Functional Gastrointestinal Disorders: Evaluation and Management
"Functional Abdominal Pain"

What You Need to Know

- Patients diagnosed with functional abdominal pain have high numbers of emergency room visits, hospital admissions, and readmissions, as well as increased length of stay, lost productivity, and reduced quality of life.
- Some patients have organic gastrointestinal disorders due to structural, inflammatory, or neoplastic conditions leading to abdominal pain. Once these have been ruled out, the patients likely have one of the abdominal pain syndromes summarized in **Table 1**.

The goal of this guideline is to provide a guide for standardization of care to improve morbidity, mortality, resource utilization and efficiency of care for patients in which no diagnosis other than functional abdominal pain can be made.

- Opioids are **NOT** recommended for management of abdominal pain syndromes
- CT Scans are **NOT** routinely recommended
- Most abdominal pain syndrome patients should be treated as an outpatient
- This guideline is for diagnosis of exclusion and may require chart review for previous workup

Table 1: Abdominal Pain Syndromes

Centrally Mediated Abdominal Pain *Formerly: Functional Abdominal Pain*	• Continuous, nearly continuous, or frequently recurring abdominal pain • Pain does not change with eating, bowel movements, menses or with change in position
Opiate-Induced Gastrointestinal Hyperalgesia/ Narcotic Bowel Syndrome (NBS)	• Chronic or frequently recurring abdominal pain that progressively and somewhat paradoxically increases despite continuing or escalating doses of opioids prescribed in an effort to relieve the pain
Irritable Bowel Syndrome	• Abdominal pain at least once a week • Change in stool frequency or stool consistency or both from usual • Change in abdominal pain related to defecation
Cyclic Vomiting	• Recurrent episodes of severe nausea and vomiting interspersed with symptom-free periods • Abdominal pain accompanies flare-ups and can be severe • Triggers: infections, psychologic stress, lack of sleep, motion sickness, physical exhaustion, menses and foods like chocolate and cheese • Often associated with Cannabis use
Abdominal Wall Pain	• Pain worse with activity e.g., lifting or twisting, with laying on the affected side, wakes up patient from sleep • Pain less with rest, with local application of heat • Pain localizable with one fingertip • Positive physical exam sign is the Carnett's sign (with head or leg-raising)
Gastroparesis	• Chronic symptoms including nausea, vomiting, feeling very full after eating, inability to finish a regular sized meal, visible abdominal distension, anorexia, and weight loss • Abdominal pain is often present and worse post-prandially • Delayed gastric emptying: percent emptied from stomach 4 hours after a standard meal is less than 90%
Functional Dyspepsia	• Chronic symptoms of post-prandial fullness and early satiety • Epigastric pain or burning • No evidence of structural disease
Related OSUWMC Guidelines: Lower GI Bleed Guideline; Upper GI Bleed Guideline; Variceal Bleeding Guideline; Inflammatory Bowel Disease Severe Colitis Guideline	

Patients with Non-Specific or Recurrent Abdominal Pain

Diagnostic Tests	
Diagnostic tests should be guided by the history and physical examination. If vitals are reassuring and exam is non-specific, consider the following work-up	
ED Labs	• Chem 7, CBC, lipase, urinalysis, and lactate • Obtain toxicology screen urine / UDRG • If diarrhea (and not on stool softeners/laxatives) consider C. difficile PCR (see *C. difficile* guideline) • Consider serum ESR and CRP if inflammatory cause suspected • Obtain beta-HCG for women of childbearing age • Celiac serologies (IgA- tissue transglutaminase, total IgA) and stool calprotectin are recommended in patients who have symptoms suggestive of IBS-diarrhea because of significantly higher seropositivity for celiac disease in IBS-D (about 6%) than in the general population
Imaging	• Consider Abdominal X-ray if concerns for obstruction (sensitivity is limited for partial obstruction) • Abdominal CT and/or Abdomen and Pelvis CT are **NOT** routinely needed UNLESS concerned for acute process OR no prior CT for abdominal pain • In women of childbearing age and symptoms localized to the pelvis, consider pelvic ultrasound **NOTE:** if patient has had unremarkable CT abdomen/pelvis, EGD and colonoscopy that were normal in the past year, and there are no new **red flag symptoms**, these test generally do not need to be repeated

ED Management	**Medications – consider the following:**
	• Avoid opioids due to likelihood of addiction and possibility of narcotic bowel syndrome
	• Offer symptomatic management for pain and nausea
	  ○ Acetaminophen, trial of ibuprofen or IV/IM ketorolac (if PO not tolerated) if no contraindications to NSAIDs
	  ○ 1 liter of Ringer lactate IV over 1-2 hours to help reduce nausea and vomiting
	  ○ 4-8mg IV ondansetron or oral prochlorperazine for aggressive treatment of nausea
	  ○ Droperidol, sucralfate, GI cocktail
	Other considerations
	• Oral Challenge (e.g., 4-6 ounces of liquid and crackers)
	• Give heating pad prescription for patients with abdominal pain
	• Pull OARRS report for all patients on chronic opioids
	• Add Abdominal Pain Syndrome diagnosis to the Patient Problem List if determined after assessment
	• **Red flag symptoms** for possible GI bleeding (e.g., hematochezia, melena, coffee ground emesis or rectal bleeding, more than 5% unintentional weight loss, or new or acute anemia)
	  ○ If patient has **red flag symptoms** and is unstable, admit and order GI Consult
	  ○ If patient has **red flag symptoms** and is stable, place in observation unit and order GI consult
	• If patient has NO red flag symptoms, is stable, and has an OSU PCP, consider e-consult to GI
	• If patient has NO red flag symptoms, is stable, and does not have an OSU PCP, consider outpatient referral to GI

Clinical Indications for Admission (Source: Milliman Care Guidelines for Undiagnosed Abdominal Pain)	
Observation Care	**Inpatient Care**
Observation care is indicated for **1 or more** of the following: • Vital sign abnormality • Pain unrelieved by ED care • Patient unable to maintain hydration status • Finding on examination (e.g., increasing tenderness, focal abdominal finding) or diagnostic test (e.g., air fluid level on x-ray) warranting continued evaluation	Admission is indicated for **1 or more** of the following: • Hemodynamic instability • Severe pain requiring acute inpatient management • Peritoneal signs • Identification of etiology or finding that requires inpatient care (e.g., aortic dissection, bowel perforation, bowel ischemia, visceral organ torsion, intestinal obstruction) • Evaluation requires patient to not eat or drink for long periods (e.g., more than 24 hrs) • Inability to maintain oral hydration (e.g., needs IV fluid support) that persists after observation care • Suspected toxic megacolon • Bacteremia • Procedure needed that cannot be performed on ambulatory basis

Inpatient Management (Goal LOS 1-2 Days)

Hospital Day 1: Acute Pain Unrelieved by Symptomatic Treatment

- Screen for more imminently dangerous structural or physiologic causes of abdominal pain requiring acute hospital intervention, if not completed in emergency department
- Ensure hydration and level of functioning would support safe discharge to an outpatient care setting
- Review medical records to determine patient behaviors and previous management
- Consider collateral history from family/significant others
- Treat nausea, vomiting, diarrhea/constipation as these can exacerbate abdominal pain
    - See **Appendix B** Pharmacologic Management of Associated Symptoms
- NPO, IV Fluids
- Initial pain relief should rely on non-pharmacologic approaches and non-opioid medications – See **Appendix A** pain management recommendations
    - If no relief by non-opioid medications, judicious use of oral or if absolutely necessary, IV opioids
- Rates of co-occurring depression and anxiety are increased in this population. Dynamic monitoring of patient participation and distress throughout admission is key.
- Consider post-pyloric small bowel feeding tube for those with weight loss due to pain, nausea or vomiting or in patients unable to keep food down or fluids due to the severity of their symptoms

Discharge Planning

- Refer to behavioral health for patients who have psychologic factors like anxiety, depression, PTSD AND GI symptoms for cognitive behavioral therapy
- Consider referral to outpatient Psychiatry for patients with anxiety and depression despite current treatment
- Consider ambulatory referral to the GI Motility clinic
- Consider consult to IP Dietitian or placement of an AMB Referral to Nutrition
    - If diet changes require education, consider a referral to IP Dietitian
    - If patient has a small bowel feeding tube, inform an outpatient GI dietician to ensure follow-up and ongoing nutrition care
- For those with chronic abdominal pain, place outpatient referral to pelvic floor physical therapy for evaluation and treatment
- Referral to Comprehensive Pain and Headache Center
- Referral to Addiction Medicine for assessment as necessary
- Referral to Integrative Medicine
- Follow-up with Primary Care Provider (1 week)

***NOTE**: If given another diagnosis, the patient no longer meets criteria for guideline*

Consider Additional Screening	Consults for Consideration
• Patient Health Questionnaire -9 (PHQ-9) Depression Screening (see Inpatient Depression CPG) • Generalized Anxiety Disorder 7-item (GAD-7) scale • NIDA TAPS Screening Tool (Addiction Screening) • Malnutrition Screening Tool (MST) (in IHIS) • Abdominal Wall Pain Questionnaire (in IHIS)	• **Nutrition** Consult for weight loss; post-pyloric enteral nutrition recommendations if appropriate • **Psychiatry** Consult for severe or treatment resistant anxiety and depression symptoms, or if active symptoms are preventing safe discharge, post-discharge follow-up visit • **Medication Assisted Treatment (MAT)** Consult if opioid use disorder is suspected • **Social Work / Case Management assistance to coordinate post-discharge tube feed with home infusion provider** • **Gastroenterology** consult if admitted with uncontrolled pain with concern for occult intra-abdominal pathology or previously incomplete work-up

Hospital Day 2: Pain Improved or Managed / Surgery Not Indicated

• Liquid or advance diet as tolerated • Oral hydration • Oral medications	• **Patient Education:** Review handouts to promote patient understanding of their pain syndrome and likely triggers

Quality Measures

- Percent of patients discharged from the ED
- Length of Hospital Stay
- ED return visits within 30 days
- Readmission rate within 30 days
- Abdomen and Pelvis CT rates
- PO and IV opioid use
- EGD or colonoscopy with abnormal findings

Tools and Resources

- Ohio Automated RX Reporting System (OARRS)
- OARRS Guideline
- When to Check OARRS
- OSUWMC Prescribing Controlled Substances and the Use of the OARRS Database Policy
- OSUWMC Inpatient Management of Potential Opioid Abuse and Diversion Guideline
- Nursing Standard of Practice: Pain Management
- OSUWMC Aromatherapy Policy
- OSUWMC Guided Imagery Policy
- OSUWMC Therapeutic Touch Policy
- Local Community Resources for Opiate Treatment
- CDC Pocket Guide: Tapering Opioids for Chronic Pain
- Interagency Guideline on Prescribing Opioids for Pain

IHIS Resources

- OSU IP ED: ACUTE ABDOMINAL PAIN [2237]
- OSU IP ED: EDOBS ABDOMINAL PAIN [2241]
- OSU IP ED: ABDOMINAL PAIN TRIAGE PROTOCOL [2260]
- OSU IP GEN: FUNCTIONAL ABDOMINAL PAIN [7211]
- Malnutrition Screening Tool (MST) flowsheet
- Abdominal Pain Questionnaire flowsheet

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Guideline Approved

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Disclaimer: *Clinical practice guidelines and algorithms at The Ohio State University Wexner Medical Center (OSUWMC) are standards that are intended to provide general guidance to clinicians. Patient choice and clinician judgment must remain central to the selection of diagnostic tests and therapy. OSUWMC's guidelines and algorithms are reviewed periodically for consistency with new evidence; however, new developments may not be represented.*

Appendix A: Pain Management

Non-Pharmacological

- Successful treatment of functional pain requires an effective patient-physician relationship in which treatment goals are set.
- Many patients also report relief with a topical heat application, such as a heating pad or warm water bottle.
- Studies are limited but efforts to reduce stress (through exercise/yoga and meditation) are recommended.
- OSU Integrative Medicine offers a variety of meditation and relaxation recordings which patients can use for free. Successful treatment of functional pain requires an effective patient-physician relationship in which treatment goals are set.

Pharmacological

- Consider acetaminophen or trial of NSAIDs
- Low-dose Tricyclic Antidepressants provide the most analgesic benefit (Table 1). Start with low dose TCAs or SNRIs. Reevaluate benefit at 4-6 weeks. If limited benefit, increase dose and reevaluate in 4-6 weeks. If still ineffective or minimally effective, consider changing agents or adding an augmenting agent.
- Avoid opioids (potential to induce narcotic bowel syndrome).
    - Consider contribution of central hyperalgesia related to Narcotic Bowel Syndrome in patients taking >75 Oral Morphine Equivalents for more than a couple of weeks.
- If prescribing opioids, obtain OARRS Report and urine drug screen if not already completed in ED.
- If patient is on long term opioids:
    - Continue their current dose Monitor for opioid withdrawal
    - Inform patient that all attempts should be made to wean off of opioids:
        - CDC Pocket Guide: Tapering Opioids for Chronic Pain
        - Interagency Guideline on Prescribing Opioids for Pain
    - Consider screening for addiction
    - Strongly consider personal communication with the patients PCP or opioid provider to discuss benefits of opioid taper and referral to Addiction Services

Table 1. Centrally Mediated Abdominal Pain Syndrome: Primary Pharmacologic Treatment

Class	Examples	Dose	Onset	Comments
Tricyclic Anti-depressants (TCAs)	amitriptyline desipramine nortriptyline	25-100 mg/day, up to 150 mg/day Though doses of 25mg may provide benefit, patients often need titration to higher doses	2-4 weeks	• First line considerations for abdominal pain • Desipramine and nortriptyline have least amount of anticholinergic side effects of TCAs • Side effects: QTc prolongation, anticholinergic, sexual dysfunction, weight gain
Serotonin Norepinephrine Reuptake Inhibitors (SNRIs)	duloxetine	60-120 mg/day	2-4 weeks, full benefit may take 12 weeks	• Slightly less effective than TCAs, possibly better tolerated • Benefit extrapolated from other neuropathic pain syndromes • Venlafaxine required higher doses to achieve pain benefit • Side effects: nausea, agitation, fatigue, dizziness, sleep disturbance
	venlafaxine	150-225 mg/day, ≥ 225 mg/day may be required		

Atypical Antipsychotics	quetiapine	25-200 mg/day	Several weeks	• Consider for:
				  ○ Augmentation of SNRI or TCA therapy for refractory abdominal pain and sleep disturbance
				  ○ Patients with concomitant fibromyalgia pain
				• Weak evidence for abdominal pain syndrome
				• Side effects: anticholinergic, weight gain, increased appetite, sedation, dyslipidemia, diabetes

Appendix B: Medication Table for Nausea and/or Vomiting Related to Centrally Mediated Abdominal Pain Syndrome

Medication Class	Medication	Dosage Range	Clinical Scenario/ Indication	Notable History & Physical Exam	Major Adverse Effects
Prokinetic	Metoclopramide (Reglan)	PO/IV: 5 – 20 mg 30 mins before meals and at bedtime; max dose 40 mg/d for 2-8 weeks (max 5 mg PO QID in CrCl ≤ 60ml/min) *FDA recommends use for no longer than 12 weeks due to risk of tardive dyskinesia*	Gastroparesis	Small-volume emesis, early satiety, bloating, nausea with movement, history of neuropathy, hypothyroidism, diabetes mellitus	Akathisia, EPS, colonic GI obstruction (risk of perforation in complete GI obstruction)
Dopamine Antagonist	Prochlorperazine (Compazine)	PO/IV: 5-10 mg q6h prn	*Used off-label for many sources of N/V*	Fever, diarrhea, recent chemotherapy, nausea worsened by sight/smell of food	Akathisia, EPS, QT prolongation (in high doses)
	Haloperidol (Haldol)	PO/IV/SC/PR: 0.5-2 mg q4h prn			
Dopamine, 5HT, H1 Antagonist	Olanzapine (Zyprexa)	PO: 2.5-10 mg daily			Sedation, orthostatic hypotension, weight gain, hyperglycemia
5HT3, H1, Alpha-2 Antagonist	Mirtazapine (Remeron)	PO: 7.5-45 mg daily	*Used off-label for many sources of N/V*	Chronic nausea/vomiting associated with weight loss; nausea worsened by sight/smell of food	Sedation, orthostatic hypotension, weight gain, dyslipidemia
5HT3 Antagonist	Ondansetron (Zofran)	PO/IV: 4-8 mg q4-8h prn	Chemotherapy, Radiation, Post-operative *Used off-label for many sources of N/V*	Recent chemotherapy or radiation, recent procedure	Headache, constipation
Anticholinergics	Glycopyrrolate (Robinul)	IV/SC: 0.1-0.2 mg q6h prn PO: 1-2 mg q6h prn	Symptoms related to cramping	Cramping abdominal pain, large/infrequent vomitus that relieves nausea, abnormal bowel sounds, fecal impaction, full bowel obstruction	Sedation, dry mouth, urinary retention, constipation, delirium
	Hyoscyamine (Levsin)	SL/PO: 0.125-0.25 mg q4h prn			
	Dicyclomine (Bentyl)	PO 10 mg TID PRN			
H2 Antagonist	Famotidine (Pepcid)	PO/IV: 20 mg daily to BID (use 50% of dose once daily in CrCl < 50ml/min)	Reflux, GERD	Esophageal burning, sour taste in mouth, worse when supine, epigastric pain radiating to back, dark, tarry stools	Delirium
PPI	Pantoprazole (Protonix)	PO/IV: 40 mg daily to BID	Reflux, GERD, PUD		Headache, diarrhea
Osmotic laxative	PEG (Miralax)	17 gms 1-2 times daily as needed	Constipation		Diarrhea
Stimulant laxative	Bisacodyl (Dulcolax)	5 mg 1-4 times daily as needed	Constipation		Abdominal cramping Diarrhea

Abbreviations: EPS = Extrapyramidal symptoms; GI = gastrointestinal; BM = bowel movement; 5HT = serotonin; H = histamine; GERD = gastroesophageal reflux disease; PPI = proton pump inhibitor; PUD = peptic ulcer disease