Diarrhea Cont. Chronic

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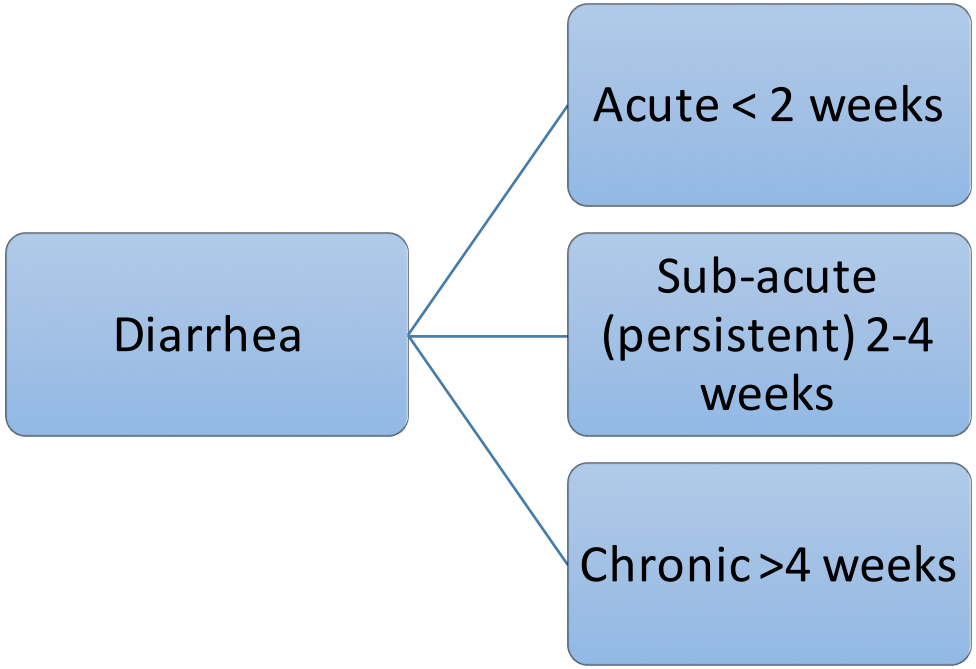
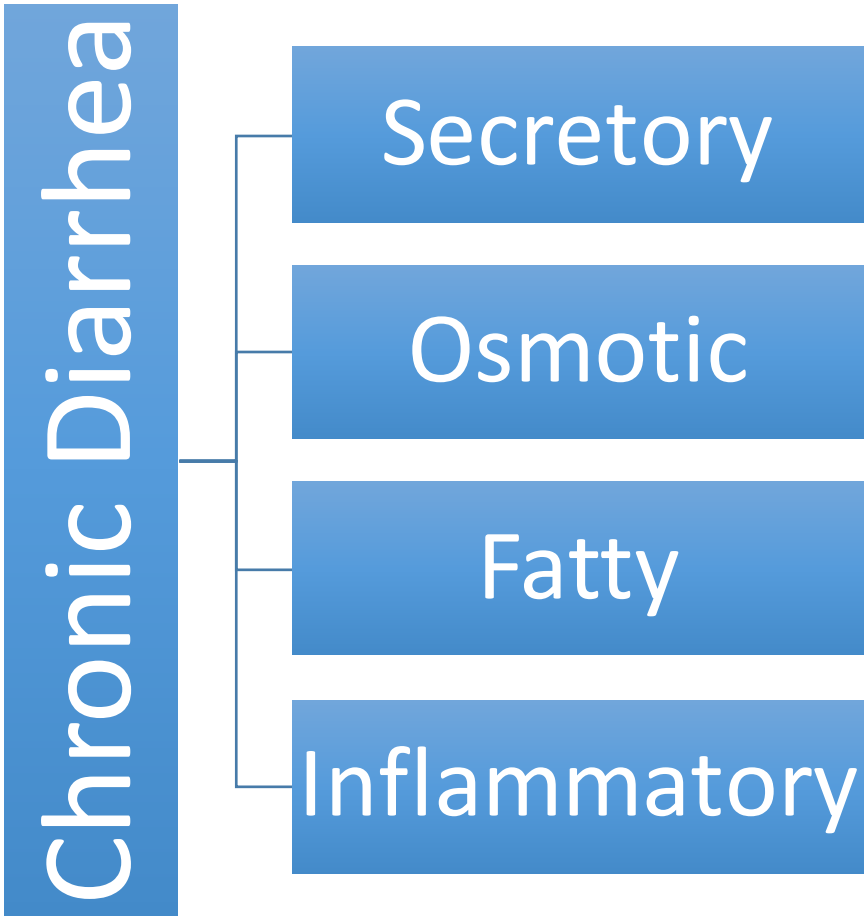
Outline

- Basic principles.
- Classification of chronic diarrhea.
- Most common causes of chronic diarrhea.
- Case discussions.

General Principles

- Diarrhea:
  - Passage of loose\watery stool **at least 3 (mes per 24 hours (>200ml).**
- Diarrhea classification based on **duration:**




Chronic Diarrhea
Secretory
Osmotic
Fatty
Inflammatory

1. Secretory

- Due to derangement of electrolyte and fluid transport across the intestinal epithelium.
- Medications: laxatives, ethanol.
- Bowel resection, congenital mucosal defect, idiopathic secretory diarrhea.
- Hormones: serotonin, and prostaglandin.
- **Not affected by fasting!**

2. Osmotic

- Osmotically active solute.
- Driving water into the lumen.
- Osmotic laxatives: Mg+2, SO4+ etc.(poorly absorbed ions).
- Lactase def. (poorly absorbed sugars)
- **Ptx gets better when fasting.**

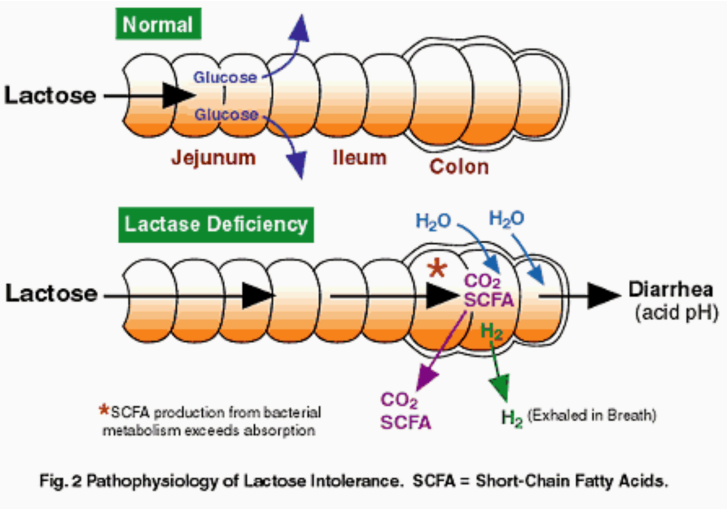
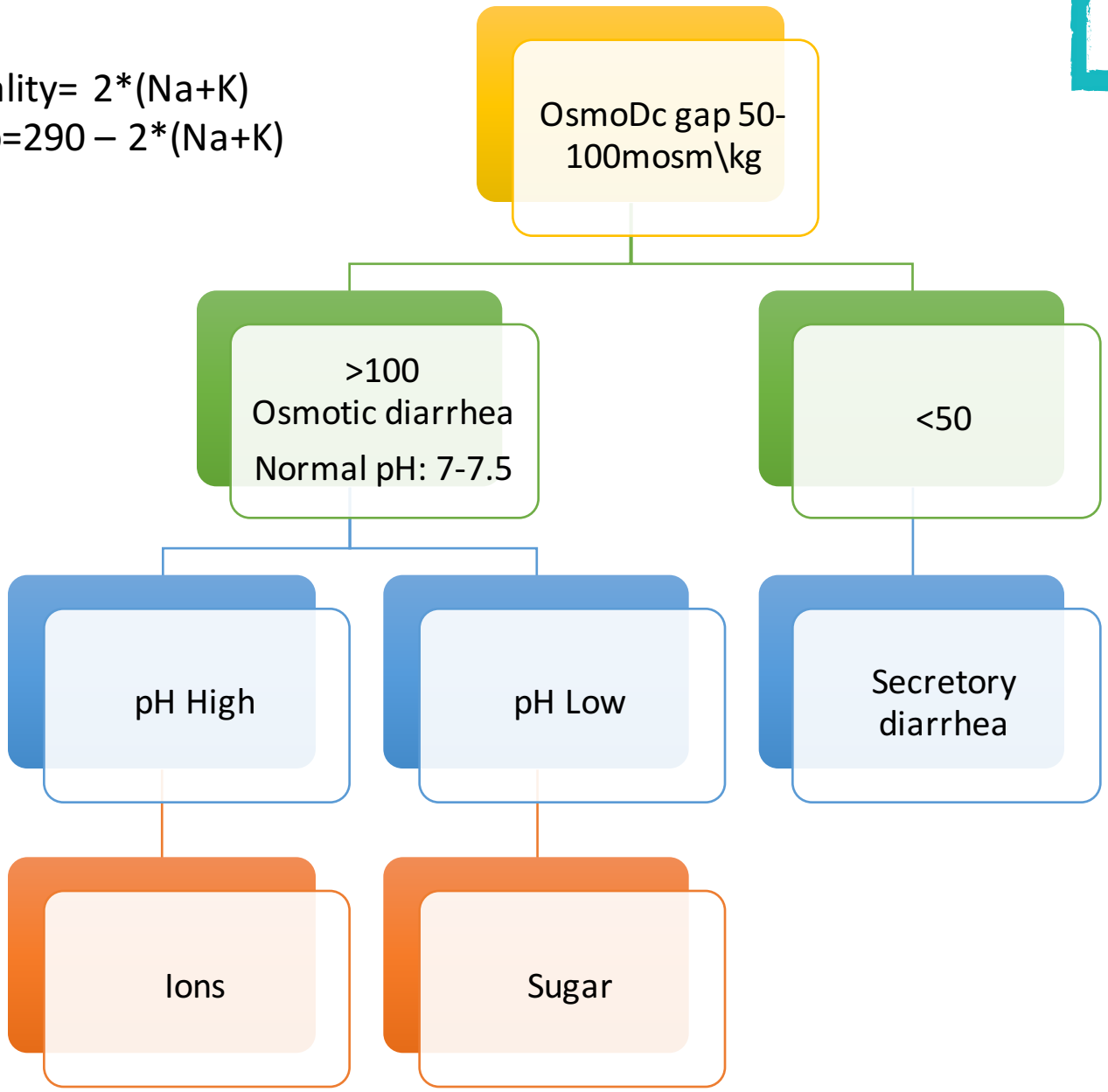
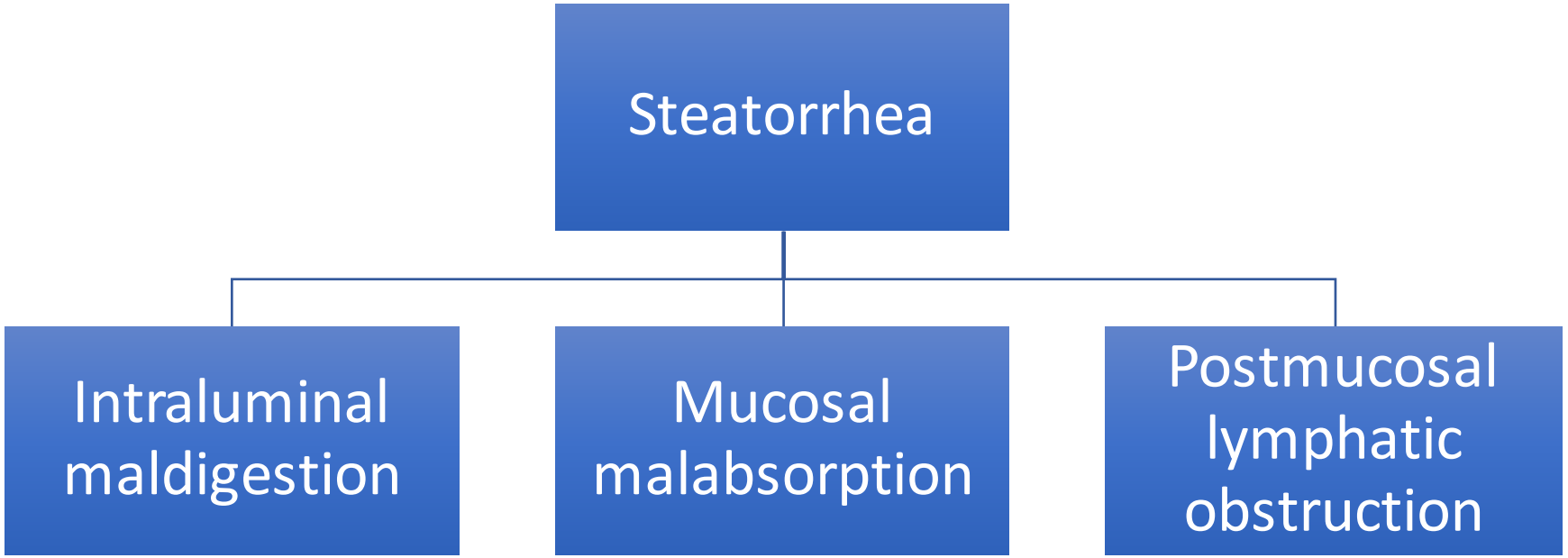


Fig. 2 Pathophysiology of Lactose Intolerance. SCFA = Short-Chain Fatty Acids.

Stool osmolality= 2*(Na+K)
Osmotic gap=290 – 2*(Na+K)



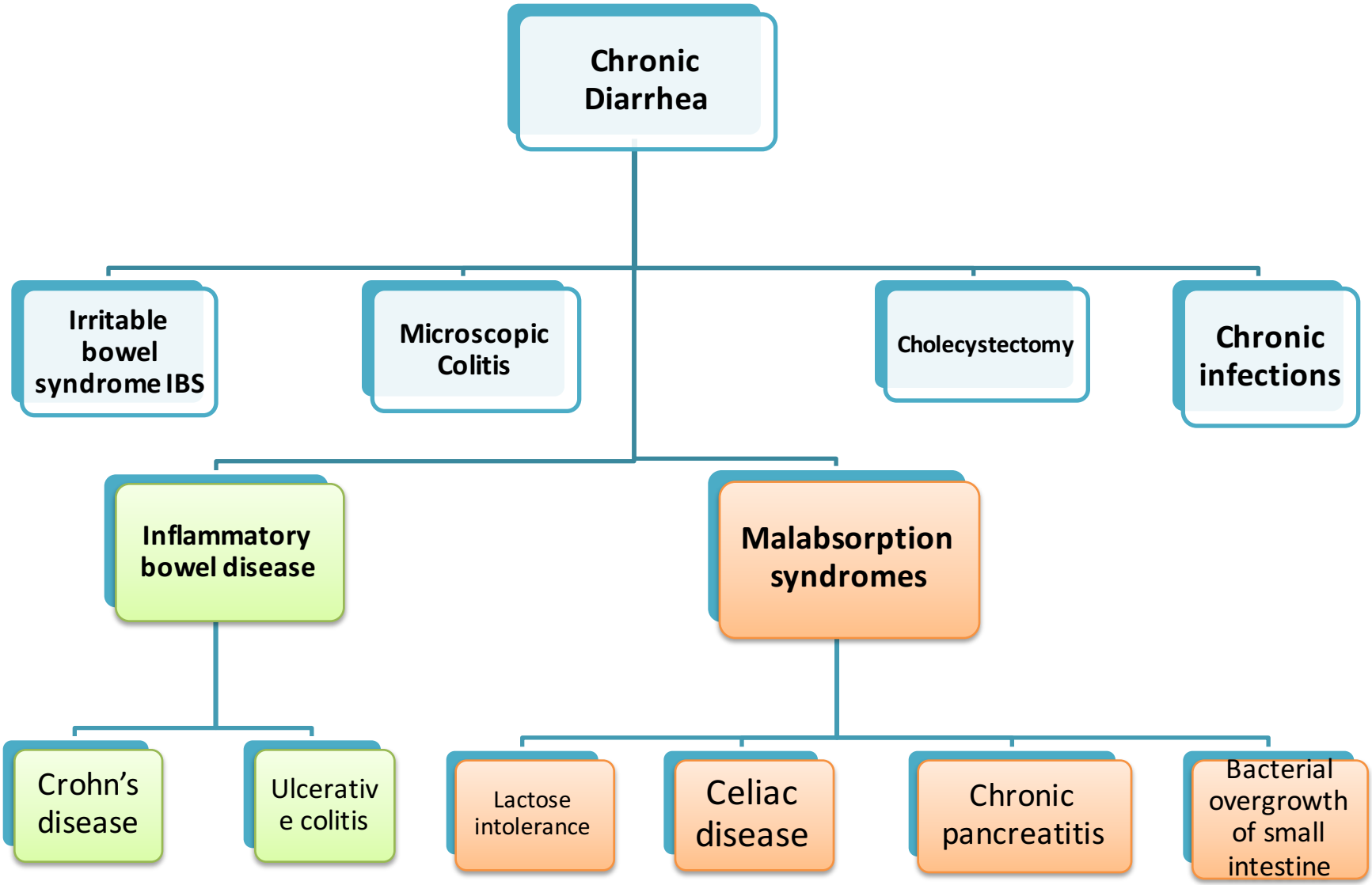
3. Fatty


Steatorrhea
Intraluminal maldigestion
Mucosal malabsorption
Postmucosal lymphatic obstruction

4. Inflammatory

- S&S of inflammation: fever, cramps, bloody diarrhea etc.
- IBD: Crohn’s disease and ulcerative colitis.
- Skin rash & pain!!

Causes & Etiology



Irritable Bowel Syndrome IBS

- Most common cause of chronic diarrhea
- S & S: chronic lower abdominal PAIN + changes in the bowel habits (diarrhea, constipation, or both)
- More in females
- Psychogenic stress
- Dx: Manning and Rome criteria

Manning criteria for the diagnosis of irritable bowel syndrome*

Pain relieved with defecation
More frequent stools at the onset of pain
Looser stools at the onset of pain
Visible abdominal distention
Passage of mucus
Sensation of incomplete evacuation

* The likelihood of irritable bowel syndrome is proportional to the number of Manning criteria that are present.

Rome III diagnostic criteria* for irritable bowel syndrome

Recurrent abdominal pain or discomfort• at least 3 days per month in the last 3 months associated with 2 or more of the following:
(1) Improvement with defecation
(2) Onset associated with a change in frequency of stool
(3) Onset associated with a change in form (appearance) of stool

* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.

• Discomfort means an uncomfortable sensation not described as pain. In pathophysiology research and clinical trials, a pain/discomfort frequency of at least 2 days a week during screening evaluation for subject eligibility.

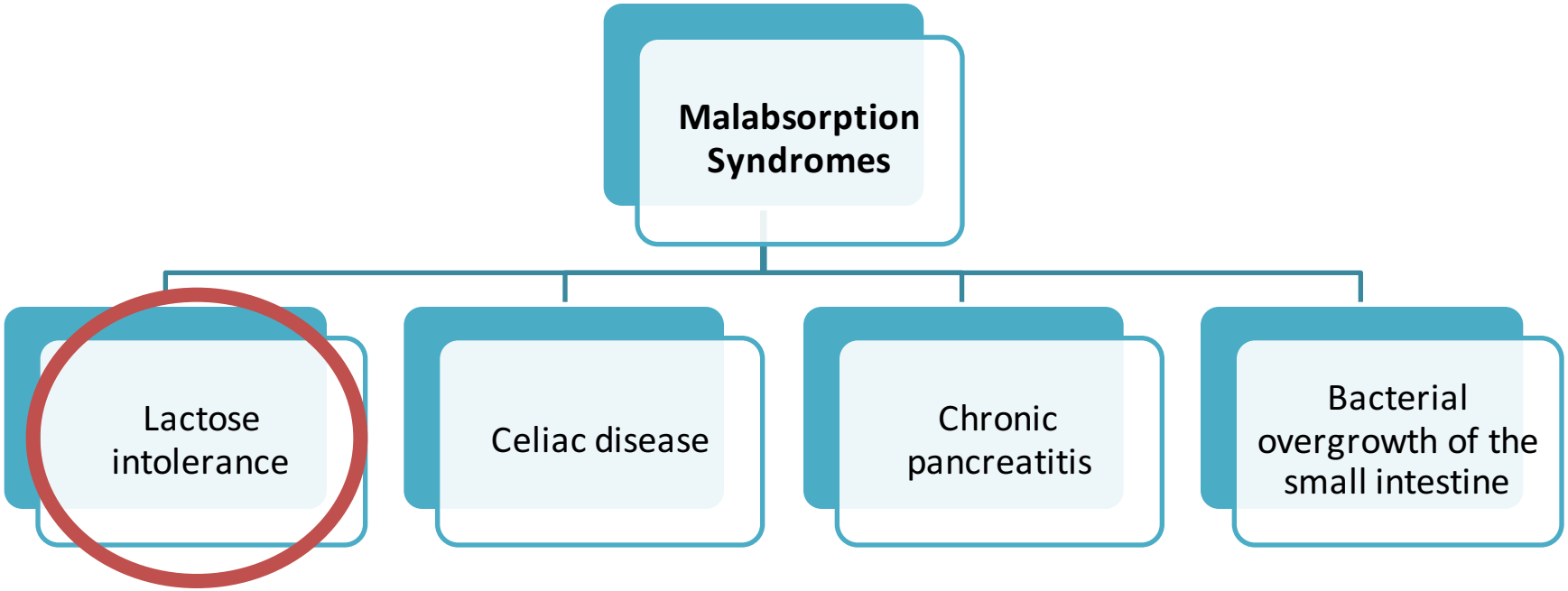
Inflammatory Bowel Disease
IBD

	Ulcerative colitis	Crohn's Disease
Location	Colon mainly, although gastritis is recognized	Entire gastrointestinal tract, although the most common site of inflammation is the transition between the small and large intestine
Disease development	Uniform progression spread from the rectum through the colon	Uneven spread, inflamed intestinal segments between healthy intestinal areas
Potential intestinal symptoms	Bloody diarrhea Abdominal pain Weight loss Ulceration and bleeding	Abdominal pain Weight loss Diarrhea Perforation of the colon Toxic megacolon
Potential extraintestinal symptoms	Liver diseases, anemia, fever, arthritis and skin changes	Fistulas, abscesses, anemia, fever, arthritis and skin changes

Malabsorption Syndromes

- Impaired absorption of nutrients.
- Has two main mechanisms:
  - Primary malabsorption (congenital defects in the membrane transporters)
  - Secondary malabsorption (acquired defects e.g.: celiac and crohn's disease)
- Weight loss despite of adequate food intake.

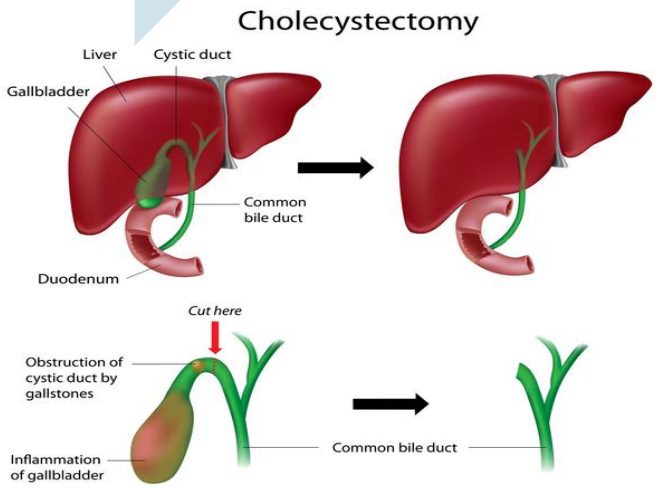
What are common disorders associated with malabsorption syndromes?



Cholecystectomy

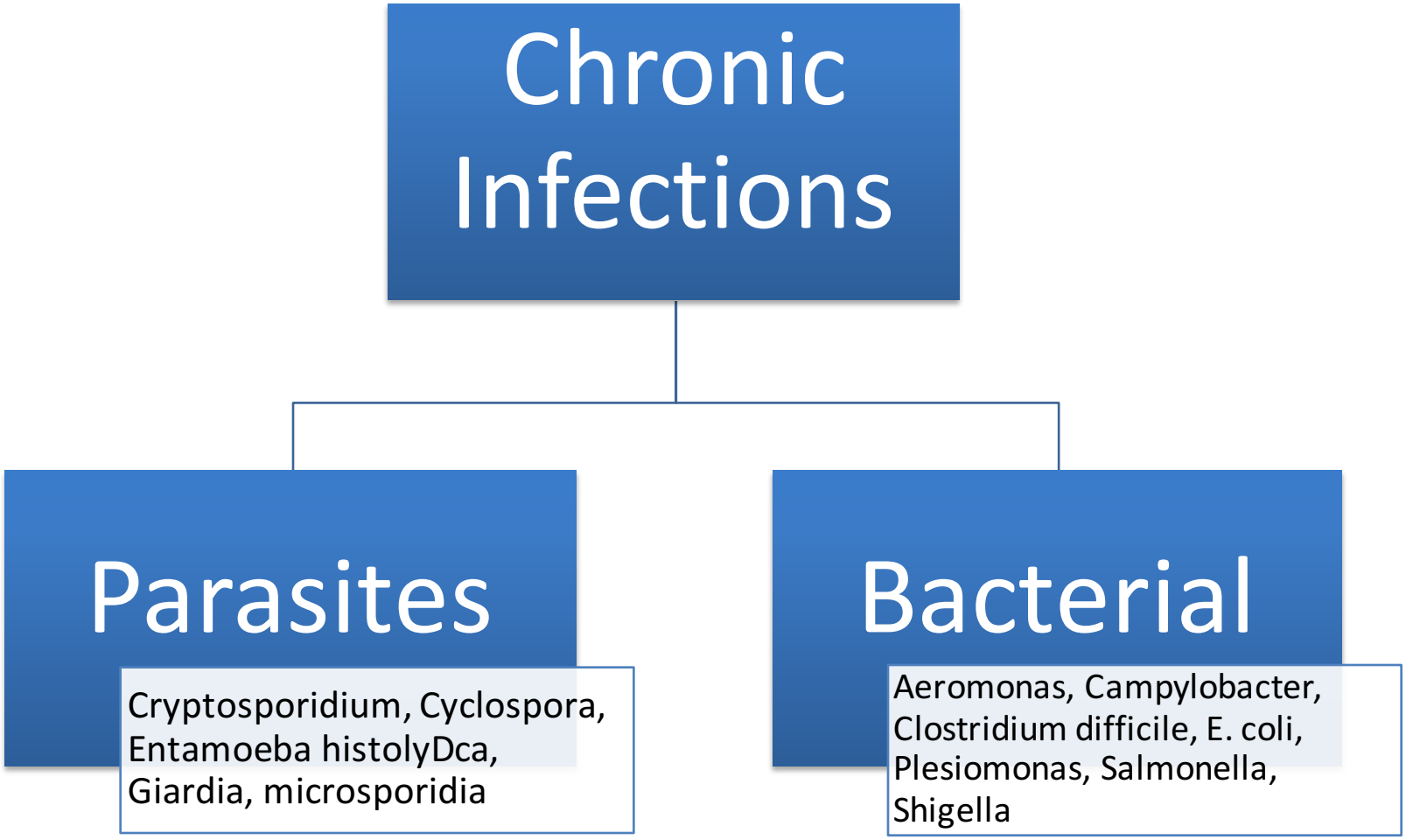
- In the absence of gall bladder:

Bile will drain directly into small intestine → Exceed the terminal ileum absorptive capacity. → Too many bile reaching the colon → Cholerhic diarrhea



Chronic Infections

- Suspect this if the patient has risk factors:
  - HIV infection.
  - Recent travelling .
  - Immunocompromised.
  - **Recent antibiotic use (3 months).**


Chronic Infections
Parasites
Cryptosporidium, Cyclospora, Entamoeba histolyDca, Giardia, microsporidia
Bacterial
Aeromonas, Campylobacter, Clostridium difficile, E. coli, Plesiomonas, Salmonella, Shigella

Diagnosis

- The Hx and P\E
- Minimum tests:
  - CBC: look for leukocytosis.
  - Chemistry: look for electrolytes disturbances.
  - Stool for occult blood.
  - Fecal leukocyte: looking for infections.

Management

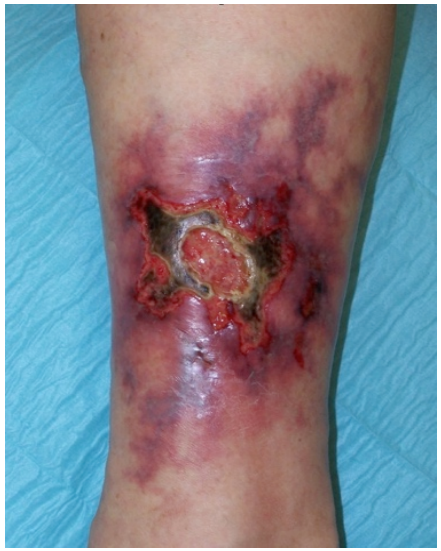
- Treat the underlying cause!
- Symptomatic therapy

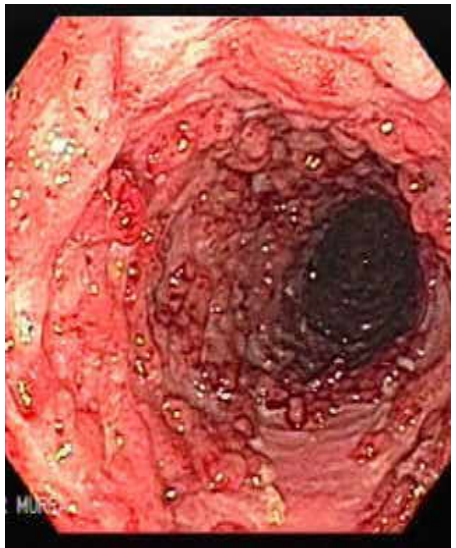
Case Discussions

Cases 1

- 16 y\o male complaining of intermittent lower abdominal pain, and diarrhea 3-4 times per day with blood for the last 3 months. On P\E the ptx has necrotic ulcer on the left leg and mild arthralgia.
- No fever, vomiting, weight loss.
- The ptx is not taking any medications!

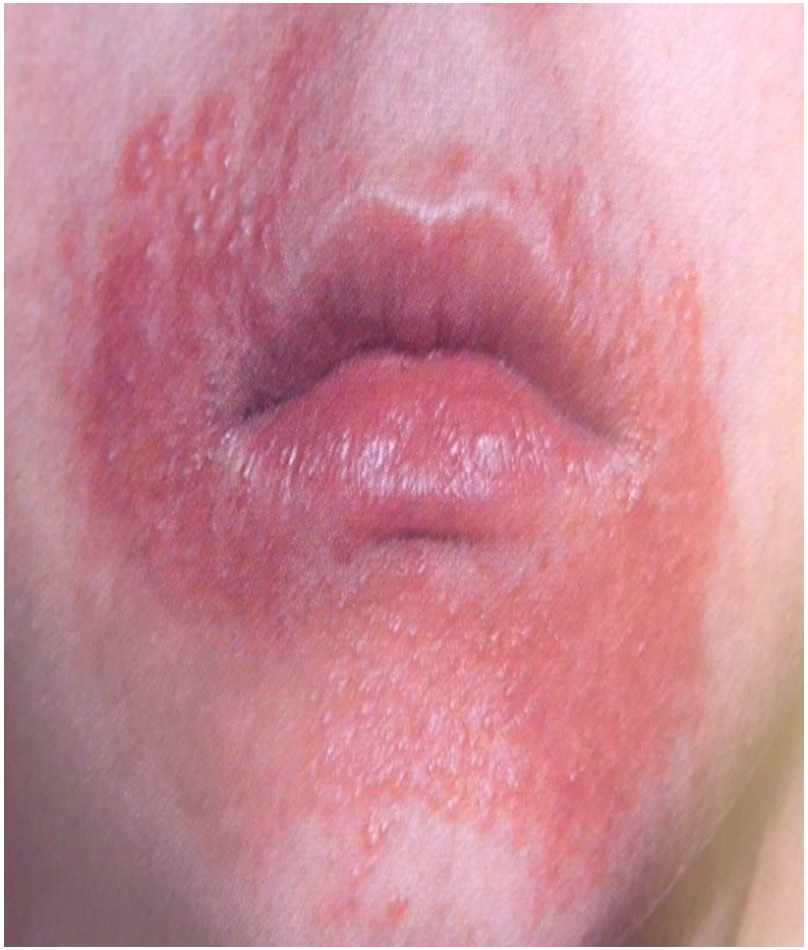
- What do you suspect?
  - IBD: ulcerative colitis
- Investigations?
  - Stool culture: -ive .
  - Colonoscopy and Bx.
  - What are histopathological finding:
    - Destruction of the crypts.
    - Only mucosa is involved.
    - Decrease in # of goblet cells.

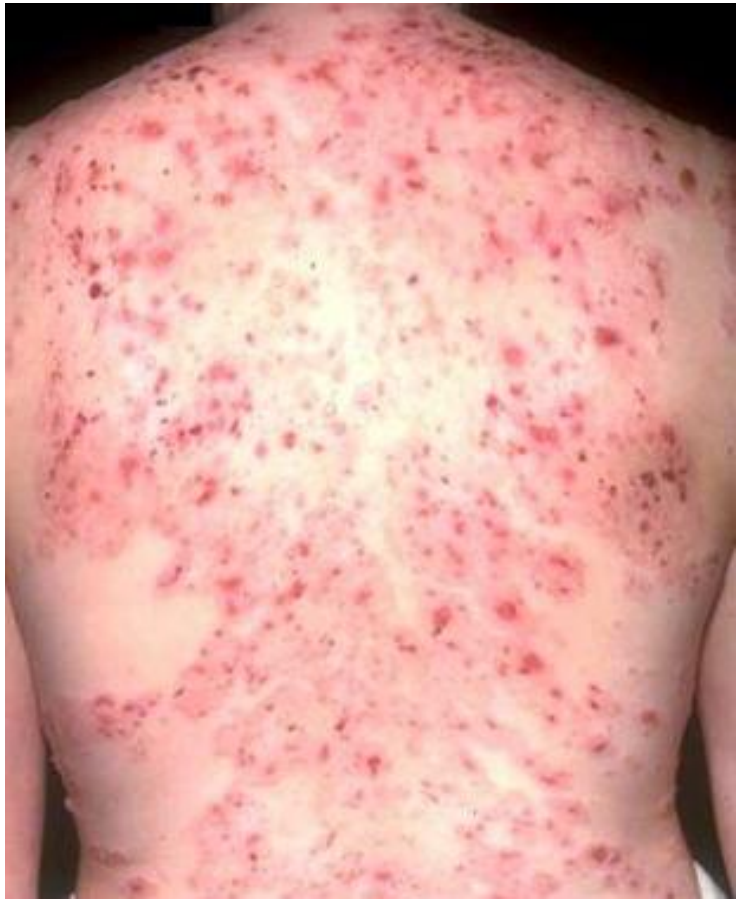




Case 2

- 17 y\o female presented with 3 years Hx of iron deficiency anemia. Ptx denied Hx of upper GI bleeding.
- Hx of frequent smelly diarrhea that is difficult to flush.
- Hx of 5 Kg weight loss in the past 3 months.
- On P\E there is an extremely itchy blisters on the back, face, and around the mouth.





- What is the most likely underlying cause?
  - Malabsorption (celiac disease).
- How do you screen for it?
  - tTG-IgA test
- How to confirm your Dx?
  - Endoscopy with Bx:
    - Loss of villi
    - Expansion of lamina propria
    - Crypt hyperplasia
- Management?

Case 3

- 14 y\o female previously healthy with acute onset of vomiting, abdominal cramps, and non-bloody diarrhea after coming from a family picnic yesterday.
- 8 bowel movements in the last 24 hours.

- What type of diarrhea this is?
  - Acute non-inflammatory diarrhea.
- What is the most probable organism?
  - S.aureus
- Same case, but the ptx is coming back from Mexico?
  - ETEC

References:

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- Kumar & Clark's Medicine.
- Personal lecture notes.

For any questions or comments please contact us at:

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