



## HIGH-YIELD MED REVIEWS

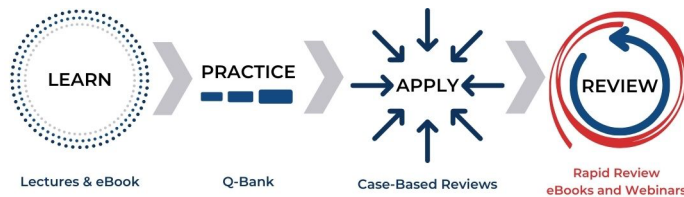
# 2022 LIVE NAPLEX RAPID REVIEW COURSE

### SCHEDULE

- May 8, 2022; Live, free to the public ~1 hr
- 3 Other Live Sessions - Covering ~ 12 hrs of content
- Mondays from 10 am – 2 pm CT; May 9, 16, & 23
- Topics: Cardiology, Infectious Diseases, Neurology & Psychiatry, Hematology / Oncology , Pharmacogenetics, Immunology, Pulmonary, Toxicology, Top 300 Drug content, EBM, Biostatistics, & Literature Evaluation, etc

### THE HIGH-YIELD APPROACH

Integrated Knowledge Transfer for Success



### 5-ASA DERIVATIVES

- **CLASSIC AGENTS:**
  - Balsalazide, mesalamine, olsalazine
- **INDICATIONS:**
  - Crohn’s Disease, Ulcerative Colitis
  - \_\_\_\_\_ cases
- **MECHANISM:**
  - Intestinal mucosal inflammation by reducing the release of pro-inflammatory mediators.
- **SIDE EFFECTS:**
  - GI side effects
  - \_\_\_\_\_ → Infertility due to reversible reduced sperm production
- **CLINICAL PEARLS:**
  - Crohn’s needs HIGHER doses & LESS effective vs. UC.
  - Why?
    - ✓ \_\_\_\_\_
  - Why so many dosage formulations?
    - ✓ \_\_\_\_\_

### ANTISECRETORY AGENTS

- **CLASSIC AGENTS:**
  - Bismuth subsalicylate (Pepto-Bismol)
- **INDICATIONS:**
  - Diarrhea (including Traveler’s diarrhea)

- Dyspepsia
- Helicobacter pylori eradication
- **MECHANISM:**
  - Bismuth increases bicarbonate (thus increasing pH) → stimulates PG & mucus production.
- **CLINICAL PEARLS:**
  - Bismuth compounds cause a darkening of stools, including blackening of the stool.
  - What can this be confused with?
    - ✓ \_\_\_\_\_
  - The reversible “\_\_\_\_\_”

## H2 RECEPTOR ANTAGONISTS

- **CLASSIC AGENTS:**
  - Cimetidine, famotidine, nizatidine
- **INDICATIONS:**
  - Dyspepsia, GERD, H. pylori, & PUD
- **MECHANISM:**
  - Competitive inhibition of the parietal cell histamine-2 receptor → prevents gastric acid secretion
- **CLINICAL PEARLS:**
  - Available OTC. Is this a problem?
    - ✓ \_\_\_\_\_
    - ✓ *No need to* \_\_\_\_\_ with you or their provider
  - Can develop → \_\_\_\_\_
    - ✓ Many patients will experience \_\_\_\_\_
    - ✓ Dose NOT occur with \_\_\_\_\_
  - All require \_\_\_\_\_ adjustments
- Elderly patients (> 65 years) also have a decrease in H2RA drug clearance by as much as 50%.

## HIGH-YIELD EBM & BIostatISTICS INTEGRATION

- What does a p-value NOT tell you?
- 

## PROTON PUMP INHIBITORS

- **CLASSIC AGENTS:**
  - Dexamprazole, esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole
- **INDICATIONS:**
  - Acute GI Bleed & PUD
  - Erosive esophagitis & GERD
  - H. pylori eradication
  - Zollinger-Ellison syndrome

- **MECHANISM:**
  - \_\_\_\_\_ of the H/K-ATPase (aka proton pump)
- **SIDE EFFECTS:**
  - Infections (pneumonia, SBP, C. difficile)
  - Vit B12 deficiency → Why?
  - ✓ \_\_\_\_\_
- **CLINICAL PEARLS:**
  - No development of tolerance like with H2RA
  - Best at achieving gastric pH > \_\_\_\_\_ for a longer duration
  - Why does that matter?
  - ✓ \_\_\_\_\_
  - All PPIs can degrade in acidic environments. Why does that matter:
    - ✓ Necessitates formulation in \_\_\_\_\_
  - Counsel → not to \_\_\_\_\_.
  - Pantoprazole may be less likely to interfere with clopidogrel activation and overall activity, whereas lansoprazole and omeprazole are more likely to inhibit the functional activation of clopidogrel.

**HIGH-YIELD CLINICAL INTEGRATION**

- What are the 2 recommended treatment regimens for H. pylori?

\_\_\_\_\_ for \_\_\_\_\_ days

**HIGH-YIELD DRUG INTERACTIONS**

- What drugs require acidic environment for adequate absorption?

\_\_\_\_\_

**ANTIMOTILITY AGENTS**

- **CLASSIC AGENTS:**
  - Diphenoxylate-atropine & difenoxin-atropine
  - Loperamide
  - Opium tincture
- **INDICATIONS:**
  - Diarrhea
- **MECHANISM:**
  - \_\_\_\_\_ receptor agonists decreasing GI motility and secretion.
- **SIDE EFFECTS:**
  - Constipation, GI obstruction

- **CLINICAL PEARLS:**
  - Difenoxin is the active metabolite of \_\_\_\_\_
  - Why are diphenoxylate and difenoxin are co-formulated with atropine?
- ✓ \_\_\_\_\_
- Avoid in ulcerative colitis with toxic megacolon → risk of bowel perforation.

## DOPAMINE ANTAGONIST ANTIEMETICS

- **CLASSIC AGENTS:**
  - Droperidol
  - Haloperidol
  - Metoclopramide
  - Prochlorperazine
  - Promethazine
- **INDICATIONS:**
  - Nausea and/or vomiting
  - Other: \_\_\_\_\_
  - Metoclopramide → \_\_\_\_\_
- **MECHANISM:**
  - Block dopamine receptors in the (CTZ)
- **SIDE EFFECTS:**
  - Akathisia → mainly with \_\_\_\_\_
  - QT prolongation → esp., \_\_\_\_\_ & \_\_\_\_\_
  - Dystonia & pseudoparkinsonism
- **CLINICAL PEARLS:**
  - Why the Parkinson's like features?
- ✓ \_\_\_\_\_

## LAXATIVES

- **CLASSIC AGENTS:**
  - Bisacodyl, lactulose, magnesium salts, polyethylene glycol, senna
- **INDICATIONS:**
  - Constipation
- **MECHANISM:**
  - Osmolar laxatives (lactulose, polyethylene glycol, sorbitol)
  - Saline cathartics (magnesium salts)
  - Stimulant laxatives (bisacodyl, senna)
- **SIDE EFFECTS:**
  - Flatulence, diarrhea
- **CLINICAL PEARLS:**



- Stool softeners (e.g., docusate) alone are not sufficient for preventing \_\_\_\_\_
- Avoid in patients with UC + \_\_\_\_\_
- Other contraindications include = \_\_\_\_\_
- Lactulose is also used for \_\_\_\_\_ and works by:
  - ✓ Forms acids in GI tract to trap NH<sub>3</sub> → NH<sub>4</sub><sup>+</sup>

### SELECTIVE SEROTONIN ANTAGONISTS (5-HT<sub>3</sub>-RA)

- **CLASSIC AGENTS:**
  - Alosetron, dolasetron, granisetron, ondansetron, palonosetron
- **INDICATIONS:**
  - Nausea/vomiting
  - Chemotherapy-induced nausea and vomiting prophylaxis
  - Postoperative nausea and vomiting
  - Women with diarrhea-predominant – IBS (\_\_\_\_\_)
- **MECHANISM:**
  - Selective inhibition of 5-HT<sub>3</sub> both centrally in the CTZ and peripherally in the GI tract.
- **SIDE EFFECTS:**
  - Dose-dependent \_\_\_\_\_
- **CLINICAL PEARLS:**
  - \_\_\_\_\_ is only approved for women with severe diarrhea-predominant IBS. It was briefly withdrawn from the US market due to the high incidence of \_\_\_\_\_, leading to surgery and even death.
  - Reapproved for diarrhea-predominant IBS under a limited distribution system.

### SUBSTANCE P/ NEUROKININ 1 (NK-1) RECEPTOR ANTAGONISTS

- **CLASSIC AGENTS:**
  - Aprepitant
  - Fosaprepitant (± palonosetron)
  - Netupitant (± palonosetron)
  - Rolapitant
- **INDICATIONS:**
  - CINV (chemotherapy-induced N/V)
  - PONV (Postoperative N/V)
- **MECHANISM:**
  - Selectively inhibit substance P/NK-1 receptors distributed peripherally and centrally to inhibit substance P-mediated responses.
- **SIDE EFFECTS:**
  - Fatigue, neutropenia, hypotension, bradycardia, headache, constipation
- **CLINICAL PEARLS:**



- All are single-dose regimens administered on day 1 of chemotherapy only, except for \_\_\_\_\_ which can be utilized as a \_\_\_\_\_ day regimen.

### TRAVELER'S DIARRHEA

- **PATHO:**
  - Fecal-oral transmission of infection from contaminated food or water.
- **CLASSIC PRESENTATION:**
  - Recent travel to new area + abdominal cramps, N/V, fever, fecal urgency, or tenesmus.
- **CLASSIC FINDINGS:**
  - Increased frequency of defecation with at least 3 bowel movements per day
- **TREATMENT:**
  - Oral rehydration, BRAT diet
  - \_\_\_\_\_ 1 g as single dose ...(or)... 500 mg/d x 3d
  - \_\_\_\_\_ x 3 days
  - Limit use of antidiarrheal agents (e.g., loperamide or Bismuth) to intermittent use to avoid "potential" retention of infectious agent

### CIRRHOSIS - ASCITES

- **PATHO:**
  - Increase portal pressures leading to intravascular leaking into the peritoneal cavity.
- **CLASSIC PRESENTATION:**
  - Abdominal distension +/- pain, positive fluid wave.
- **CLASSIC FINDINGS:**
  - SAAG > \_\_\_\_\_ g/dL with normal PMN count < \_\_\_\_\_
- **TREATMENT:**
  - Salt & water restriction +/- therapeutic paracentesis
  - High-dose spironolactone:furosemide (at a ratio of \_\_\_\_\_)

### ESOPHAGEAL VARICES

- **PATHO:**
  - Dilated submucosal esophageal veins between the portal and systemic circulation and are caused by hepatic venous pressure gradients greater than 10 mmHg due to portal hypertension.
- **CLASSIC PRESENTATION:**
  - Coffee-ground hematemesis, dark tarry stools, dyspepsia, epigastric pain, hypotension, tachycardia, melena, syncope.
- **CLASSIC FINDINGS:**
  - Endoscopic visualization of varices; BUN:Cr of > \_\_\_\_\_
- **TREATMENT:**
  - Acute Management:
  - Endoscopic interventions (banding or sclerotherapy)
  - PPI



- Octreotide
- \_\_\_\_\_ (to prevent risk of SBP)
- Chronic Management:
  - ✓ Can consider \_\_\_\_\_

### HEPATIC ENCEPHALOPATHY

- **PATHO:**
  - Accumulation of nitrogenous substances (NH<sub>3</sub>) due to decreased hepatic function causing CNS depression and confusion.
- **CLASSIC PRESENTATION:**
  - Presents on a spectrum from stage 1 to 4 with varying changes in mental status.
- **CLASSIC FINDINGS:**
  - New mental status changes +/- elevated ammonia levels.
- **TREATMENT:**
  - Treat underlying problem especially infection (e.g., SBP or GI Bleed).
  - Lactulose (titrated to 2-3 loose stools per day); +/- rifaximin
  - \_\_\_\_\_ if presenting with AMS

### SPONTANEOUS BACTERIAL PERITONITIS

- **PATHO:**
  - Acute ascitic fluid infection attributed to the translocation of gram-negative bacilli from the GI.
- **CLASSIC PRESENTATION:**
  - Diffuse abdominal pain, altered mental status, fever, and chills.
- **CLASSIC FINDINGS:**
  - SAAG > 1.1 g/dL
  - Ascitic fluid ANC or PMN > 250
- **TREATMENT:**
  - Acute:
    - ✓ \_\_\_\_\_ or \_\_\_\_\_ + \_\_\_\_\_ at a dose of 1.5 g/kg within 6 hrs of diagnosis, then repeat on Day 3 at 1 mg/kg.
  - Prophylaxis Therapy (debated):
    - ✓ Cipro or norfloxacin.

### PANCREATITIS

- **PATHO:**
  - Acute → Pancreatic duct and acinar injury, resulting in auto-digestion and inflammation (seen with TG > 500 and especially >1000; alcohol abuse)
  - Chronic → Repetitive acute pancreatitis causing chronic inflammation and fibrosis leading to poor absorption
- **CLASSIC PRESENTATION:**
  - Persistent right upper quadrant or epigastric pain, nausea/vomiting, abdominal distension, Cullen sign, and/or Turner sign.
- **CLASSIC FINDINGS:**
  - Must have two of the following criteria:
  - LUQ Abdominal pain and lipase three times the ULN



- **TREATMENT:**
  - Acute:
    - NPO diet, IV fluids (Crystalloids), parenteral \_\_\_\_\_, parenteral or rectal \_\_\_\_\_, +/- surgical interventions (e.g., ERCP if related to biliary problem such as gallstones).
  - Chronic:
    - Pancrelipase by mouth with meals, gastric acid reduction (H2RA or PPI), and vitamin supplementation (A, D, E, K).

## CROHN'S DISEASE

- **PATHO:**
  - One of two most common inflammatory bowel diseases (IBD)
  - Transmural inflammation that may occur anywhere from the \_\_\_\_\_ but most commonly affects the terminal ileum and right colon.
- **CLASSIC PRESENTATION:**
  - Abdominal pain, bloating, diarrhea (usually non-bloody), obstruction, & fistula formation
- **CLASSIC FINDINGS:**
  - Ileocolonoscopy findings of cobblestoning mucosa and aphthous or linear ulcers.
- **TREATMENT:**
  - Mild to Moderate Disease → Aminosalicylates (5-ASA), antidiarrheals, steroids, antibiotics (especially if a \_\_\_\_\_ is present), DMARDs, bDMARDs.
  - Moderate to Severe/Recurrent → bowel resection + meds

## ULCERATIVE COLITIS

- **PATHO:**
  - One of two most common inflammatory bowel diseases (IBD)
  - Inflammatory process of the colon resulting in ulceration of the intestinal mucosa.
- **CLASSIC PRESENTATION:**
  - Bloody diarrhea, abdominal pain, bloating, diarrhea, flatulence, fever, malabsorption, weight loss.
- **CLASSIC FINDINGS:**
  - Inflammation of the rectum and extension proximally.
- **TREATMENT:**
  - Chronic & Mild to Mod Disease: Aminosalicylates (5-ASA agents).
  - Acute Flares or Severe Disease: DMARDs and TNF alpha inhibitors +/- corticosteroids.
  - Caution with \_\_\_\_\_ or \_\_\_\_\_ agents in acute flares due to risk of toxic megacolon.
  - Colectomy with colostomy then revert back to j-pouch

## HIGH-YIELD CLINICAL INTEGRATION

- Who should NOT get a TNF-alpha antagonist?
  - ✓ \_\_\_\_\_
  - ✓ \_\_\_\_\_