride, but is not known to be common with lubiprostone. Insomnia and rash are not documented adverse events of any of the IBS-C medication options.

Overall, diarrhea is the most common side effect of these medications, and it's important to discuss the potential side effects with the patients, as well as proper medication administration, to help avoid these side effects.

Let's continue our case. After her 1-month follow-up visit, Mary states that her symptoms are improving with lubiprostone. She is now having bowel movements three times per week, and they are softer than before. Her abdominal pain has also decreased in frequency and intensity, and her bloating is improved, but not completely resolved.

She does report experiencing some nausea when she takes her medication without food, but recognizes this is improved when she takes it with food and tries to remember to do so. She has also increased her intake of soluble fiber. She has been having occasional loose stools.

Mary reports today that she is still under immense stress at her job. She also notes that her stress level is affected by her IBS with constipation, because even though her symptoms are improving overall, she remains worried about when they will occur, and if this will interfere with her work.



This brings us to our next clinical question.

Which of the following behavioral interventions is most likely to provide benefit for Mary?

A. Gut-directed psychotherapy
B. Integrative therapy
C. Somatic therapy
D. Trauma-informed care

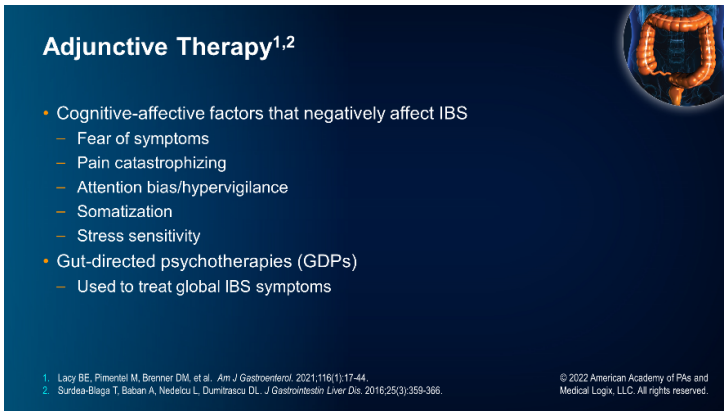
Rick Davis: So, Carol, cognitive affective factors negatively affect IBS in many patients. Some of them are fear of the symptoms. Some of them are associated with catastrophizing, somatization, even panic attacks and anxiety can certainly increase or trigger an IBS episode.

So, the American College of Gastroenterology recent clinical guidelines recommend that gut-directed psychotherapies be used to treat global IBS symptoms, and some of these include cognitive behavioral therapy, or CBT. Do you use this in your practice, and what sort of therapist would you refer your patients to?

Carol Antequera: Yes, Rick. This is a wonderful adjunct therapy, and I do recommend cognitive behavioral therapy to many of our IBS patients, in fact, most of them, because it has been shown to show benefit in improving their symptoms overall.

So, we do have a psychotherapist that we refer patients to here at our center. But for patients who are seeing their doctors and PAs in the community, they can also seek care with a psychotherapist.

Rick Davis: Great. And it's important to kind of know what your referral base is in your community. But it's very, very helpful. I found that some of my colleagues, probably some of the senior colleagues, tend to use referral to a psychotherapist or clinical health psychologist as a treatment of last resort.



But I agree with you. I think it's more adjunctive. It should be introduced earlier rather than later, and especially in patients that have anxiety, depression, stressful situations that are triggers for their IBS.

Carol Antequera: More and more, now, Rick, we are seeing some GI-specific behavioral therapists and psychotherapists, and so hopefully there will be more of these trained individuals who are really trained more specifically for patients with irritable bowel syndrome and other gut-related diseases that can benefit from therapy.

Rick Davis: That's excellent. Yes. I think some of the new terminology is brain-gut dysfunction that will be coming out. I have a feeling that's going to be in the next iteration of the Rome criteria.

So, let's review the correct answer to our clinical question, which of the following behavioral interventions is most likely to provide benefit for Mary? The correct answer is (A) gut-directed psychotherapy.

Mary does not have a concurrent mental health diagnosis, so is more likely to benefit from GDP than a patient that does. Since she is having symptoms of worry regarding her IBS symptoms, this behavioral intervention may help her manage this aspect of the disease.

At this time, you recommend that Mary continue to take lubiprostone and refer her for GDP. This brings us to our last clinical question.

When should Mary schedule her next follow-up appointment with you?

- **A.** 1 year
- **B.** 2 weeks
- **C.** 3 months
- **D.** As needed

So, Carol, can you comment on the strength of the clinician patient-relationship in treating patients with irritable bowel syndrome?

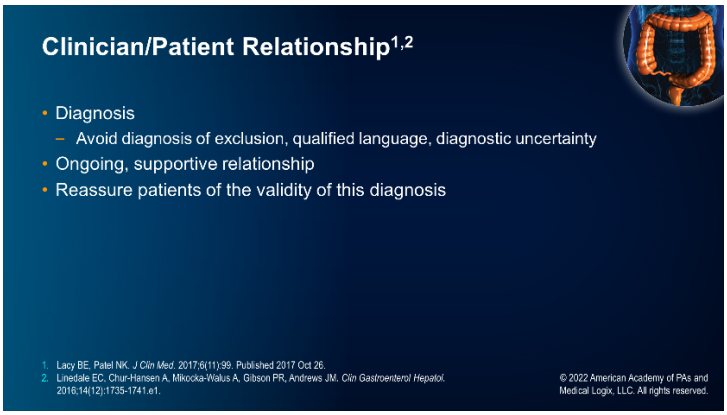
Carol Antequera: I'm glad you bring up this point, Rick. So, this is actually of the utmost importance in the diagnosis and management of patients with IBS. This is first apparent during the diagnosis process, and so many clinicians still treat IBS as a diagnosis of exclusion.

But clinicians are more likely to use qualified language when presenting a patient with a diagnosis of IBS, and so they may say phrases such as "may be having" or "working impression," and so this communication of diagnostic uncertainty can prevent patients from accepting the diagnosis and lead to seeking additional options and testing.

And so really, the relationship and the strength of the relationship between the clinician and the patient is very important to be able to help them understand their condition.

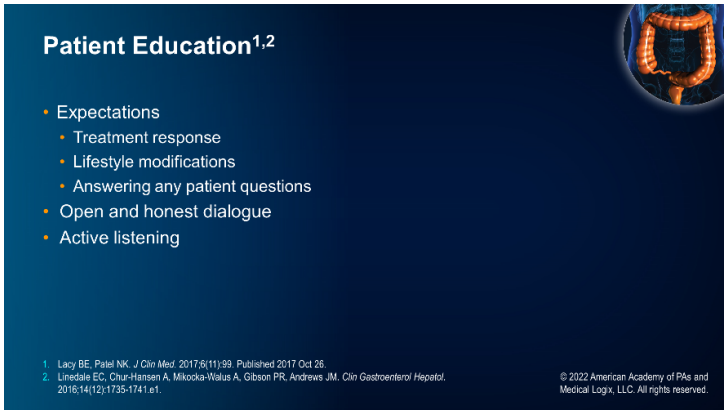
Ongoing supportive relationship with the clinician is necessary for disease management, and patients may be reluctant to discuss symptoms, so they also need to have trust with their provider. And this really needs to be built upon.

Once the diagnosis is established, clinicians must reassure the patients of the validity of their diagnosis, and we can do this by explaining current theories and research surrounding cellular and molecular mechanisms of the disease as appropriate, and may help patients to understand that this is a true pathology.



I don't know about you, Rick, but sometimes I do have some trouble trying to explain to patients their diagnosis of IBS.

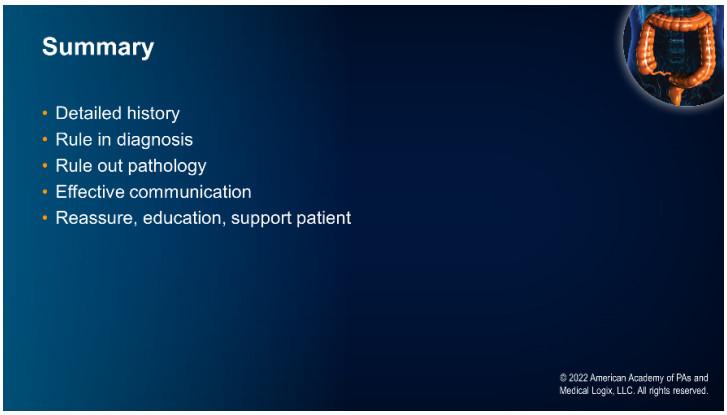
Rick Davis: Yes, we do, as well, and right away some patients will say, "So you're saying this is all in my head?" And it's like, "Well, no it's actually in your gut, but your head is speaking to your gut." But I think patient education is key, and depending on, certainly, what the level of their health literacy is, going into the different etiologies and pathophysiology and research can be very helpful. I know it's extremely helpful in my graduate student population. They're very interested in the details.



Carol Antequera: Yes, that's true. And so returning to our question, the best treatment interval for Mary would be three months. Two weeks is probably too soon to see a response from the GDP. One year is too long to go before reevaluating her symptoms, especially in light of the new addition of therapy. As needed would also not be appropriate, as regular follow-up is required to monitor progress.

When you see Mary back for her three month follow up visit, she reports that she is doing very well. Her symptoms have improved, and she is experiencing abdominal pain much less frequently. She has found the GDP helpful in developing coping mechanisms, and she is also happy to share today that she has started a new job last week, and the work environment feels far less stressful than with her last position.

As we bring our case to a close, we should remember that IBS diagnosis requires extensive history-taking on the part of the clinician, both to rule in the diagnosis and to rule out any underlying organic pathology. And once a diagnosis is made, effective communication is necessary to reassure, educate and support the patient.



I'd like to thank our expert, Carol Antequera, for your great insights and discussion. And I'd like to thank you, our audience, for participating in this *eCase Challenge* on updates in the diagnosis of irritable bowel syndrome.

This concludes our video *eCase Challenge*. On behalf of Carol and myself, we hope that you enjoyed it, and thanks for joining us.

.

CLINICAL PEARL

Irritable bowel syndrome, IBS, can present with diarrhea, constipation, or a combination of both of these symptoms. Patients may be reluctant to offer information about their symptoms, and a high level of suspicion and thorough history are often required to make an accurate diagnosis.

Diagnosis should utilize the Rome IV criteria, and in the case of possible IBS with constipation, should focus on differentiating between IBS with constipation and functional constipation, which have multiple overlapping characteristics.

For patients diagnosed with IBS with constipation, there are a number of pharmacological options to choose from, with no clear preference for one over the others in most circumstances. Common adverse effects of these treatments include diarrhea, nausea and headache. Nonpharmacological treatment options, such as diet changes and gut-directed psychotherapy, offer additional treatment modalities for a holistic approach to the varied symptoms of IBS.

Once a diagnosis has been made and treatment initiated, it is essential to maintain regular follow-up with the patient. Keeping an open line of communication allows for timely treatment adjustments and offers reassurance to patients.

References:

Aziz I, Whitehead WE, Palsson OS, et al. An approach to the diagnosis and management of Rome IV functional disorders of chronic constipation. *Expert Rev Gastroenterol Hepatol.* 2020;14(1):39-46. doi:10.1080/17474124.2020.1708718

Black CJ, Thakur ER, Houghton LA, et al. Efficacy of psychological therapies for irritable bowel syndrome: systematic review and network meta-analysis. *Gut.* 2020;69(8):1441-1451. doi:10.1136/gutjnl-2020-321191

Brenner DM, Fogel R, Dorn SD, et al. Efficacy, safety, and tolerability of plecanatide in patients with irritable bowel syndrome with constipation: results of two phase 3 randomized clinical trials. *Am J Gastroenterol.* 2018;113(5):735-745. doi:10.1038/s41395-018-0026-7

Chey WD, Lembo AJ, Lavins BJ, et al. Linaclotide for irritable bowel syndrome with constipation: a 26-week, randomized, double-blind, placebo-controlled trial to evaluate efficacy and safety. *Am J Gastroenterol.* 2012;107(11):1702-1712. doi:10.1038/ajg.2012.254

Chey WD, Lembo AJ, Rosenbaum DP. Efficacy of tenapanor in treating patients with irritable bowel syndrome with constipation: a 12-week, placebo-controlled phase 3 trial (T3MPO-1). *Am J Gastroenterol.* 2020;115(2):281-293. doi:10.14309/ajg.0000000000000516

Drossman DA, Chey WD, Johanson JF, et al. Clinical trial: lubiprostone in patients with constipation-associated irritable bowel syndrome--results of two randomized, placebo-controlled studies. *Aliment Pharmacol Ther.* 2009;29(3):329-341. doi:10.1111/j.1365-2036.2008.03881.x

Ford AC, Quigley EM, Lacy BE, et al. Effect of antidepressants and psychological therapies, including hypnotherapy, in irritable bowel syndrome: systematic review and meta-analysis. *Am J Gastroenterol.* 2014;109(9):1350-1366. doi:10.1038/ajg.2014.148

Keefer L, CW Ko, AC Ford. AGA Clinical practice update on management of chronic gastrointestinal pain in disorders of Gut-Brain interaction: Expert Review. *Clin Gastroenterol Hepatol.* 2021;19(12): 2481-88.

Lacy BE, Patel NK. Rome Criteria and a diagnostic approach to irritable bowel syndrome. *J Clin Med.* 2017;6(11):99. Published 2017 Oct 26. doi:10.3390/jcm6110099

Lacy BE, Pimentel M, Brenner DM, et al. ACG clinical guideline: management of irritable bowel syndrome. *Am J Gastroenterol.* 2021;116(1):17-44. doi:10.14309/ajg.0000000000001036

Linedale EC, Chur-Hansen A, Mikocka-Walus A, et al. Uncertain diagnostic language affects further studies, endoscopies, and repeat consultations for patients with functional gastrointestinal disorders. *Clin Gastroenterol Hepatol.* 2016;14(12):1735-1741.e1. doi:10.1016/j.cgh.2016.06.030

Liu JJ, Brenner DM. Focus on pharmacotherapy for irritable bowel syndrome with constipation. *Gastroenterol Clin North Am*. 2021;50(3):639-653. doi:10.1016/j.gtc.2021.04.004

Stanghellini V. Functional dyspepsia and irritable bowel syndrome: beyond Rome IV. *Dig Dis*. 2017;35 Suppl 1:14-17. doi:10.1159/000485408

Surdea-Blaga T, Baban A, Nedelcu L, et al. Psychological interventions for irritable bowel syndrome. *J Gastrointestin Liver Dis*. 2016;25(3):359-366. doi:10.15403/jgld.2014.1121.253.ibs

CME POST-TEST: Participants must: 1) read the educational objectives and faculty disclosures; 2) study the educational materials; 3) complete the post assessments in Learning Central. See page 2 for further information.

Question #1

Which of the following is considered an alarm symptom that would warrant further investigation in a patient with suspected irritable bowel syndrome (IBS)?

A. Abdominal pain associated with defecation
B. Family history of colon cancer
C. Presence of symptoms for >6 months
D. Symptom onset before age 50

Question #2

What diagnostic study is indicated for all patients with suspected irritable bowel syndrome (IBS)?

A. Celiac panel
B. Complete blood count (CBC)
C. Food allergy testing
D. Stool culture

Question #3

Which of the following foods is known to be a trigger of irritable bowel syndrome (IBS)?

A. Fish
B. Nuts
C. Soy
D. Wheat

Question #4

According to the Rome IV criteria, what is the minimum number of days per week that abdominal pain should occur during a 3-month period in order to make a diagnosis of irritable bowel syndrome?

A. 1
B. 2
C. 3
D. 4

Question #5

Which of the following medications is an appropriate treatment choice for a patient with IBS-D?

A. Cholestyramine
B. Hyoscine
C. Loperamide
D. Rifaximin

Question #6

Which of the following medications used in the treatment of irritable bowel syndrome (IBS) has a potential adverse effect of nausea?

A. Linaclotide
B. Lubiprostone
C. Prucalopride
D. Tegaserod

Question #7

Which of the following is a type of chronic constipation defined by Rome IV?

A. Congenital constipation
B. Diet-related constipation
C. Functional defecation disorder
D. Medication-induced constipation

Question #8

Which of the following patients may be an appropriate candidate for treatment with tegaserod?

A. A 55-year-old man
B. A 55-year-old woman
C. A 75-year-old man
D. A 75-year-old woman

Question #9

Which of the following adjunctive therapies may be useful for the treatment of irritable bowel syndrome (IBS)?

A. Cognitive behavioral therapy
B. Exposure therapy
C. Mindfulness-based therapy
D. Psychoanalytic therapy

Question #10

Which of the following medications used in the treatment of irritable bowel syndrome (IBS) is a 5HT4receptor agonist?

A. Linaclotide
B. Lubiprostone
C. Nortriptyline
D. Prucalopride

Clinical Dialogues are video-based moderated discussions featuring leading experts and are designed to engage the users and deliver the most up-to-date educationally relevant program possible. ***Clinical Dialogues*** **provide AAPA Category 1 CME credit**.

eCase Challenges are video- or text-based case programs where PAs are presented with challenging case scenarios and are asked to make patient management decisions. Video ***eCase Challenges*** **provide AAPA Category 1 Self-Assessment CME credit while printed *eCase Challenges* provide AAPA Category 1 CME credit**.

The following certified programs offer PAs a total of 3.25 AAPA Category 1 CME credits and 5.25 AAPA Category 1 Self-Assessment CME credits:

- *Managing Patients with Osteoporosis: Staying Current with Updated Guidelines*
- *Optimizing Patient Care in Psoriasis and Psoriatic Arthritis: Integrating Management to Improve Outcomes*
- *Getting Ahead of Migraine: Best Practices for Migraine Treatment and Prevention*
- *Updates in the Objective Diagnosis and Evidence-Based Management of IBD*
- *HPV and Cancer: Understanding Viral Infection and Cancer Prevention*
- *More Than a Gut Feeling: Optimizing Diagnosis and Care of Patients with IBS*

Access the *Clinical Dialogue and eCase Challenge* Library by visiting cme.aapa.org and locate the "*Clinical Dialogues and eCase Challenges*" link within the Featured section of Learning Central.

LEARNING CENTRAL