Dr. Riki Tenggara, SpPD-KGEH

tenggarariki@gmail.com

3 Maret 1967

Pendidikan :

1992 - 2001 : Fakultas Kedokteran Universitas Atmajaya
Agustus 2003 : Spesialis Penyakit Dalam, Universitas Padjadjaran Bandung
September 2004 : Master in Medicine, Universitas Padjadjaran Bandung
2004 : Basic Endoscopy Training, Universitas Padjadjaran Bandung
Agustus 2013 : Konsultan Gastroenterohepatologist, Universitas Indonesia Jakarta

Pekerjaan:

Departemen Penyakit Dalam
Fakultas Kedokteran Atmajaya dan Rumah Sakit Pantai Indah Kapuk

Kursus & Workshop :

23-25 Oktober 2009, Jakarta Workshop on Intervensional Hepatology I
6 Maret 2010, Internal Medicine Emergency Life Support
24 Juni 2010, Workshop Hepatobiliary Endoscopy & Interventional Hepatology
12-14 November 2010, Workshop Clinical Emergency Management
16-17 Sept 2011, Workshop on Endoscopy Liver – GI Fair 2011
31 Agustus 2012, Workshop V Jakarta Internal Medicine In Daily Practice
4-5 April 2013, Training in sedation in endoscopy procedure
7 September 2013, Integrated Workshop ” Approach in management of liver and GI problem in daily practice”

IBD OR IBS

RIKI TENGGARA

DEPARTEMEN ILMU PENYAKIT DALAM

FKIK UNIKA ATMA JAYA

CONTENTS

- Overview
- What is IBD and IBS
- Similarities and differences
- Diagnostics
- Features of CD and UC
- IBD Diagnosis
- Treatment

PENYAKIT USUS
NYERI PERUT
DIARE
KONSTIPASI

- PENYAKIT PENCERNAAN APAKAH YANG MENYEBABKAN IBD (INFLAMMATORY BOWEL DISEASE)
- PENYAKIT PENCERNAAN APAKAH YANG MENYEBABKAN IBS
- DEFINISI:
- IBD PENYEBABNYA INFLAMASI
- IBS PENYEBABNYA FUNGSIONAL
- PERTANYAAN KLASIK DAN MENDASAR

IBS AND IBD

- THERE IS OFTEN CONFUSION SURROUNDING **IRRITABLE BOWEL**SYNDROME (**IBS**) AND **INFLAMMATORY BOWEL DISEASE**(**IBD**): TWO COMMON CONDITIONS OF THE DIGESTIVE TRACT.
- BOTH **IBS** AND **IBD** CAN CAUSE SYMPTOMS OF DIARRHEA, BLOATING, AND PAIN, BUT THAT IS LARGELY THE EXTENT OF THEIR SIMILARITIES.

IBD AND IBS

- INFLAMMATORY BOWEL DISEASES ARE A GROUP OF INFLAMMATORY CONDITIONS IN WHICH THE BODY'S OWN IMMUNE SYSTEM ATTACKS PARTS OF THE DIGESTIVE SYSTEM
- *THE EXACT CAUSE OF CD AND UC REMAINS UNKNOWN. RESEARCHERS BELIEVE THAT SEVERAL FACTORS, SUCH AS A FAMILY PREDISPOSITION AND A FAULTY IMMUNE SYSTEM, PLAY A ROLE IN THEIR DEVELOPMENT*
- *IRRITABLE BOWEL SYNDROME IS NOT A DISEASE, BUT RATHER A CONDITION THAT AFFECTS THE FUNCTION AND BEHAVIOR OF THE INTESTINES*

- DIAGNOSING IBS TYPICALLY INVOLVES A PHYSICAL EXAM AND MEDICAL HISTORY, AND OFTEN INVOLVES EXCLUDING OTHER GI DISORDERS FIRST. IF THE PERSON IS EXPERIENCING MORE SERIOUS SIGNS AND SYMPTOMS OR IS NOT RESPONDING TO TREATMENT,
- ADDITIONAL TESTING MAY BE PERFORMED, SUCH AS BLOOD TESTS, STOOL SAMPLES, ENDOSCOPIC PROCEDURES OR EXTERNAL IMAGING PROCEDURES.

SIMILARITIES & DIFFERENCES BETWEEN IBD AND IBS

- FREQUENT AND URGENT BOWEL MOVEMENT
- DIARRHEA
- BLOODY STOOL
- ABDOMINAL PAIN AND CRAMPING
- FATIGUE
- LACK OF APPETITE
- WEIGHT LOSS
- JOINT, SKIN AND EYE PROBLEM

- ABDOMINAL PAIN AND CRAMPING
- BLOATING
- GAS
- MUCUS IN STOOL
- DIARRHEA AND /OR CONSTIPATION

SIMILARITIES & DIFFERENCES BETWEEN IBD AND IBS

IBD

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IBS

- ABDOMINAL PAIN AND CRAMPING
- BLOATING
- GAS
- MUCUS IN STOOL
- DIARRHEA AND /OR CONSTIPATION

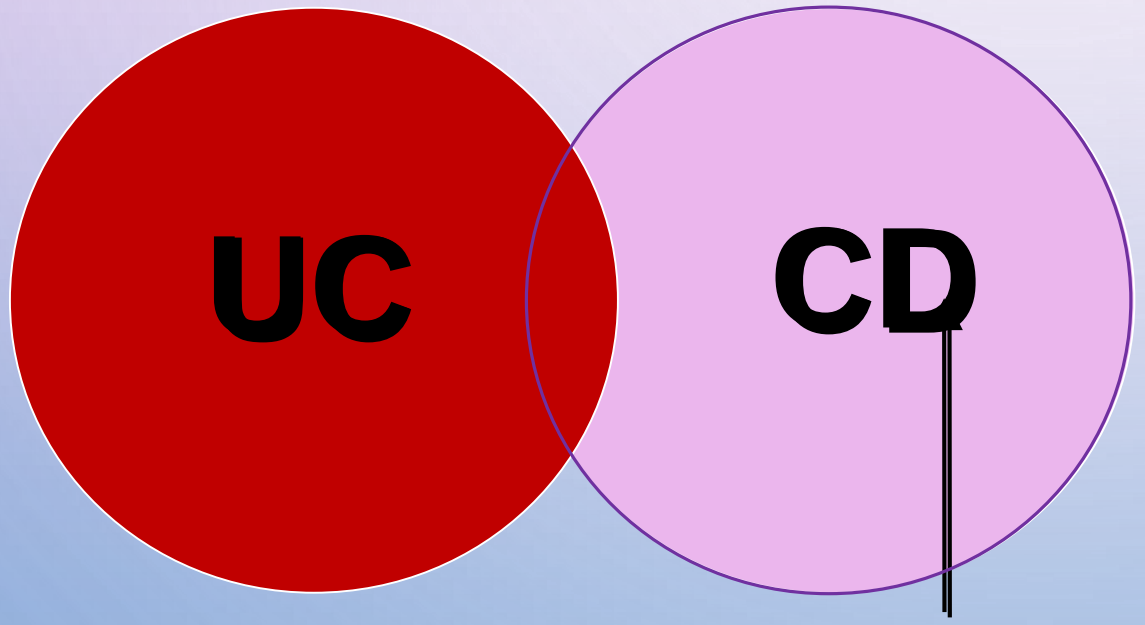
INFLAMMATORY BOWEL DISEASE VS IRRITABLE BOWEL SYNDROME

	IBD	IBS
DEFINITION	chronic immune-mediated disorders	functional bowel disorder
SYMPTOMS	chronic gastrointestinal (GI) conditions associated with abdominal pain abdominal pain, alteration in bowel habits, relapsing-and-remitting courses, and psychological distress	
ETIOLOGY	chronic dysregulation of mucosal immune function	dysregulated brain–gut interactions
	• 1% of the USA population • affect less than 1% of the USA population	• 10%–20% of the general population • women > men • ↑ with underlying psychological comorbidities or co-existing functional disorders
DIAGNOSIS	serum, fecal, and colonic mucosal inflammatory biomarkers	based on patient-reported symptoms
MANAGEMENT	directed against suppression or modulation of inflammation	, psychologic support

INFLAMMATORY BOWEL DISEASE

- IS AN IDIOPATHIC CHRONIC GUT INFLAMMATORY CONDITION

MAJOR ENTITIES

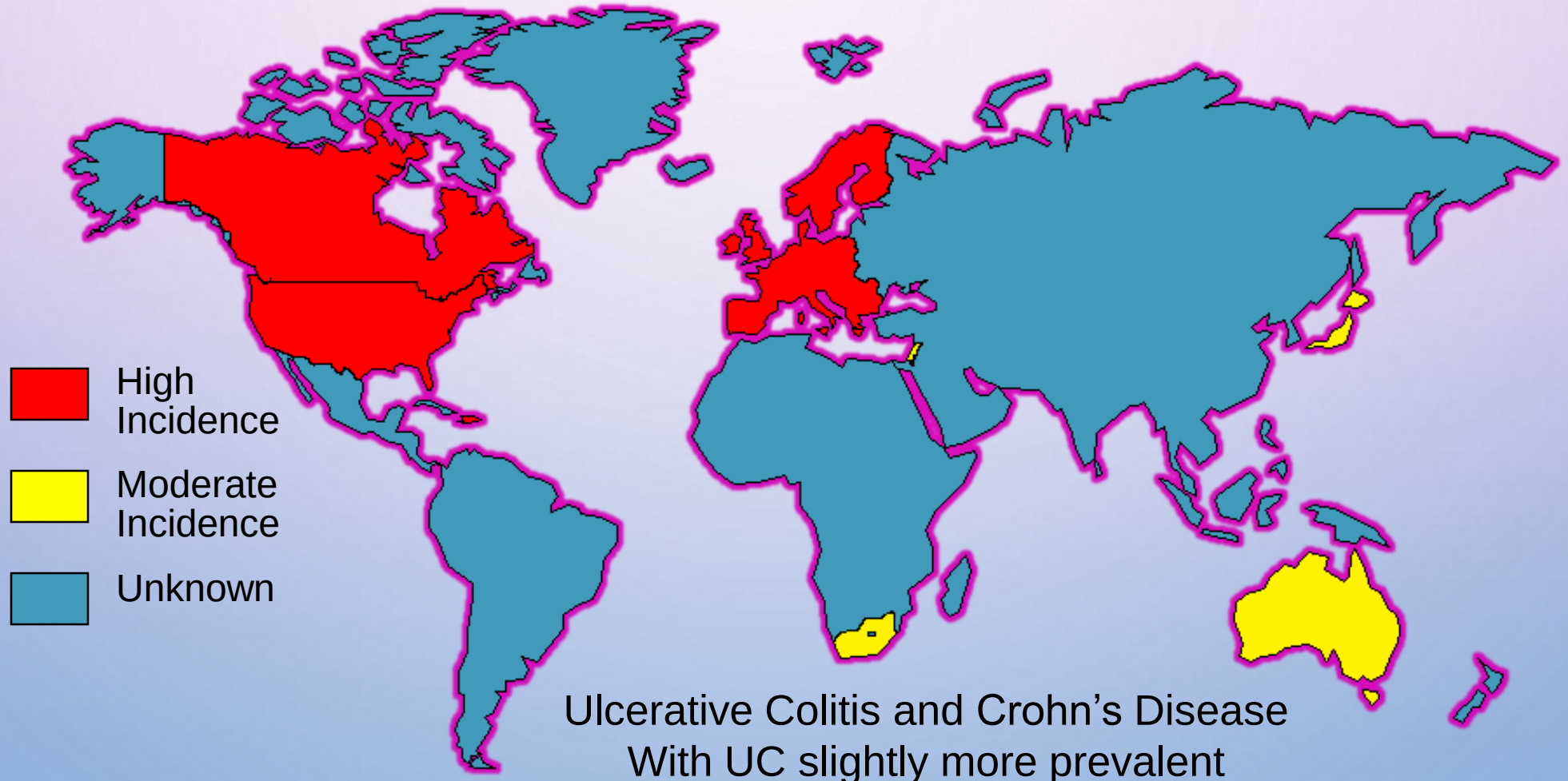


Irritable Bowel Syndrome

-A syndrome of intermittent abdominal pain, constipation, and diarrhea related to hypermotility of the gut in the absence of any organic cause

INFLAMMATORY BOWEL DISEASE

GEOGRAPHIC DISTRIBUTION



Ulcerative Colitis and Crohn's Disease
With UC slightly more prevalent

INFLAMMATORY BOWEL DISEASE

GLOBAL INCIDENCE

- UC
  - ↑ WESTERN COUNTRIES SINCE THE 2ND WORLD WAR
  - INCREASING IN PREVIOUSLY LOW-INCIDENCE AREAS IN EASTERN EUROPE, ASIA AND DEVELOPING COUNTRIES
- CD
  - <1 PER 100,000 BUT PROBABLY INCREASING IN ASIA AND SOUTH AMERICA
  - 1-3 PER 100,000 IN SOUTHERN EUROPE, SOUTH AFRICA
  - 7 PER 100,000 IN THE US

Irritable Bowel Syndrome

International Incidence

- incidence of a clinical diagnosis of IBS in Olmsted County was 0.2% per year
- Over a 12-year follow-up, 9% of community subjects who were symptom-free at baseline developed IBS
- 38% of subjects lost their symptoms
- Worldwide Prevalence:
  - 1% to 45% worldwide

LOCAL DATA

INFLAMMATORY BOWEL DISEASE

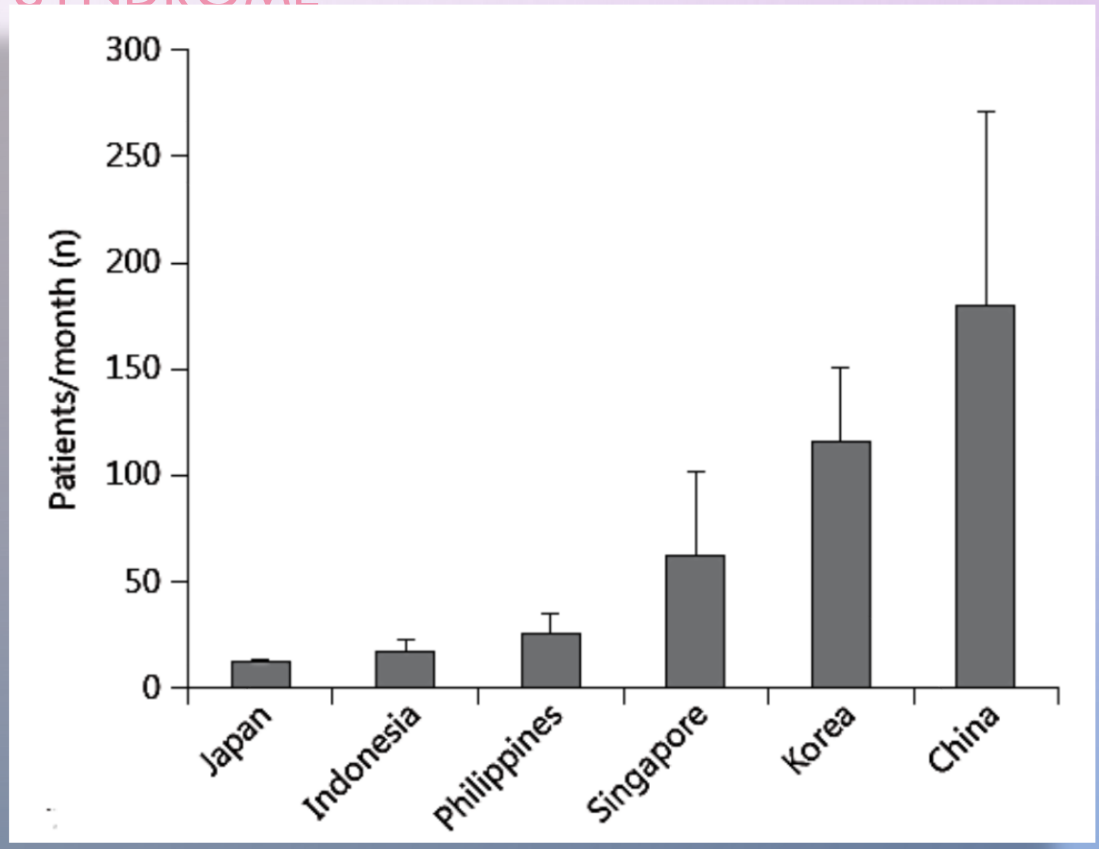
DATA SOURCES	NO OF COLONOSCOPY	IBD	UC	CD
RSCM Tahun 2001 – 2006	1541	8,30 %	5,40 %	2,90 %
RSPAD Gatot Soebroto Tahun 2002 - 2006	532	10,15 %	6,95 %	3,20 %
RS Hasan Sadikin, Bandung Tahun 2007	192	9,89 %	8,33 %	1,56 %
RSUP Dr Sardjito, Yogyakarta Tahun 2007	269	44,00 %	23,00 %	3,30 %
RSZA Banda Aceh Tahun 2006 - 2007	113	4,25 %	2,55 %	1,70 %
RSAB/PengCab PGI, Pekanbaru Tahun 2007	325	5,23 %	3,08 %	2,15 %
RS Syaiful Anwar, Malang Tahun 2007	364	17,00 %	16,00 %	1,00 %
RSUD Jambi, Tahun 2007	86	1,16 %	?	?
RS Usada Insani, Tangerang Tahun 2007	166	26,50 %	16,30, %	10,20 %

Sumber : Konsensus Nasional Penatalaksanaan IBD di Indonesia 2011

SURVEY OF CLINICAL PRACTICE FOR IRRITABLE BOWEL SYNDROME IN **EAST ASIAN COUNTRIES**

IRRITABLE BOWEL SYNDROME

- THE STUDY PARTICIPANTS WERE 251 PHYSICIANS INVOLVED IN THE CLINICAL PRACTICE OF IBS
- MAJOR INSTITUTIONS IN
  - JAPAN
  - SOUTH KOREA (KOREA)
  - CHINA,
  - PHILIPPINES
  - INDONESIA
  - SINGAPORE.
- USE THE 7TH QUESTIONNAIRE-BASED SURVEY CONDUCTED BY THE INTERNATIONAL GASTROINTESTINALCONSENSUS SYMPOSIUM (IGICS).



The number of patients per month per institution with IBS

OUTLINE

- IBS VS IBD
- OVERVIEW ON IBD AND IBS
- **ETIOLOGY AND RISK FACTORS**
- DIAGNOSIS AND WORKUPS
- FEATURES OF UC, CD AND IBS
- MEDICAL MANAGEMENT FOR UC, CD AND IBS

ETIOLOGY

INFLAMMATORY BOWEL DISEASE

Hygiene Hypothesis

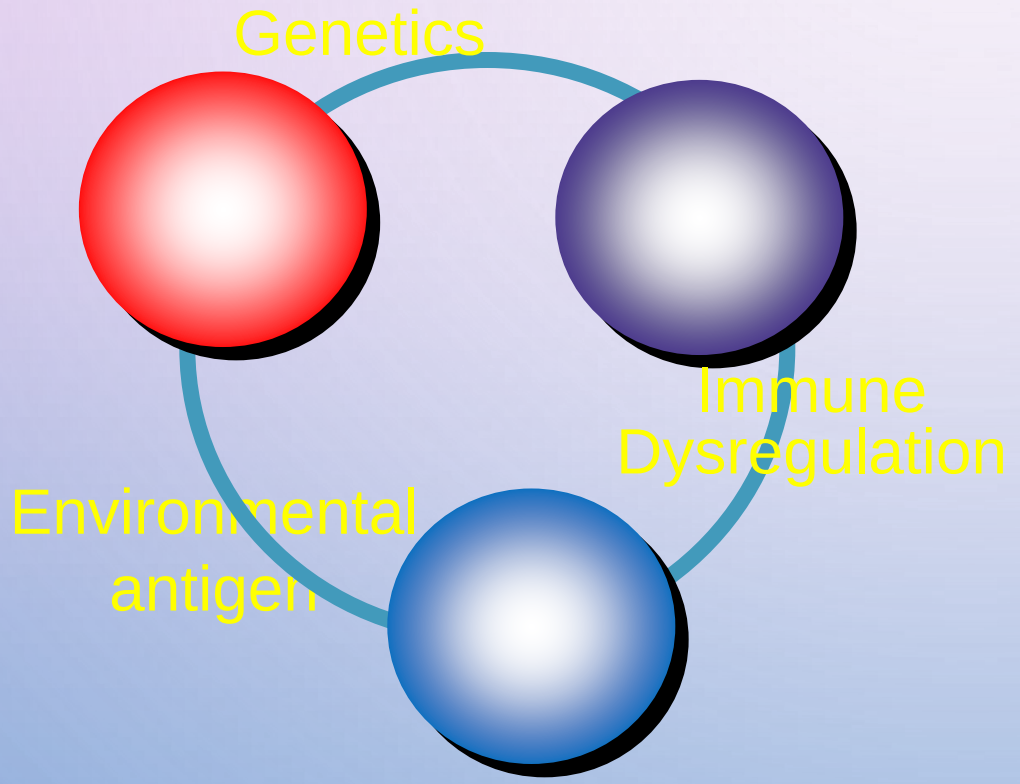
- suggests that persons less exposed to childhood infections or unsanitary conditions lose potentially "friendly" organisms or organisms that promote regulatory T-cell development, or alternatively do not develop a sufficient immune repertoire by not experiencing noxious organisms.

Irritable Bowel Syndrome

Patients with IBS have altered motor reactivity to various stimuli, including meals, psychologic stress, and balloon distention of the rectosigoid, resulting in altered transit time, which in turn results in pain, constipation, and diarrhea.

POTENTIAL TRIGGER FOR IBD

NOT EQUALLY CONTRIBUTE

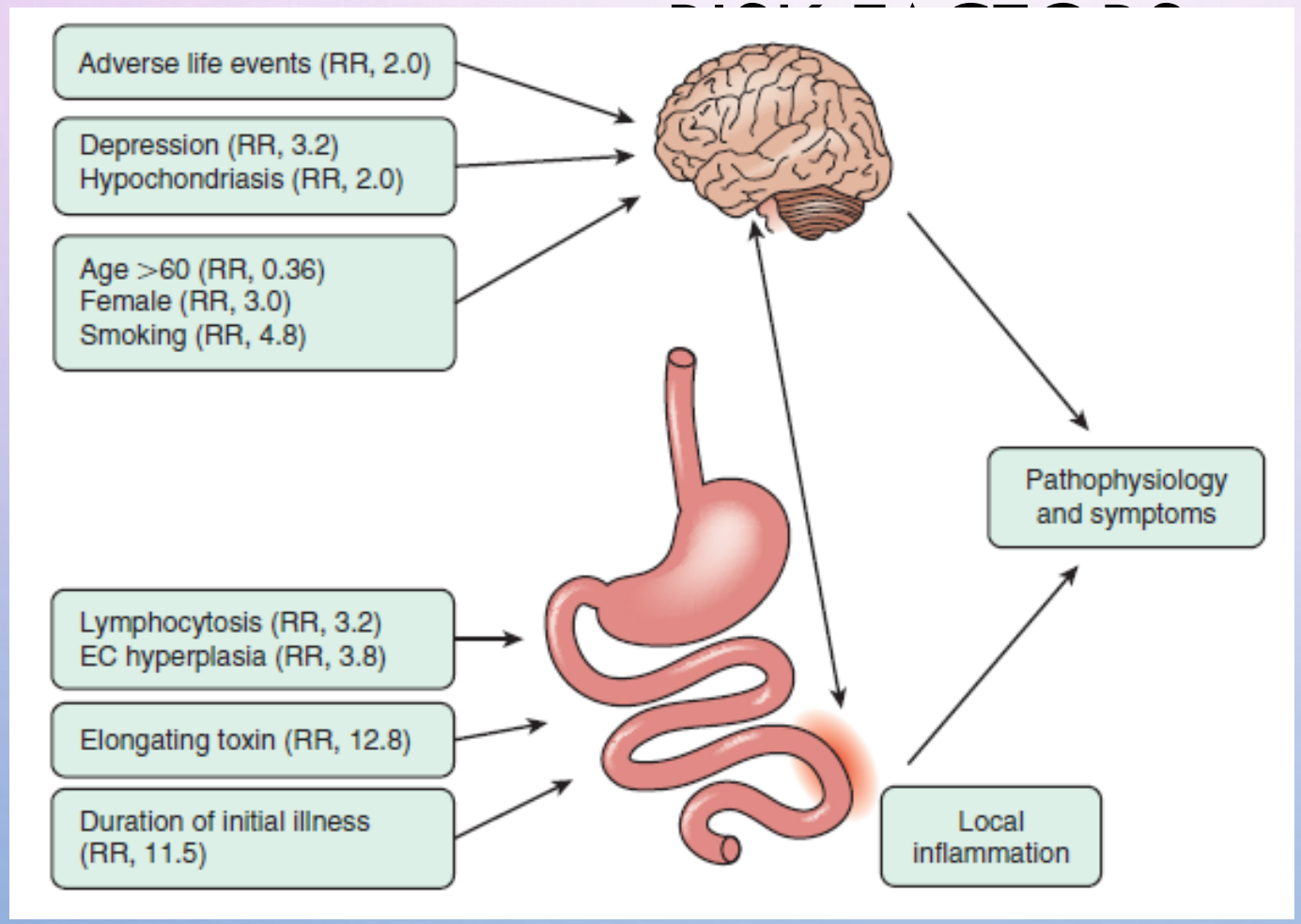


Risk Factor for IBS

The best-accepted risk factor for IBS is bacterial gastroenteritis

- depression
- adverse life events and hypochondriasis
- female gender
- younger age,
- prolonged duration of diarrhea following the initial attack

POSTINFECTION IBS: A SUMMARY OF ESTABLISHED



Postinfection IBS: A summary of established risk factors. EC, enterochromaffin cell; RR, relative risk

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DIAGNOSTIC WORKUPS

IBD

Test	
Laboratory	Blood test: anemia R,
Imaging	
Special T	
Diagnostic Procedures	Confirmed by endoscopic and histologic exam

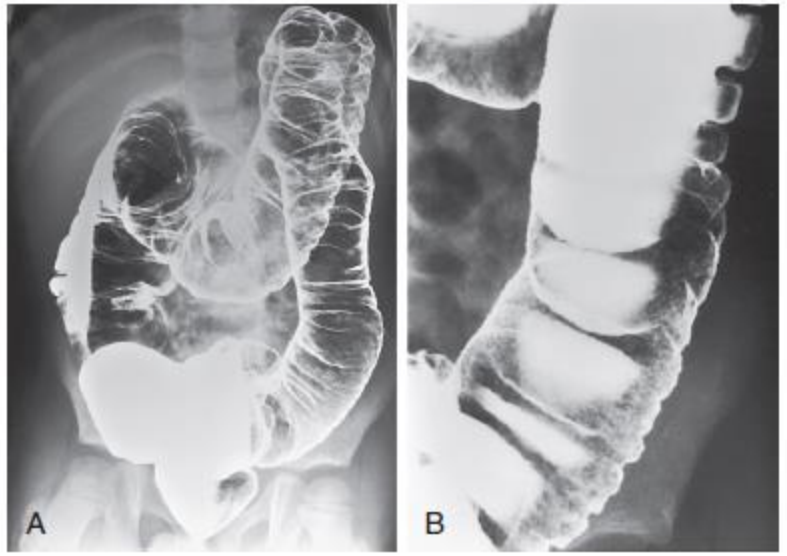


Fig. 362.3 Ulcerative colitis. Double-contrast barium enema in a 5 yr old boy who had had intermittent intestinal and extraintestinal symptoms since the age of 3 yr. **A.** Small ulcerations are distributed uniformly en face. *(From Hoffman AD: The child with diarrhea. In Hilton SW, Edwards DK, editors: Practical pediatric radiology, ed 2, Philadelphia, 1994, WB Saunders, p 260.)*

IBS

Test	
Laboratory	No evaluation indicated
Imaging	No imaging indicated

PATIENTS PRESENTING WITH IBS-LIKE SYMPTOMS WHO ALSO REPORT ALARM FEATURES (OR "RED FLAGS") WARRANT PROMPT INVESTIGATION

ALARM FEATURES CONSIDERED POTENTIALLY RELEVANT IN THE DIAGNOSIS OF ORGANIC DISEASE AS OPPOSED TO IBS

History
Blood in the stool
Chronic diarrhea
Family history of colon cancer, IBD, or celiac disease
Fever
Onset after age 50 years
Night-time symptoms (awakening the patient from sleep)
Progressive dysphagia
Recurrent vomiting
Short history of symptoms
Travel history to locations endemic for parasitic diseases
Weight loss

Physical Examination
Abdominal mass
Arthritis (active)
Dermatitis herpetiformis or pyoderma gangrenosum
Overt blood or mass on rectal examination
Signs of anemia
Signs of intestinal malabsorption
Signs of intestinal obstruction
Signs of thyroid dysfunction

DIAGNOSIS OF IBS

MANNING, KRUIS, AND ROME III CRITERIA FOR IBS

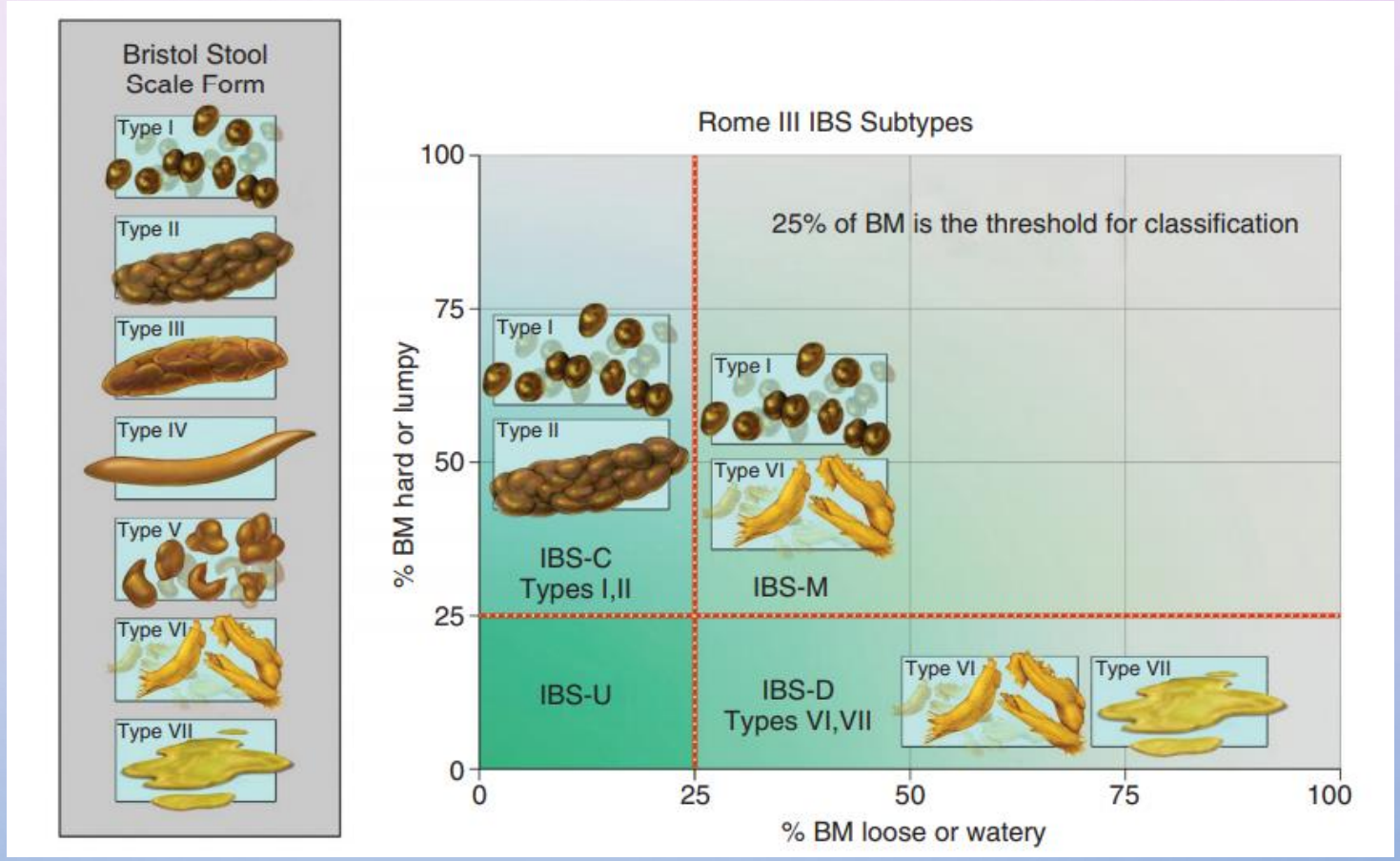
Manning Criteria*
Abdominal pain eased after bowel movement
Looser stools at onset of abdominal pain
More frequent bowel movements at onset of abdominal pain
Abdominal distention
Mucus per rectum
Feeling of incomplete emptying

Kruis Criteria
Patient's History
Abdominal pain
Flatulence
Irregularity of bowel movements
Symptoms for more than 2 years
Mixed diarrhea and constipation
Pellet-like stools or mucus

Physician's Assessment†
Abnormal physical findings
Erythrocyte sedimentation rate > 20 mm/2 hr
Leukocytosis (>10,000 cm^3)
Hemoglobin (female < 12 g/dL; male < 14 g/dL)
History of blood in stool

Rome III Criteria‡
Recurrent abdominal pain or discomfort§ at least 3 days/month in the last 3 months associated with *2 or more* of the following:
Improvement with defecation
Onset associated with a change in frequency of stool
Onset associated with a change in form (appearance) of stool

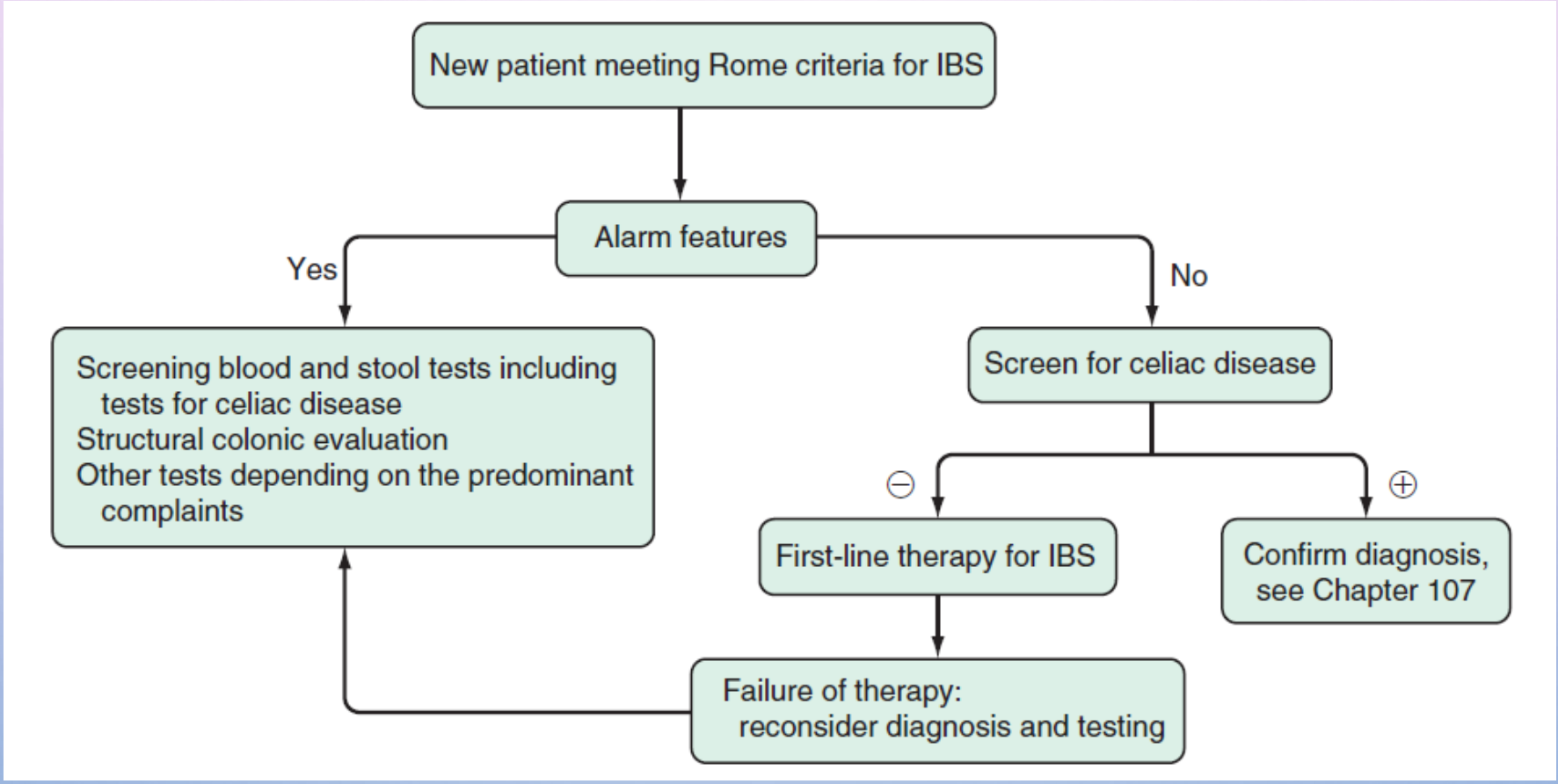
THE BRISTOL STOOL FORM SCALE AND CLASSIFICATION OF SUBTYPES OF IBS



BM, Bowel Movement; C, Constipation; D, Diarrhea; IBS, Irritable Bowel Syndrome; M, Mixed; U, Unsubtyped

- ADAPTED FROM LONGSTRETH GF, THOMPSON WG, CHEY WD, ET AL. FUNCTIONAL BOWEL DISORDERS. IN: DROSSMAN DA, EDITOR. ROME III: THE FUNCTIONAL GASTROINTESTINAL DISORDERS. 3RD ED. MCLEAN, VA.:

ALGORITHM FOR DIAGNOSTIC TESTING IN PATIENTS WITH POSSIBLE IBS ACCORDING TO THE ROME



(Adapted from Cash BD, Chey WD. Irritable bowel syndrome: An evidence-based approach to diagnosis. Aliment Pharmacol Ther 2004; 19:1235-45.)

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CLINICAL FEATURES

IBD

- ULCERATIVE COLITIS: BLOOD, MUCUS, AND PUS IN THE STOOL AS WELL AS DIARRHEA
- PROCTITIS: CONSTIPATION
- TENESMUS, URGENCY, CRAMPING ABDOMINAL PAIN (ESPECIALLY WITH BOWEL MOVEMENTS), AND NOCTURNAL BOWEL MOVEMENTS
- **FULMINANT COLITIS:** FEVER, SEVERE ANEMIA, HYPOALBUMINEMIA, LEUKOCYTOSIS
- MORE THAN 5 BLOODY STOOLS PER DAY FOR 5 DAYS
- CHRONICITY IS AN IMPORTANT PART OF THE DIAGNOSIS

IBS

ABDOMINAL DISCOMFORT OR PAIN

- WAXING AND WANING
- TYPICALLY IS RELIEVED BY DEFECATION, OR ITS ONSET IS ASSOCIATED WITH AN INCREASE OR DECREASE IN STOOL FREQUENCY, OR WITH LOOSER OR HARDER STOOLS

CONSTIPATION AND DIARRHEA

- CONSTIPATION (IBS-C)
- DIARRHEA (IBS-D)
- MIXED (IBS-M)

BLOATING AND VISIBLE DISTENTION

NONCOLONIC SYMPTOMS

HEADACHE (AND MIGRAINE), BACKACHE, IMPAIRED SLEEP, CHRONIC FATIGUE, INCREASED URINARY FREQUENCY OR URGENCY, PELVIC PAIN, AND DYSPAREUNIA ARE MORE COMMON IN PATIENTS WITH IBS BUT HAVE NO ACCEPTED

Irritable Bowel Syndrome ALEXANDER C. Ford And Nicholas J. Talley

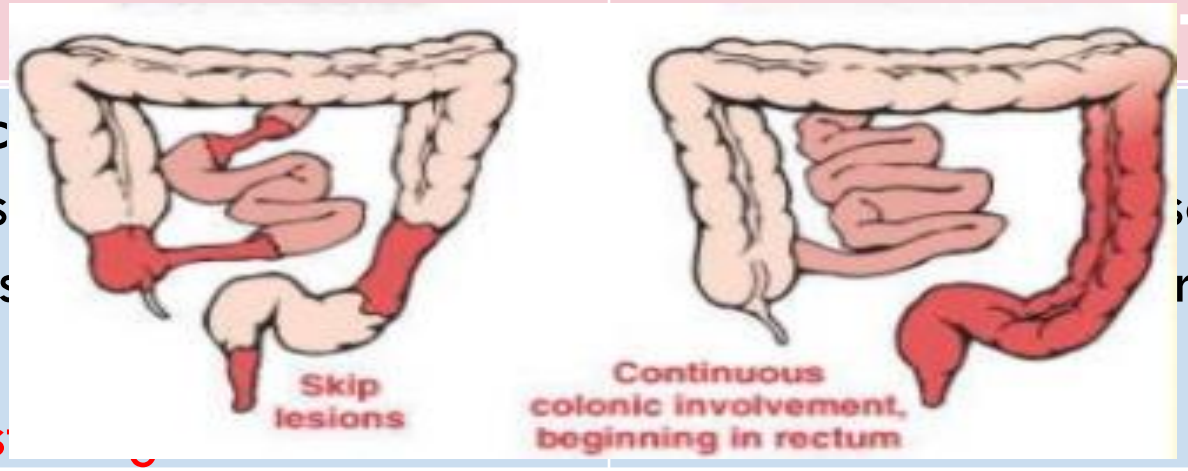
TYPICAL IBS SYMPTOMS ARE COMMON IN PATIENTS WITH DOCUMENTED IBD IN REMISSION

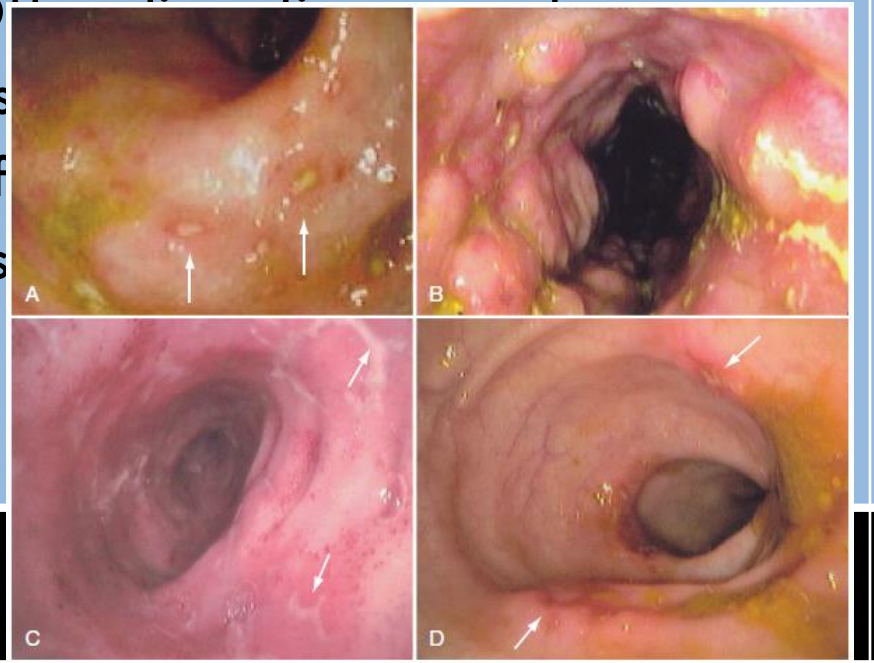
In 1 meta-analysis of observational studies, 31% of patients with UC and 41% of patients with Crohn's disease reported symptoms compatible with IBS, and the prevalence of such symptoms was significantly higher among patients with Crohn's disease than in those with UC.

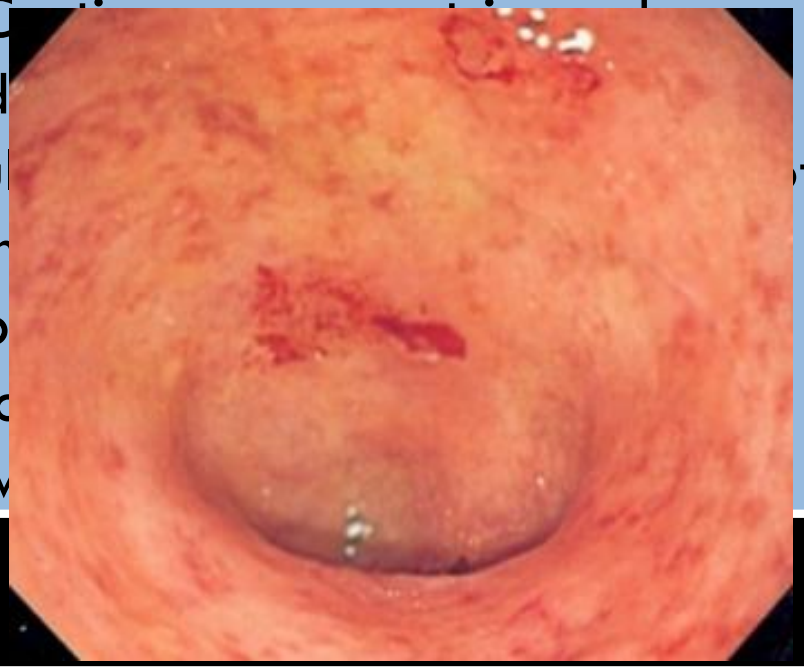
ENDOSCOPIC AND HISTOLOGIC COMPARISION IF IBD AND IBS

Comparison of Crohn Disease and Ulcerative Colitis

Feature	CROHN'S	TIS
Mucosal lesions	Aphthous ulc early diseas notable for s claw, linear, and cobbles	common, seen re common
Distribution	O as of es	C d u in p (c w
Rectum		

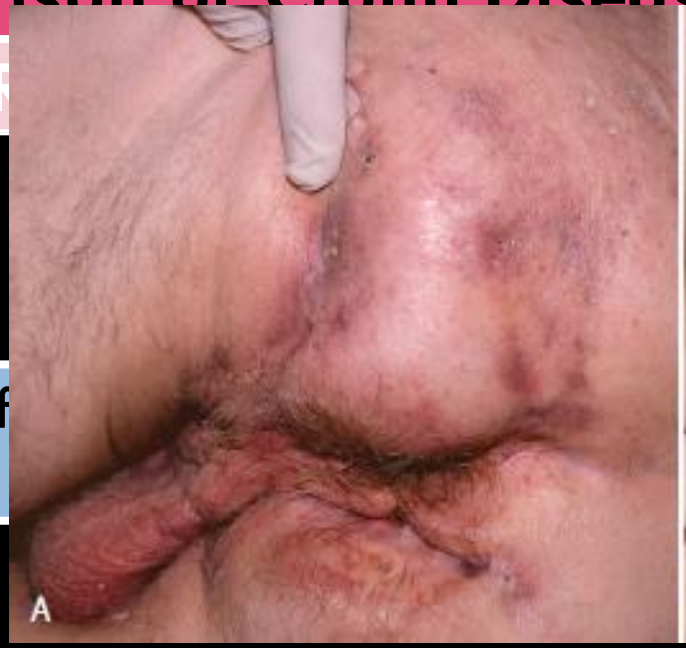


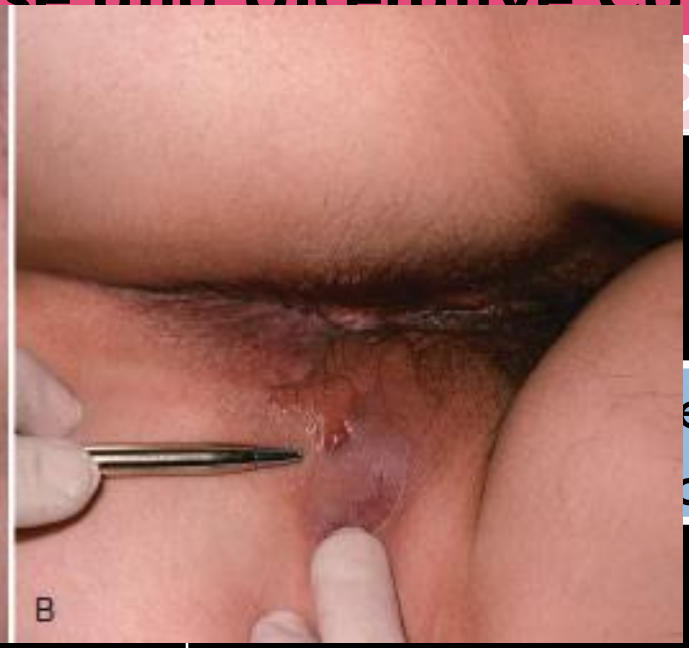




Comparison of Crohn Disease and Ulcerative Colitis

Feature	CR	OLITIS
Ileum		
Strictures	Of	en present, cinoma
Depth of inflammation		
Serosal findings	Marked erythema and creeping fat (the latter is virtually pathognomonic)	Absent except in severe colitis or toxic megacolon
Perianal complications		





Comparison of Crohn Disease and Ulcerative Colitis

Feature	CROHN'S DISEASE	ULCERATIVE COLITIS
Fistulas	[redacted]	
Histopathology	Granulomas are present in 15%-60% of patients (higher frequency in surgical specimens than in mucosal pinch biopsies) Crypt abscesses may be presentFocally enhanced inflammation, often on a normal background, is the hallmark	
Serology	[redacted]	

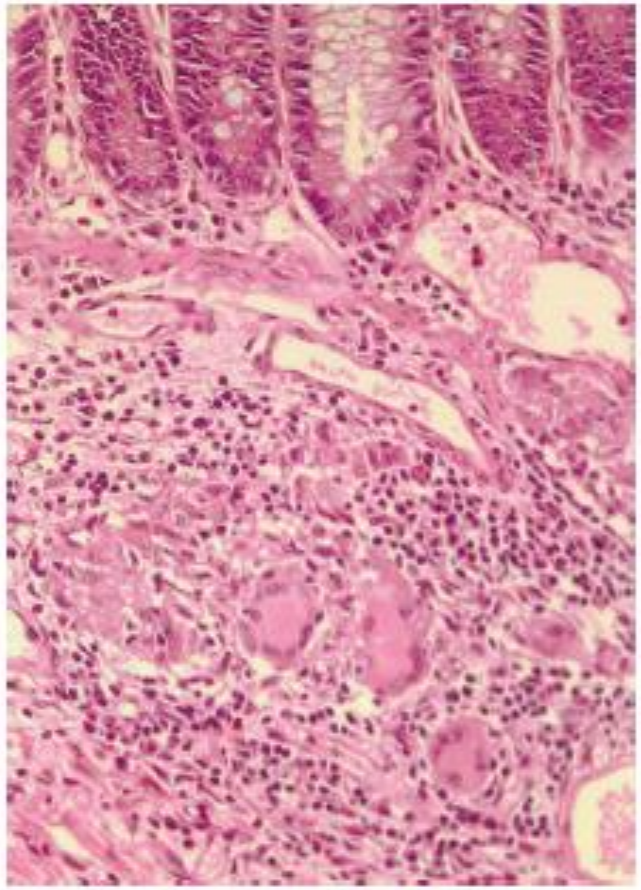
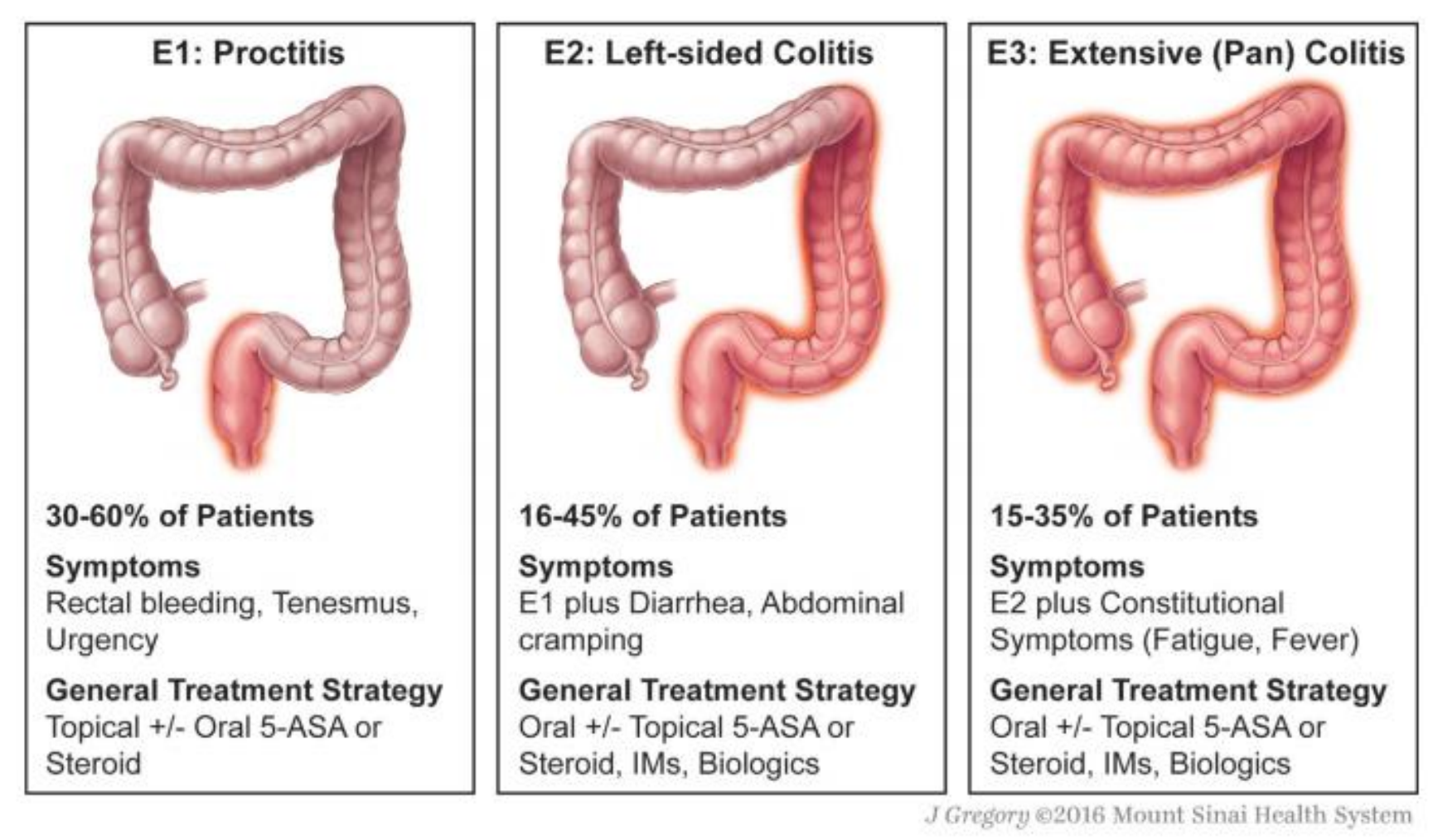


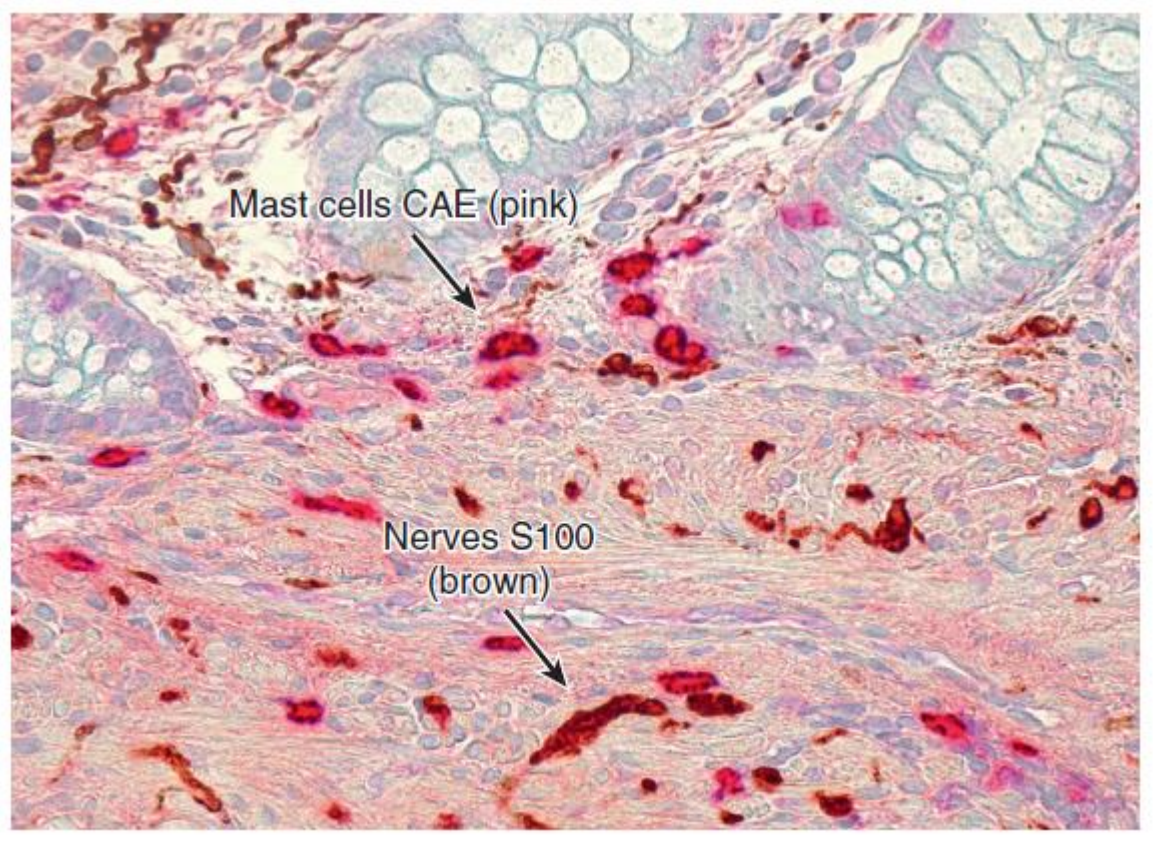
FIGURE 115-2. Photomicrograph of a typical Crohn's disease granuloma found in an endoscopic biopsy specimen. Note the loosely formed collection of cells, consisting of multinucleated giant cells (not always observed) and mononuclear cells, including T cells, and epithelioid macrophages. Central caseation is not noted. *(Courtesy Dr. Gregory Lauwers, Boston, Mass.)*

Ulcerative Colitis



The small intestine is not involved

RECTAL MUCOSAL BIOPSY SPECIMEN FROM AN IBS-DIARRHEA (IBS-D) PATIENT



RECTAL MUCOSAL BIOPSY SPECIMEN FROM AN IBS-DIARRHEA (IBS-D) PATIENT. NOTE THAT MAST CELLS (CHLOROACETATE ESTERASE REACTION) LIE IN CLOSE PROXIMITY TO NERVES (S100 IMMUNOSTAINING). *(IMAGE COURTESY DRS. SURESH LADVA AND MARJORIE WALKER, NEWCASTLE, AUSTRALIA.)*

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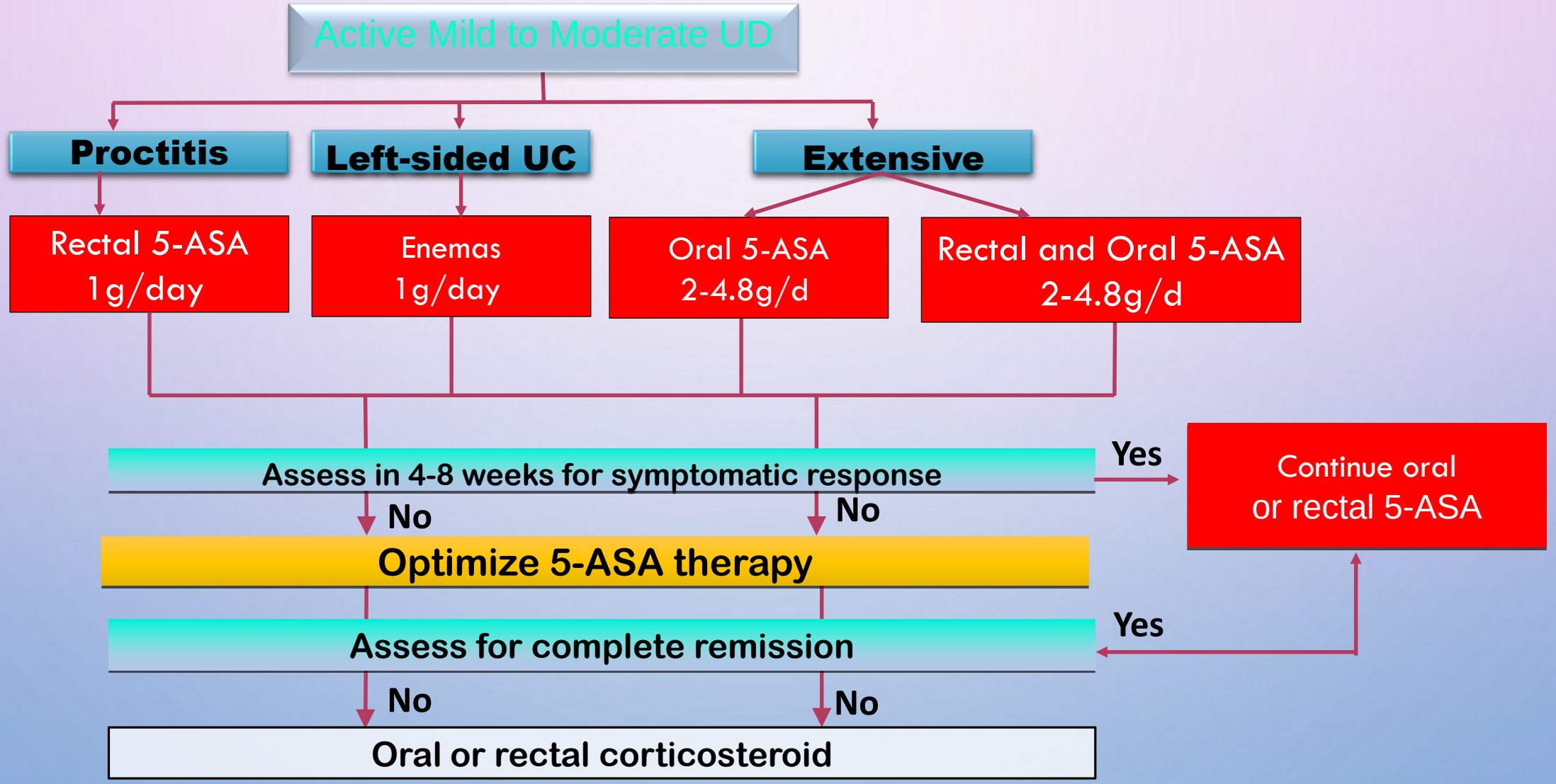
CONSENSUS STATEMENT

Clinical Practice Guidelines for the Medical Management of Nonhospitalized Ulcerative Colitis: The Toronto Consensus

CONSENSUS-GUIDED ALGORITHM

MILD TO MODERATE ACTIVE UC



CONSENSUS STATEMENT

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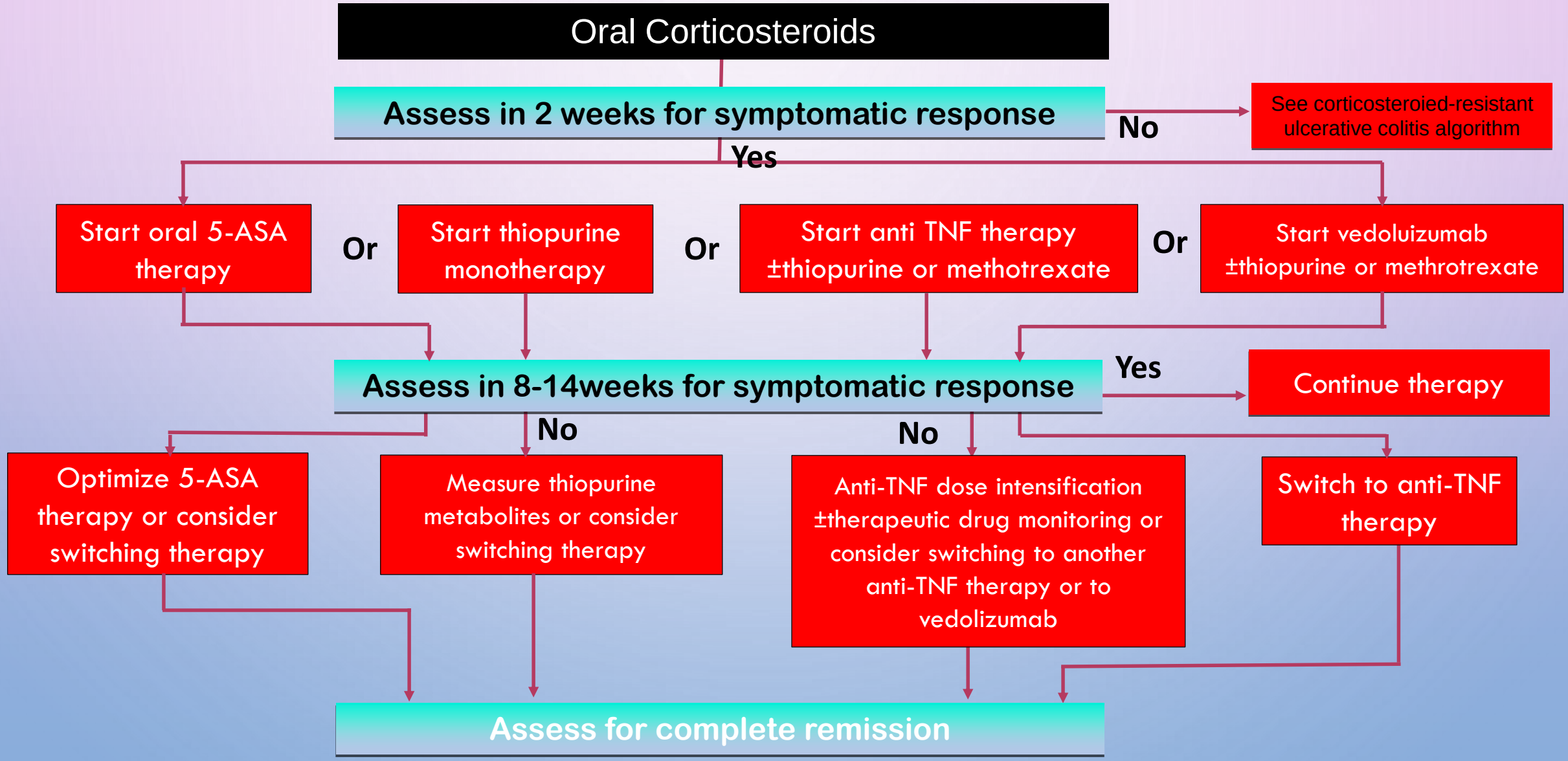
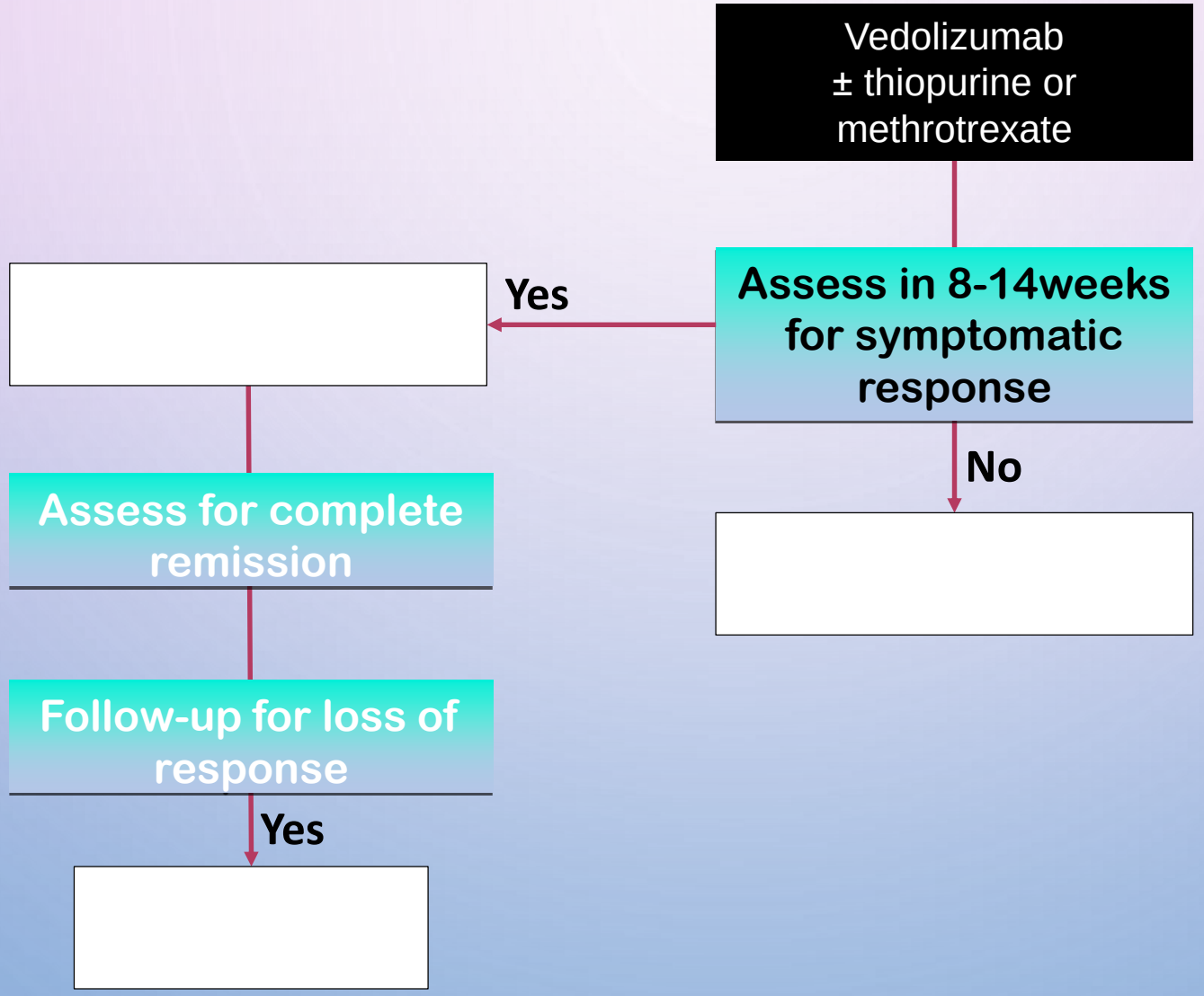
CONSENSUS-GUIDED ALGORITHM

MODERATE TO SEVERE ACTIVE UC



CONSENSUS-GUIDED ALGORITHM

CORTICOSTEROID-RESISTANT/DEPENDENT UC



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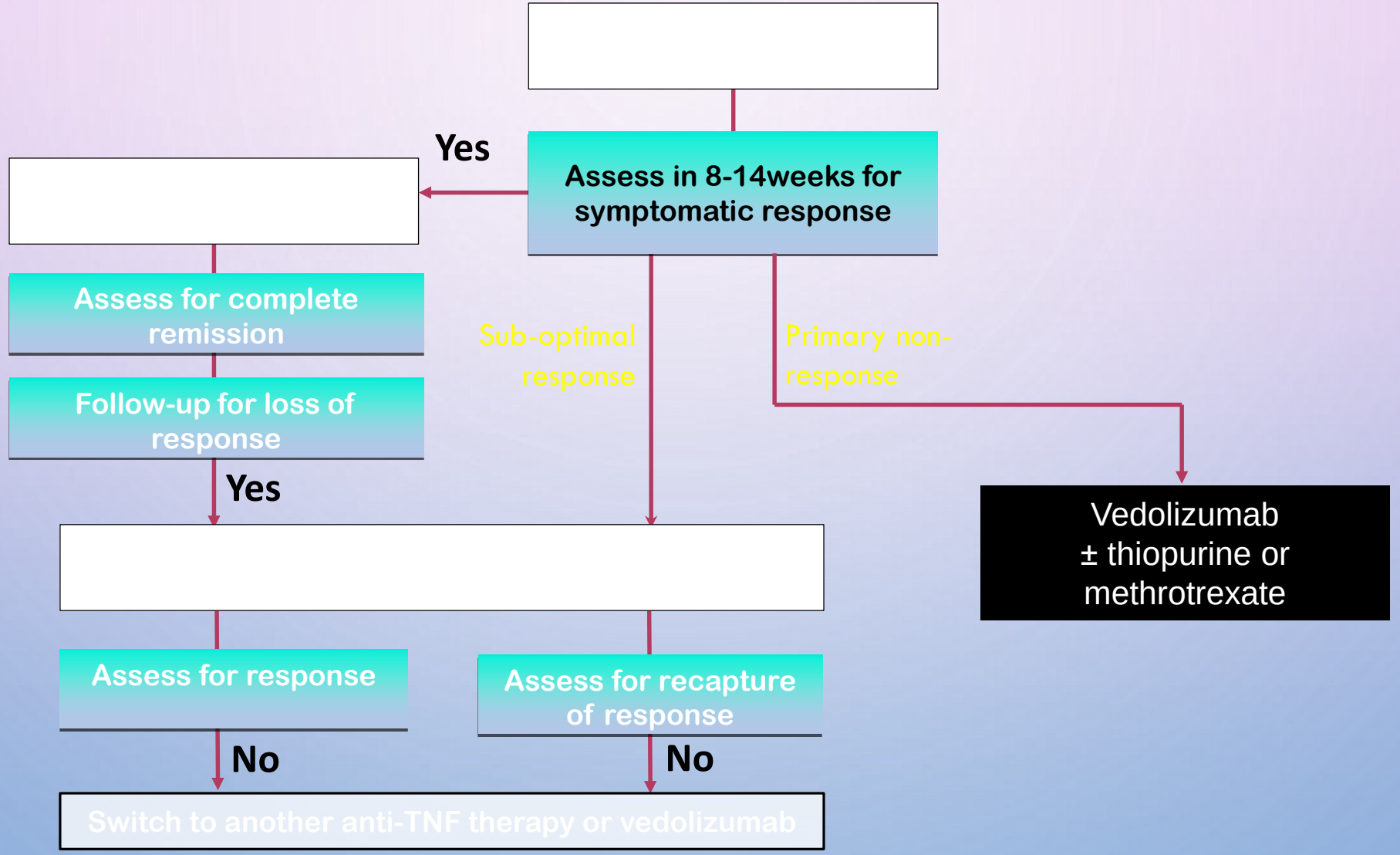
CONSENSUS-GUIDED ALGORITHM

CORTICOSTEROID-RESISTANT/DEPENDENT UC



INFLAMMATORY BOWEL DISEASE

Combined oral and enema treatment with [redacted] (mesalazine) is superior to oral therapy alone in patients with extensive mild/moderate active ulcerative colitis: a randomised, double blind, placebo controlled study

P Marteau, C S Probert, S Lindgren, M Gassul, T G Tan, A Dignass, R Befrits, G Midhagen, J Rademaker, M Foldager

Gut 2005;**54**:960–965. doi: 10.1136/gut.2004.060103

Treatment efficacy

Remission and improvement rates were higher in the mesalazine enema group at both week 4 and week 8 compared with the placebo enema group (fig 2). In the ITT

Alimentary Pharmacology & Therapeutics

Systematic review: the use of mesalazine in inflammatory bowel disease

R. BERGMAN & M. PARKES

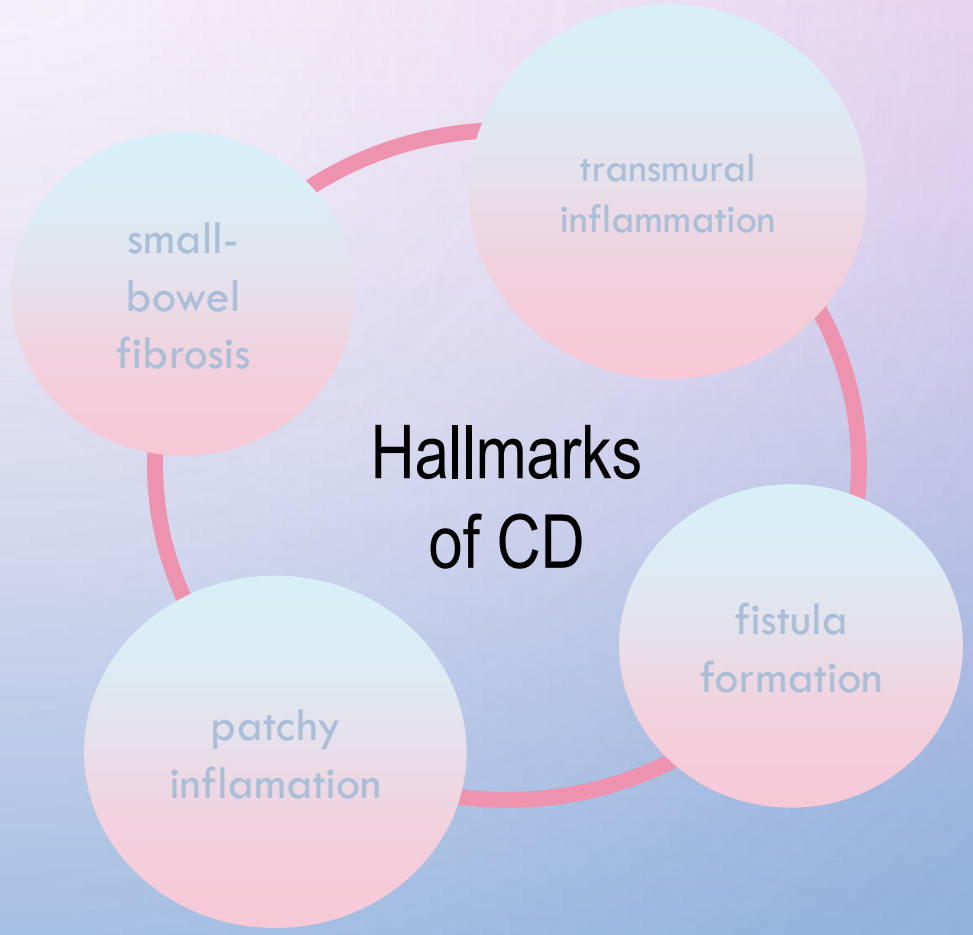
Topical 5-ASA is clearly effective in treatment of mild to moderately active UC. This is illustrated by seven RCTs which show superiority of topical 5-ASA to placebo when used as enemas at doses of 1–4 g/day or as suppositories at doses of 0.5–1.5 g/day.[34–40] These are

zine enemas.[32] The principal advantage of topical 5-ASAs is in the delivery of treatment direct to inflamed mucosa, achieving up to 100 times higher mucosal concentrations of 5-ASA and correspondingly higher efficacy with less risk of systemic side-effects than oral treatment.[33] The option of topical therapy

Topical 5-ASA is clearly effective in treatment of mild to moderately active UC. This is illustrated by seven RCTs which show superiority of topical 5-ASA to placebo when used as enemas at doses of 1–4 g/day or as suppositories at doses of 0.5–1.5 g/day.[34–40] These are

CROHN'S DISEASE (CD)

- SEGMENTAL AND TRANSMURAL INFLAMMATION THAT MAY INVOLVED ANY PART OF THE GIT



GENERAL PRINCIPLES

- site (ileal, ileocolic, colonic, other)
- pattern (inflammatory, stricturing, fistulating)
- activity of the disease

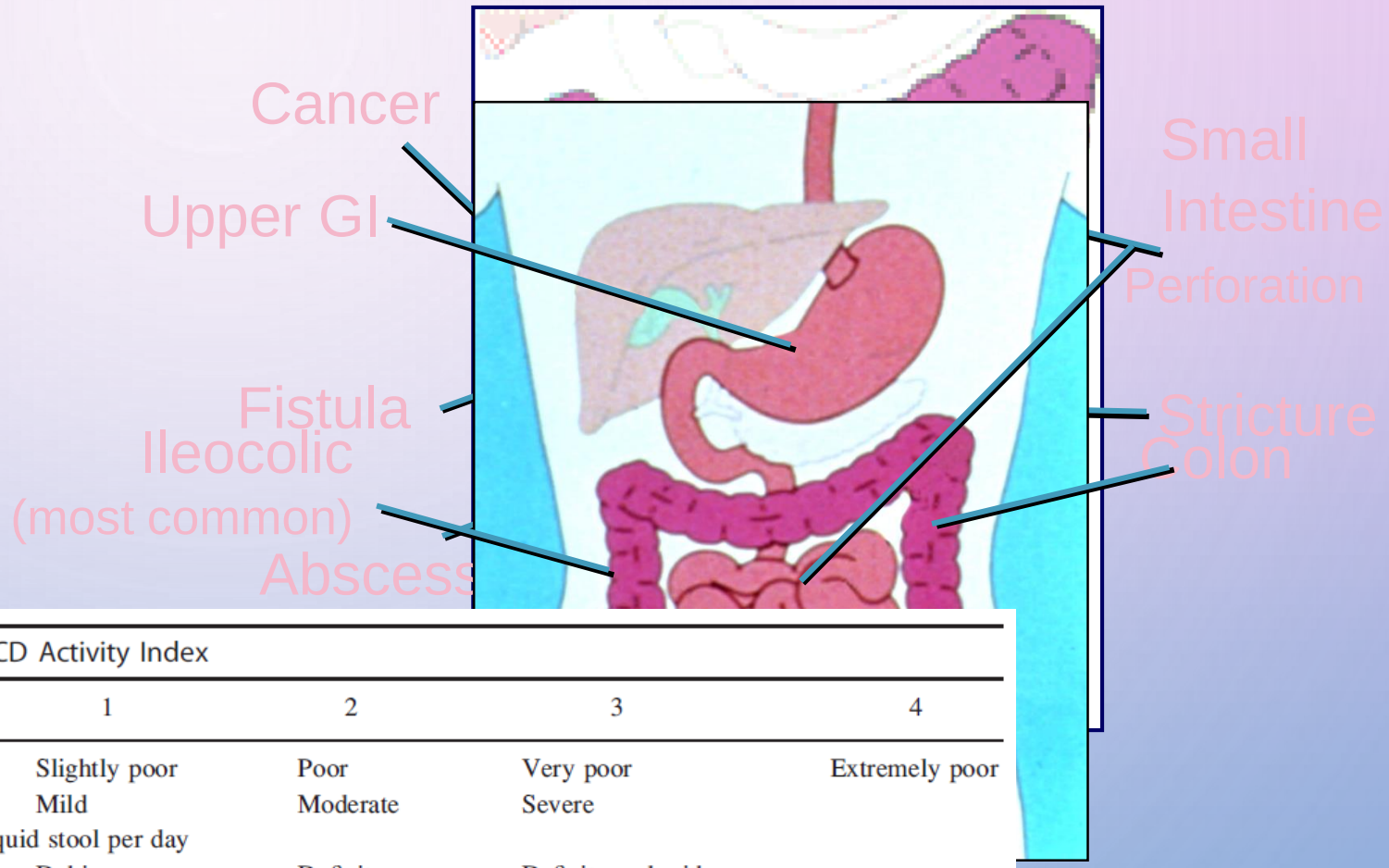
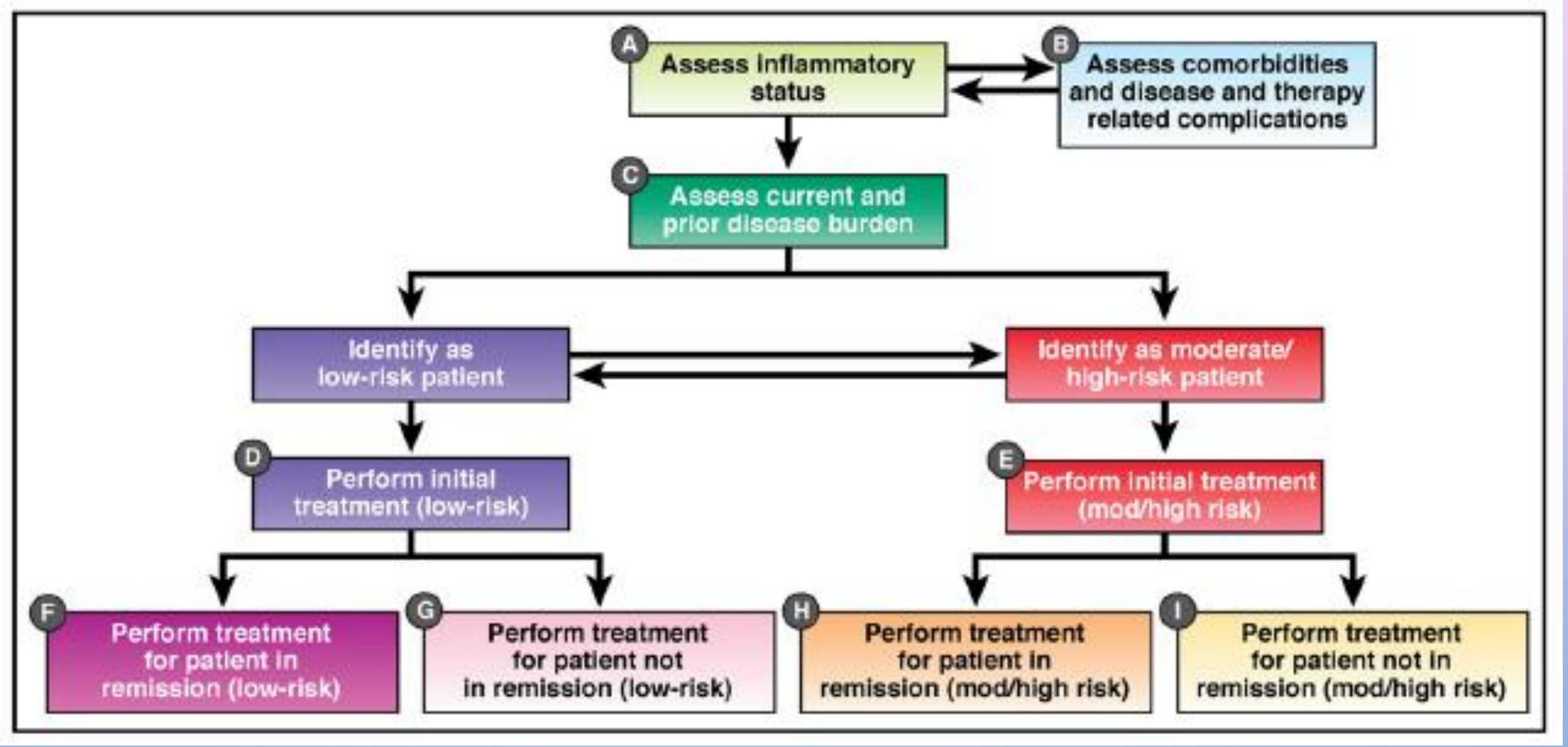
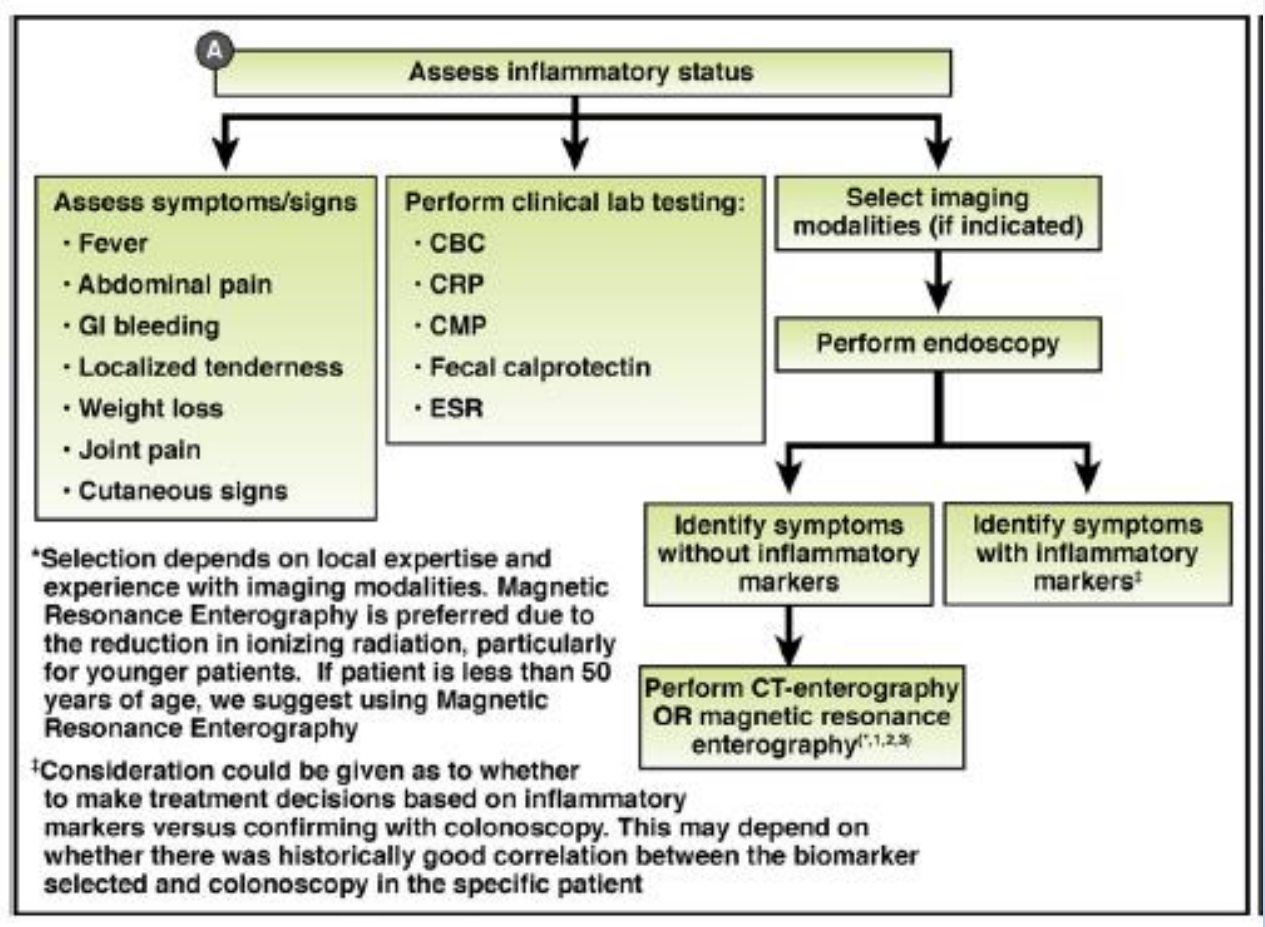


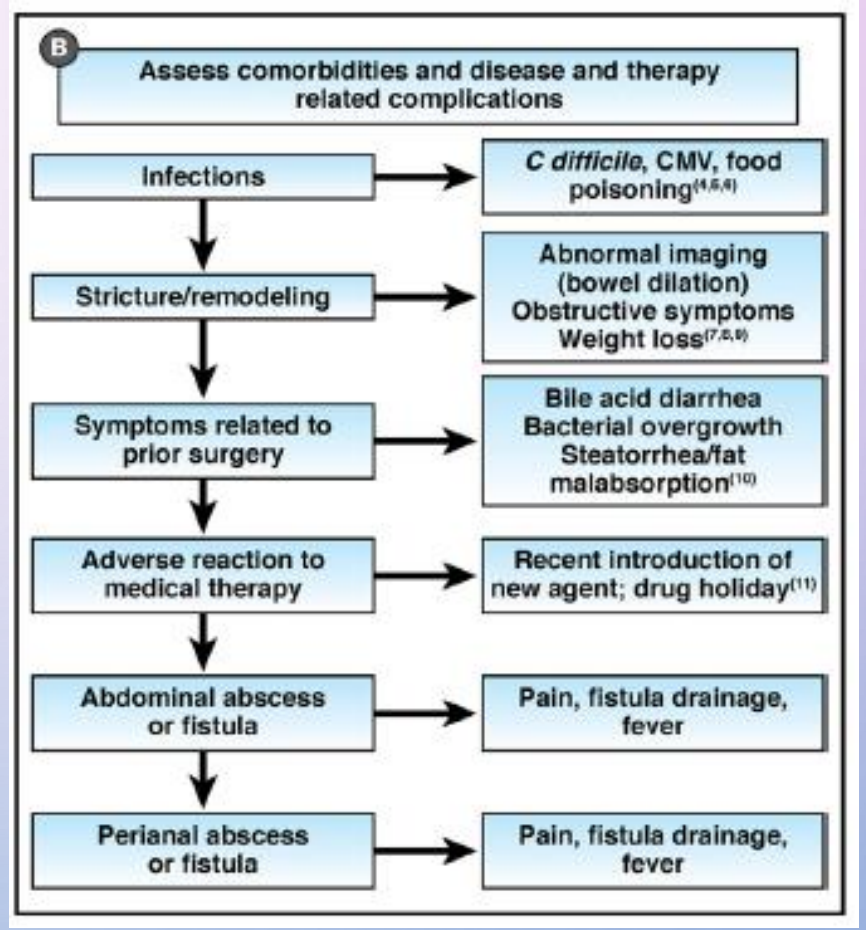
TABLE 5. Harvey-Bradshaw. Simplified CD Activity Index

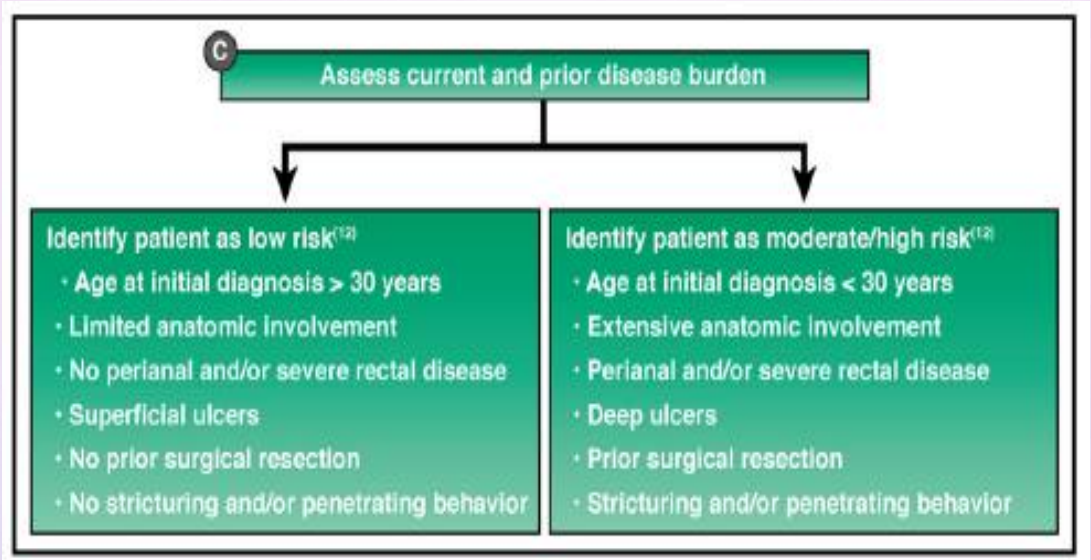
Score	0	1	2	3	4
1. General well-being	Well	Slightly poor	Poor	Very poor	Extremely poor
2. Abdominal pain	None	Mild	Moderate	Severe	
3. Diarrhea	1 for each liquid stool per day				
4. Abdominal mass	None	Dubious	Definite	Definite and with tenderness	
5. Complications	1 for each item: arthralgia, uveitis, erythema nodosum, pyoderma gangrenous, aphthous ulcer, anal fissure, new fistula or abscess				

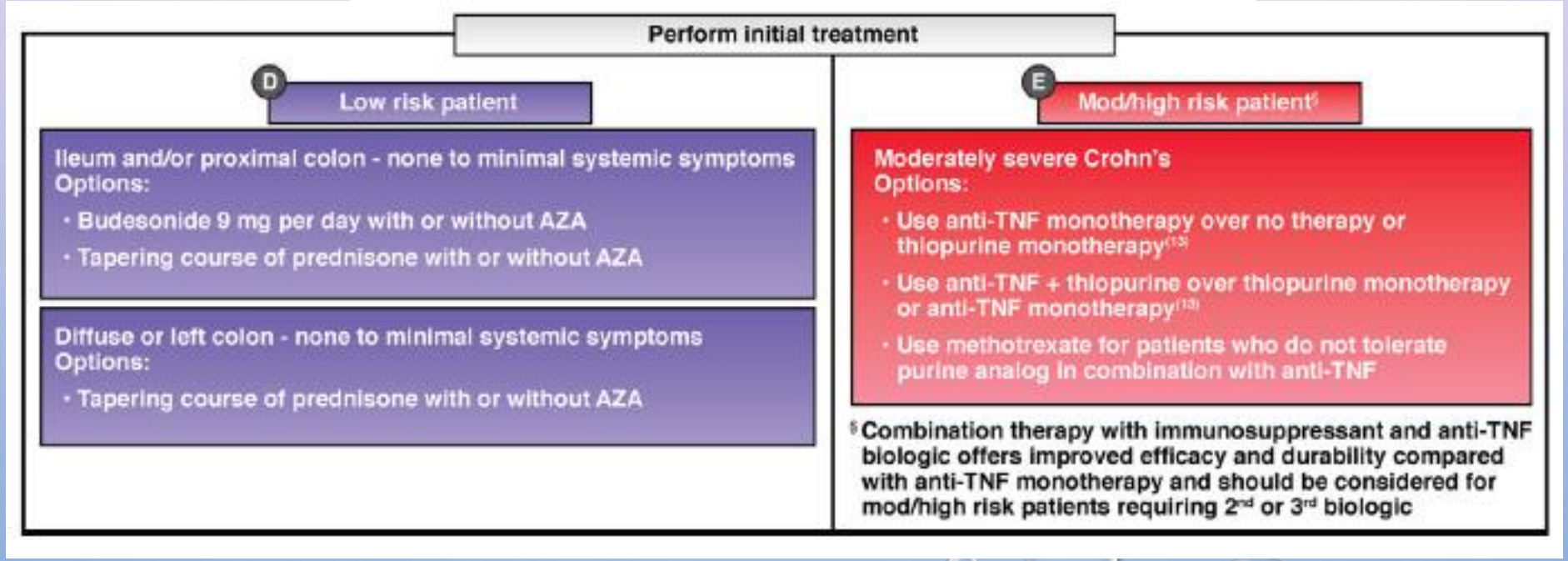
Total disease activity score (=sum of the item scores): ≤4, remission; 5-8,moderately active; 9≤, markedly active.


A
Assess inflammatory status
B
Assess comorbidities and disease and therapy related complications
C
Assess current and prior disease burden
Identify as low-risk patient
Identify as moderate/ high-risk patient
D
Perform initial treatment (low-risk)
E
Perform initial treatment (mod/high risk)
F
Perform treatment for patient in remission (low-risk)
G
Perform treatment for patient not in remission (low-risk)
H
Perform treatment for patient in remission (mod/high risk)
I
Perform treatment for patient not in remission (mod/high risk)


A
Assess inflammatory status
Assess symptoms/signs
· Fever
· Abdominal pain
· GI bleeding
· Localized tenderness
· Weight loss
· Joint pain
· Cutaneous signs
Perform clinical lab testing:
· CBC
· CRP
· CMP
· Fecal calprotectin
· ESR
Select imaging modalities (if indicated)
Perform endoscopy
Identify symptoms without inflammatory markers
Identify symptoms with inflammatory markers‡
Perform CT-enterography OR magnetic resonance enterography[1,1,2,3]
*Selection depends on local expertise and experience with imaging modalities. Magnetic Resonance Enterography is preferred due to the reduction in ionizing radiation, particularly for younger patients. If patient is less than 50 years of age, we suggest using Magnetic Resonance Enterography
‡Consideration could be given as to whether to make treatment decisions based on inflammatory markers versus confirming with colonoscopy. This may depend on whether there was historically good correlation between the biomarker selected and colonoscopy in the specific patient


B
Assess comorbidities and disease and therapy related complications
Infections
C difficile, CMV, food poisoning[4,5,6]
Stricture/remodeling
Abnormal imaging (bowel dilation)
Obstructive symptoms
Weight loss[7,8,9]
Symptoms related to prior surgery
Bile acid diarrhea
Bacterial overgrowth
Steatorrhea/fat malabsorption[10]
Adverse reaction to medical therapy
Recent introduction of new agent; drug holiday[11]
Abdominal abscess or fistula
Pain, fistula drainage, fever
Perianal abscess or fistula
Pain, fistula drainage, fever


C
Assess current and prior disease burden
Identify patient as low risk[12]
· Age at initial diagnosis > 30 years
· Limited anatomic involvement
· No perianal and/or severe rectal disease
· Superficial ulcers
· No prior surgical resection
· No stricturing and/or penetrating behavior
Identify patient as moderate/high risk[12]
· Age at initial diagnosis < 30 years
· Extensive anatomic involvement
· Perianal and/or severe rectal disease
· Deep ulcers
· Prior surgical resection
· Stricturing and/or penetrating behavior


Perform initial treatment
D
Low risk patient
Ileum and/or proximal colon - none to minimal systemic symptoms
Options:
· Budesonide 9 mg per day with or without AZA
· Tapering course of prednisone with or without AZA
Diffuse or left colon - none to minimal systemic symptoms
Options:
· Tapering course of prednisone with or without AZA
E
Mod/high risk patient§
Moderately severe Crohn's
Options:
· Use anti-TNF monotherapy over no therapy or thiopurine monotherapy[13]
· Use anti-TNF + thiopurine over thiopurine monotherapy or anti-TNF monotherapy[13]
· Use methotrexate for patients who do not tolerate purine analog in combination with anti-TNF
§ Combination therapy with immunosuppressant and anti-TNF biologic offers improved efficacy and durability compared with anti-TNF monotherapy and should be considered for mod/high risk patients requiring 2nd or 3rd biologic

MANAGEMENT OF IBS

TABLE 122-1 Suggested Sequence of Treatment of IBS

Predominant Symptom	First Step	Second Step
Bloating	Adjust diet Treat constipation	Probiotic (e.g., containing *Bifidobacteria infantis*) Nonabsorbable antibiotic (e.g., rifaximin) Tricyclic antidepressant, SSRI
Constipation	Fiber supplement (e.g., ispaghula) Polyethylene glycol	Lubiprostone, linaclotide
Diarrhea	Loperamide	5-HT_3 antagonist (e.g., alosetron)
Abdominal pain	Antispasmodic, peppermint oil	Tricyclic antidepressant, SSRI Psychological therapy

5-HT, 5-hydroxytryptamine; SSRIs, selective serotonin reuptake inhibitors

TABLE 122-3 Efficacy of Selected Pharmacologic Treatments for IBS

Pharmacologic Treatment	Number Needed to Treat	Approximate Number Needed to Harm or Adverse Effects	Comments
Treatments for IBS-C			
Chloride channel activators (lubiprostone)	13	N/A	Up to 25% were reported to suffer nausea; no serious adverse events Long-term data, report less nausea than previously
Guanylate cyclase agonists (linaclotide)	7-8	20	Diarrhea is the most common adverse effect, occurring in ≈5%
Selective serotonin reuptake inhibitors	3-4	18	None
Treatments for IBS-D			
Rifaximin	11	8971	None
5-HT_3 receptor antagonists (e.g., alosetron)	8	19	Rare reports of ischemic colitis; use currently restricted to women under a risk-management strategy
Tricyclic antidepressants	8	18	None
Antispasmodics	5	17-18	Most common adverse events are dry mouth, dizziness, and blurred vision Efficacy of anticholinergics is not established
Peppermint oil	2-3	N/A	Adverse event rate is comparable to placebo

Adapted from Halland M, Talley NJ. New treatments for IBS. Nat Rev Gastroenterol Hepatol 2012; 10:13-23.

TABLE 122-4 Selected Emerging and Possible Future Pharmacologic Treatments for IBS

Drug Class	Example of Drug	Comments
Drugs Acting on Pain Receptors		
Calcium channel inhibitors	Pregabalin and gabapentin	Improved pain scores, increased rectal compliance, and higher thresholds for pain, discomfort, and bloating
Drugs Targeting Visceral Hypersensitivity		
Serotonin synthesis inhibitors	LX1031	Positive phase II trial data, including a favorable adverse event profile, although the effect is attenuated with time
Peripheral opioid receptor agonists	Asimadoline/ JN-38488502	Promising findings from animal data have not been replicated in human studies
CCK-1 antagonists	Dexloxiglumide	Satisfactory relief of symptoms is higher than with placebo in females with IBS-C
Drugs Targeting Motility		
Corticotrophin-releasing factor antagonists	Pexacerfont	No effect on stool frequency, consistency, or IBS symptoms
$5HT_4$ agonists	Velusetrag, prucalopride, naronapride	Prucalopride is effective in chronic constipation; data from trials in IBS patients are awaited
Drugs Targeting Inflammation		
Mast cell stabilizers	Ketotifen	Promising data from a small controlled trial
5-ASA	Mesalazine	Well-designed trials in IBS patients are ongoing
Centrally Acting Drugs		
Benzodiazepine receptor modulators	Dextofisopam	Improved bowel consistency in a small trial, but concerns have been raised about higher rates of abdominal pain compared with placebo
Bile Acid Modulators		
Bile acid sequestrants	Colesevelam	Case reports of efficacy and limited trial data
Bile acid transporter inhibitor	A3309	Promising data from patients with chronic constipation
Bile acid	Chenodeoxycholate	Healthy volunteer data have demonstrated accelerated colonic transit

Adapted from Halland M, Talley NJ. New treatments for IBS. Nat Rev Gastroenterol Hepatol 2012; 10:13-23.

TABLE 122-2 Efficacy of Selected Non-pharmacologic Treatments for IBS

Non-pharmacologic Treatment	Number Needed to Treat	Adverse Effects	Comments
Hypnotherapy	2-3	No reports of adverse events in published randomized trials	Several controlled trials in different settings and populations support long-term efficacy
Cognitive behavioral therapy	3	No reports of adverse events in published randomized trials	Can be delivered effectively using the Internet
Soluble fiber	6	74% (any individual adverse effect)	No serious/life-threatening adverse event have been reported
Low FODMAP diet	4-5	No adverse effects reported	Small trials only
Exercise	6-7	No adverse effects reported	Single controlled trial only; results are only statistically significant for preventing a clinically important increase in symptoms
Probiotics	4	Adverse event rate similar to placebo	Magnitude of the benefit and the most effective species and doses remain uncertain

FODMAP, Fermentable oligo-di-mono-saccharides, and polyols.

TREATMENT

IBD

- AMINOSALICYLATES, SUCH AS SULFASALAZINE, MESALAMINE, OLSALAZINE AND BALSALAZIDE, ARE MEDICINES CONTAINING 5-AMINOSALYCYLIC ACID
- CORTICOSTEROIDS, INCLUDING BUDESONIDE, PREDNISONE AND PREDNISOLONE, ARE STEROIDS THAT ARE USED AS SHORTTERM TREATMENT FLARES
- IMMUNOMODULATORS, SUCH AS AZATHIOPRINE, 6-MP, CYCLOSPORINE AND METHOTREXATE
- BIOLOGIC THERAPIES, INCLUDING INFLIXIMAB, ADALIMUMAB, CERTOLIZUMAB PEGOL, GOLIMUMAB, LIZUMAB AND NATALIZUMAB
- ANTIBIOTICS, SUCH AS METRONIDAZOLE AND CIPROFLOXACIN, ARE USED WHEN INFECTION OCCURS

IBS

- MEDICATIONS ARE PRESCRIBED TO TREAT IBS AND SPECIFIC SYMPTOMS
- ALOSETRON HYDROCHLORIDE ➔ SEROTONIN 5 HT3 ANTAGONIST (BLOCKER) INDICATED FOR TREATMENT OF WOMEN WITH SEVERE DIARRHEA-PREDOMINANT IBS (IBS-D)
- LUBIPROSTONE (AMITIZA) IS A CHLORIDE CHANNEL ACTIVATOR INDICATED FOR TREATMENT OF IBS WITH CONSTIPATION (IBS-C) IN WOMEN 18 YEARS OR OLDER.
- LAXATIVES, ANTI DIARRHEA, ANTI SPASMODIC, ANTI DEPRESSANT, PROBIOTIC, ANTIBIOTIC (RIFAXIMINE) FOR SIBO AND FIBER SUPPLEMENT

COMPLICATION

IBD

- CD – STENOSIS, FISTULA, ABSCESS, BOWEL OBSTRUCTION AND COLON CANCER (IF THE COLON IS INVOLVED)
- UC – COLON CANCER
- • BOTH CD AND UC – ULCERS, MALNUTRITION, OSTEOPOROSIS, ANEMIA

IBS

- IMPAIRED QUALITY OF LIFE

TERIMA KASIH

Table 70.1 Clinical clues to the pathogenesis of Crohn's disease and ulcerative colitis.

	Crohn's disease	Ulcerative colitis
Distribution within the gastrointestinal tract	Mouth to anus	Colon alone
Small bowel involvement	Frequent	Unusual except in the case of backwash ileitis
Rectal involvement	Uncommon (<50% of those with colonic Crohn's disease)	Nearly universal
Perianal involvement	Seen in one-third of patients	Uncommon
Complications of progressive disease	Stricturing and/or penetrating disease is common	Stricture or abscess formation is uncommon
Typical symptoms	Diarrhea, abdominal pain, weight loss	Bloody diarrhea, urgency
Endoscopic appearance	Skip lesions with intervening normal mucosa, cobble-stoning, aphthous ulcerations	Usually contiguous inflammation with granular and friable mucosa
Histology	Focal crypt architectural irregularity and inflammation; granuloma formation may be seen in 30% Pyloric gland metaplasia seen in 2%–27%; focal enhanced gastritis may be seen in a subset	Crypt abscess, crypt architectural irregularity is more contiguous
Serological markers	Predominantly antimicrobial antibodies: ASCA, anti-OmpC, anti-CBir1, anticarbohydrate antigens	pANCA
Depth of inflammation	Transmural	Mucosa and submucosa

ASCA, anti-*Saccharomyces cerevisiae* antibody; pANCA, perinuclear antineutrophil cytoplasmic antibody.

CLINICAL PRESENTATION AND NATURAL HISTORY

- THE CLINICAL PRESENTATION OF PATIENTS WITH CROHN'S DISEASE IS DIVERSE AND HETEROGENEOUS, WITH SYMPTOMS THAT CAN RANGE FROM SILENT, INSIDIOUS PROGRESSION OF MID-SMALL BOWEL INFLAMMATION THAT MIGHT BE MISDIAGNOSED FOR YEARS AS "IRRITABLE BOWEL SYNDROME,"
- TO A MORE DRAMATIC, ACUTE PRESENTATION OF GASTROINTESTINAL HEMORRHAGE, PERIANAL ABSCESS/FISTULA, INTESTINAL OBSTRUCTION, OR PROFOUND DIARRHEA AND/OR WEIGHT LOSS

- IRRITABLE BOWEL SYNDROME (IBS) IS A FUNCTIONAL GASTROINTESTINAL DISORDER (FGID) THAT IS CHARACTERIZED BY ABDOMINAL PAIN ASSOCIATED WITH ALTERATIONS IN STOOL FORM AND/OR FREQUENCY.
- IBS IS FREQUENTLY DIAGNOSED IN BOTH PRIMARY CARE AND SPECIALTY PRACTICE

- THE TRADITIONAL DICHOTOMY BETWEEN “FUNCTIONAL” AND “ORGANIC.” THERE IS A BIOCHEMICAL BASIS FOR ALL SYMPTOMS AND THE COMPLEX INTERACTIONS BETWEEN THE HOST AND ENVIRONMENT IS AFFECTED BY PERIPHERAL AND CENTRAL INPUTS. ONE COULD VIEW IBS AS MULTIPLE “ORGANIC” DISEASES

Table 72.1 Environmental risk factors for the inflammatory bowel diseases. Source: Frolkis et al. 2013 [341]. Reproduced with permission of Pulsus Group Inc.

Environmental risk factor	Strength of association[a]	
	Crohn's disease	Ulcerative colitis
Smoking		
Current	Strong positive	Strong negative
Previous	Strong positive	Strong positive
Never	Negative	Positive
Hygiene		
Multiple siblings	Questionable negative	Questionable negative
Farm in childhood	Questionable negative	Questionable negative
Microorganisms		
Helicobacter pylori	Negative	Negative
Helminths	Negative	Negative
Mycobacterium avium spp. paratuberculosis	Positive	Not studied
Dysbiosis	Positive	Not studied
Urban living environment	Questionable positive	Questionable positive
Medication		
Nonsteroidal antiinflammatory drugs	Positive	Positive
Oral contraceptive pills	Positive	Positive
Isotretinoin	Questionable positive	Questionable positive
Antibiotics	Questionable positive	Questionable positive
Appendectomy	Not associated	Negative
Nutrition		
Fruits and vegetables	Questionable negative	Questionable negative
Fat	Questionable positive	Questionable positive
Sugar/sweeteners	Questionable positive	Questionable positive
Animal protein	Not studied	Questionable positive
Fiber	Questionable negative	Questionable negative
Breastfeeding	Questionable negative	Questionable negative
Northern residence	Positive	Positive
Ambient air pollution		
Sulfur dioxide	Questionable not associated	Questionable positive
Nitrogen dioxide in children	Questionable positive	Questionable not associated
Nitrogen dioxide in middle-age adults	Questionable negative	Questionable not associated
Stress	Questionable positive	Questionable positive

[a] Strength of association based on information from included studies.

- GUIDELINES SUMMARY
- AMERICAN COLLEGE OF GASTROENTEROLOGY
- IN 2018, THE AMERICAN COLLEGE OF GASTROENTEROLOGY PUBLISHED THE FOLLOWING GUIDELINES ON THE MANAGEMENT OF CROHN DISEASE IN ADULTS [148] :
- FECAL CALPROTECTIN IS A HELPFUL TEST THAT SHOULD BE CONSIDERED TO HELP DIFFERENTIATE THE PRESENCE OF INFLAMMATORY BOWEL DISEASE (IBD) FROM IRRITABLE BOWEL SYNDROME (IBS).
- IN PATIENTS AT PARTICULARLY HIGH RISK FOR COLORECTAL NEOPLASIA (EG, PERSONAL HISTORY OF DYSPLASIA, PRIMARY SCLEROSING CHOLANGITIS), CHROMOENDOSCOPY SHOULD BE USED DURING COLONOSCOPY, AS IT MAY INCREASE THE DIAGNOSTIC YIELD FOR DETECTION OF COLORECTAL DYSPLASIA, ESPECIALLY COMPARED WITH STANDARD-DEFINITION WHITE LIGHT ENDOSCOPY.
- FOR PATIENTS UNDERGOING SURVEILLANCE COLONOSCOPY, THERE IS INSUFFICIENT EVIDENCE TO RECOMMEND UNIVERSAL CHROMOENDOSCOPY FOR IBD COLORECTAL NEOPLASIA SURVEILLANCE IF THE ENDOSCOPIST HAS ACCESS TO HIGH-DEFINITION WHITE LIGHT ENDOSCOPY.
- NARROW-BAND IMAGING SHOULD NOT BE USED DURING COLORECTAL NEOPLASIA SURVEILLANCE EXAMINATIONS FOR CROHN DISEASE.

- NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS) MAY EXACERBATE DISEASE ACTIVITY AND SHOULD BE AVOIDED WHEN POSSIBLE IN PATIENTS WITH CROHN DISEASE.
- CIGARETTE SMOKING EXACERBATES DISEASE ACTIVITY AND ACCELERATES DISEASE RECURRENCE AND SHOULD BE AVOIDED.
- USE OF ANTIBIOTICS SHOULD NOT BE RESTRICTED IN CROHN DISEASE PATIENTS IN ORDER TO PREVENT DISEASE FLARES.
- PERCEIVED STRESS, DEPRESSION, AND ANXIETY, WHICH ARE COMMON IN IBD, ARE FACTORS THAT LEAD TO DECREASED HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH CROHN DISEASE AND LEAD TO LOWER ADHERENCE TO PROVIDER RECOMMENDATIONS. ASSESSMENT AND MANAGEMENT OF STRESS, DEPRESSION, AND ANXIETY SHOULD BE INCLUDED AS PART OF THE COMPREHENSIVE CARE OF THE CROHN DISEASE PATIENT.
- SULFASALAZINE IS EFFECTIVE FOR TREATING SYMPTOMS OF COLONIC CROHN DISEASE THAT IS MILD TO MODERATELY ACTIVE AND CAN BE USED AS TREATMENT FOR THIS PATIENT POPULATION.

- CONTROLLED ILEAL RELEASE BUDESONIDE AT A DOSE OF 9 MG ONCE DAILY IS EFFECTIVE AND SHOULD BE USED FOR INDUCTION OF YMPTOMATIC REMISSION FOR PATIENTS WITH MILD TO MODERATE ILEOCECAL CROHN DISEASE.
- METRONIDAZOLE IS NOT MORE EFFECTIVE THAN PLACEBO AS THERAPY FOR LUMINAL INFLAMMATORY CROHN DISEASE AND SHOULD NOT BE USED AS PRIMARY THERAPY.
- FOR PATIENTS WITH LOW RISK OF PROGRESSION, TREATMENT OF ACTIVE SYMPTOMS WITH ANTIDIARRHEALS, OTHER NONSPECIFIC MEDICATIONS, AND DIETARY MANIPULATION, ALONG WITH CAREFUL OBSERVATION FOR INADEQUATE SYMPTOM RELIEF, WORSENING INFLAMMATION, OR DISEASE PROGRESSION, IS ACCEPTABLE.
- ORAL CORTICOSTEROIDS ARE EFFECTIVE AND CAN BE EMPLOYED FOR SHORT-TERM USE IN ALLEVIATING SIGNS AND SYMPTOMS OF MODERATELY TO SEVERELY ACTIVE CROHN DISEASE. THIOPURINES (AZATHIOPRINE, 6-MERCAPTOPURINE) ARE EFFECTIVE AND SHOULD BE CONSIDERED FOR USE FOR STEROID SPARING IN CROHN DISEASE.

- AZATHIOPRINE AND 6-MERCAPTOURINE ARE EFFECTIVE THERAPIES AND SHOULD BE CONSIDERED FOR TREATMENT OF PATIENTS WITH CROHN DISEASE FOR MAINTENANCE OF REMISSION
- THIOPURINE METHYLTRANSFERASE (TPMT) TESTING SHOULD BE CONSIDERED BEFORE INITIAL USE OF AZATHIOPRINE OR 6-MERCAPTOPURINE TO TREAT PATIENTS WITH CROHN DISEASE.
- METHOTREXATE (UP TO 25 MG ONCE WEEKLY INTRAMUSCULARLY [IM] OR SUBCUTANEOUSLY [SC]) IS EFFECTIVE AND SHOULD BE CONSIDERED FOR USE IN ALLEVIATING SIGNS AND SYMPTOMS IN PATIENTS WITH STEROID-DEPENDENT CROHN DISEASE AND FOR MAINTAINING REMISSION.
- ANTI–TUMOR NECROSIS FACTOR (ANTI-TNF) AGENTS (INFLIXIMAB, ADALIMUMAB, CERTOLIZUMAB PEGOL) SHOULD BE USED TO TREAT CROHN DISEASE THAT IS RESISTANT TO TREATMENT WITH CORTICOSTEROIDS.
- ANTI-TNF AGENTS SHOULD BE GIVEN FOR CROHN DISEASE REFRACTORY TO THIOPURINES OR METHOTREXATE.

- COMBINATION THERAPY OF INFLIXIMAB WITH IMMUNOMODULATORS (THIOPURINES) IS MORE EFFECTIVE THAN TREATMENT WITH EITHER IMMUNOMODULATORS ALONE OR INFLIXIMAB ALONE IN PATIENTS WHO ARE NAIVE TO THOSE AGENTS.
- FOR PATIENTS WITH MODERATELY TO SEVERELY ACTIVE CROHN DISEASE AND OBJECTIVE EVIDENCE OF ACTIVE DISEASE, ANTI-INTEGRIN THERAPY (WITH VEDOLIZUMAB) WITH OR WITHOUT AN IMMUNOMODULATOR IS MORE EFFECTIVE THAN PLACEBO AND SHOULD BE CONSIDERED FOR USE IN INDUCTION OF SYMPTOMATIC REMISSION IN PATIENTS WITH CROHN DISEASE.
- NATALIZUMAB IS MORE EFFECTIVE THAN PLACEBO AND SHOULD BE CONSIDERED FOR USE IN INDUCTION OF SYMPTOMATIC RESPONSE AND REMISSION IN PATIENTS WITH ACTIVE CROHN DISEASE.
- NATALIZUMAB SHOULD BE USED FOR MAINTENANCE OF NATALIZUMAB-INDUCED REMISSION OF CROHN DISEASE ONLY IF SERUM ANTIBODY TO JOHN CUNNINGHAM (JC) VIRUS IS NEGATIVE. TESTING FOR ANTI-JC VIRUS ANTIBODY SHOULD BE REPEATED EVERY 6 MONTHS AND TREATMENT STOPPED IF THE RESULT IS POSITIVE.

- USTEKINUMAB SHOULD BE GIVEN FOR MODERATE TO SEVERE CROHN DISEASE PATIENTS WHO FAILED PREVIOUS TREATMENT WITH CORTICOSTEROIDS, THIOPURINES, METHOTREXATE, OR ANTI-TNF INHIBITORS OR WHO HAVE HAD NO PRIOR EXPOSURE TO ANTI-TNF INHIBITORS.
- INTRAVENOUS CORTICOSTEROIDS SHOULD BE USED TO TREAT SEVERE OR FULMINANT CROHN DISEASE.
- ANTI-TNF AGENTS (INFLIXIMAB, ADALIMUMAB, CERTOLIZUMAB PEGOL) CAN BE CONSIDERED TO TREAT SEVERELY ACTIVE CROHN DISEASE.
- INFLIXIMAB MAY BE ADMINISTERED TO TREAT FULMINANT CROHN DISEASE. INFLIXIMAB IS EFFECTIVE AND SHOULD BE CONSIDERED IN TREATING PERIANAL FISTULAS IN CROHN DISEASE. INFLIXIMAB MAY BE EFFECTIVE AND SHOULD BE CONSIDERED IN TREATING ENTEROCUTANEOUS AND RECTOVAGINAL FISTULAS IN CROHN DISEASE.

- ADALIMUMAB AND CERTOLIZUMAB PEGOL MAY BE EFFECTIVE AND SHOULD BE CONSIDERED IN TREATING PERIANAL FISTULAS IN CROHN DISEASE.
- THIOPURINES (AZATHIOPRINE, 6-MERCAPTOPURINE) MAY BE EFFECTIVE AND SHOULD BE CONSIDERED IN TREATING FISTULIZING CROHN DISEASE.
- THE ADDITION OF ANTIBIOTICS TO INFLIXIMAB IS MORE EFFECTIVE THAN INFLIXIMAB ALONE AND SHOULD BE CONSIDERED IN TREATING PERIANAL FISTULAS.
- DRAINAGE OF ABSCESSES (SURGICALLY OR PERCUTANEOUSLY) SHOULD BE UNDERTAKEN BEFORE TREATMENT OF FISTULIZING CROHN DISEASE WITH ANTI-TNF AGENTS.
- ONCE REMISSION IS INDUCED WITH CORTICOSTEROIDS, A THIOPURINE OR METHOTREXATE SHOULD BE CONSIDERED.

- ANTI-TNF THERAPY, SPECIFICALLY INFLIXIMAB, ADALIMUMAB, AND CERTOLIZUMAB PEGOL, SHOULD BE USED TO MAINTAIN REMISSION OF ANTI-TNF–INDUCED REMISSION.
- ANTI-TNF MONOTHERAPY IS EFFECTIVE AT MAINTAINING ANTI-TNF–INDUCED REMISSION, BUT BECAUSE OF THE POTENTIAL FOR IMMUNOGENICITY AND LOSS OF RESPONSE, COMBINATION WITH AZATHIOPRINE/6-MERCAPTOPURINE OR METHOTREXATE SHOULD BE CONSIDERED.
- IMIDAZOLE ANTIBIOTICS (METRONIDAZOLE AND ORNIDAZOLE) AT DOSES BETWEEN 1 AND 2 G/DAY CAN BE USED AFTER SMALL INTESTINAL RESECTION IN CROHN DISEASE PATIENTS TO PREVENT RECURRENCE.
- IN HIGH-RISK PATIENTS, ANTI-TNF AGENTS SHOULD BE STARTED WITHIN 4 WEEKS OF SURGERY IN ORDER TO PREVENT POSTOPERATIVE CROHN DISEASE RECURRENCE.
- AN INTRA-ABDOMINAL ABSCESS SHOULD BE TREATED WITH ANTIBIOTICS AND A DRAINAGE PROCEDURE, EITHER RADIOGRAPHICALLY OR SURGICALLY.

- CROHN DISEASE RADIOLOGIC EVALUATION
- IN 2017, AN EXPERT PANEL, WHICH INCLUDED CONTRIBUTORS FROM THE SOCIETY OF ABDOMINAL RADIOLOGY CROHN'S DISEASE–FOCUSED PANEL, THE SOCIETY OF PEDIATRIC RADIOLOGY, AND THE AMERICAN GASTROENTEROLOGICAL ASSOCIATION, ISSUED THE FOLLOWING GUIDELINES ON THE USE OF COMPUTED TOMOGRAPHY ENTEROGRAPHY (CTE) AND MAGNETIC RESONANCE ENTEROGRAPHY (MRE) IN PATIENTS WITH SMALL BOWEL CROHN DISEASE

- THE NUMBER OF INVOLVED BOWEL SEGMENTS AND THEIR LOCATION, AS WELL AS THE LENGTH AND DEGREE OF UPSTREAM DILATATION OF CROHN STRICTURES, SHOULD BE REPORTED BY RADIOLOGISTS TO HELP GASTROENTEROLOGISTS AND SURGEONS DETERMINE THE BEST THERAPEUTIC PLAN.
- RADIOLOGISTS SHOULD STATE IF MURAL INFLAMMATION IS PRESENT WHEN DESCRIBING AREAS WITH STRICTURE OR PENETRATING DISEASE.
- CROSS-SECTIONAL ENTEROGRAPHY SHOULD BE PERFORMED AT CROHN DISEASE DIAGNOSIS.
- CONSIDER CROSS-SECTIONAL ENTEROGRAPHY FOR DISEASE MONITORING IN PATIENTS WITH SMALL BOWEL DISEASE OR PENETRATING COMPLICATIONS.

- WHILE A DEDICATED PELVIC MAGNETIC RESONANCE (MR) STUDY IS NEEDED IN PATIENTS WITH PERIANAL DISEASE, ALL CTES AND MRES SHOULD ALSO INCLUDE IMAGING OF THE ANUS.
- RADIOLOGISTS SHOULD COMMENT ON AND DESCRIBE INTRAMURAL T2 HYPERINTENSITY, RESTRICTED DIFFUSION, PERIENTERIC STRANDING, WALL THICKNESS, AND MURAL ULCERATIONS SEEN ON IMAGING, BECAUSE THEY TYPICALLY CORRELATE WITH DISEASE SEVERITY.
- MRE IS PREFERRED OVER CTE TO ESTIMATE RESPONSE TO MEDICAL TREATMENT IN PATIENTS WITH ASYMPTOMATIC DISEASE.
- NONCONTRAST MRE WITH T2-WEIGHTED AND DIFFUSION-WEIGHTED IMAGING IS AN “ACCEPTABLE ALTERNATIVE” WHEN INTRAVENOUS CONTRAST AGENTS CANNOT BE USED.
- RADIOLOGISTS SHOULD EVALUATE CTE AND MRE EXAMINATIONS FOR SIGNS OF MESENTERIC VENOUS THROMBOSIS, OCCLUSIONS, OR SMALL BOWEL VARICES.

MANAGEMENT OF FISTULAE

- FISTULAE BETWEEN BOWEL LOOPS (EG, ILEOILEAL, ILEOCECAL, OR ILEOSIGMOID) ARE USUALLY BENIGN AND MAY NOT PRODUCE ANY MAJOR PROBLEMS. MEDICAL MANAGEMENT IS USED TO TREAT UNDERLYING INFECTIONS AND SYMPTOMS WITH ORAL METRONIDAZOLE (1 G/DAY) FOR AT LEAST 1-2 MONTHS.
- INFLIXIMAB IS EFFECTIVE IN PATIENTS WHO HAVE REFRACTORY PERIANAL AND ENTEROCUTANEOUS FISTULAE. CURRENT CLINICAL PRACTICE IS TO GIVE IT 5 MG/KG BY INTRAVENOUS (IV) INFUSION AT 0 WEEKS, 2 WEEKS, AND 6 WEEKS, FOLLOWED BY MAINTENANCE IV INFUSIONS EVERY 8 WEEKS. ON AVERAGE, THE EFFECT LASTS FOR 12 WEEKS.