

**In the name of God**

# **Rational Use of Antibiotics in Gastrointestinal Infections**

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# Introduction

- Disadvantages of antibiotic administration
- Differentiation of bacterial and non-bacterial infections
- Determining the indication of antibiotic administration
- Selecting the right antibiotics

# Helicobacter pylori

- **Clinical manifestation:** Often asymptomatic, Chronic gastritis, Gastroduodenal inflammation, Iron deficiency anemia, Chronic ITP
- **Diagnosis:** Culture of biopsy, Stool Ag, Urea breath test
- **Treatment:**
  - ✓ PUD, Lymphoma, Gastric cancer, Refractory iron deficiency anemia, Chronic ITP
  - ✓ Amoxicillin + Clarithromycin + PPI / Amoxicillin + Metronidazole + PPI



# Intestinal Infections

- Viral, Bacterial, Parasites
- **First step:** History, Ph/Ex
- **Diarrheal Characteristics:**
  - ✓ Watery, Low frequency, High volume, With/without vomiting and fever
  - ✓ Dysentery, Fever, Abdominal cramp, Tenesmus, High frequency, Low volume
- **Diarrheal Episodes:** Acute, prolonged, Persistent, Chronic

# Vibrio Cholera

- **Clinical manifestation:** Voluminous watery diarrhea, Rice water appearance, Hypovolemic shock, Vomiting
- **Diagnosis:** Culture from fecal or vomitus in the TCBSA
- **Treatment:**
  - ✓ Rehydration (ringer lactate)
  - ✓ Doxycycline 4.4 mg/kg, Azithromycin 20 mg/kg, Ciprofloxacin 20 mg/kg - single dose



# Shigella

- **Clinical manifestation:** Mild watery diarrhea, High fever, Abdominal cramp, Dysentery seizure, Septicemia
- **Diagnosis:** Culture from stool or rectal swap, B/C
- **Treatment:**
  - ✓ Ciprofloxacin 20 mg/kg/day, Azithromycin 12 mg/kg then 6 mg/kg, Ceftriaxone, Cefixime
  - ✓ Pivemecillinam, Fosfomycin – Colistin, Carbapenem



# Salmonella

- **Clinical manifestation:** **NTS** diarrhea, fever, Abdominal cramp, **Typhi** fever, Abdominal pain, HSM, Rose spot, constitutional symptoms
- **Diagnosis:** Stool Culture
- **Treatment:**
  - ✓ NTS doesn't need antibiotics except for some groups, Ceftriaxone, alternative Fluoroquinolone
  - ✓ Enteric fever third-generation Cephalosporine, Azithromycin 7-10 days



# Campylobacter

- **Clinical manifestation:** Watery diarrhea, Fever, Abdominal pain mimic appendicitis or intussusception, Dysentery
- **Diagnosis:** S/C
- **Treatment:**
  - ✓ Most patients don't need antibiotics
  - ✓ Azithromycin 10 mg/kg/day 3 days, Erythromycin 10 mg/kg/dose 5 days QID





# Yersinia

- **Clinical manifestation:** Diarrhea with mucus and blood, Fever, Abdominal pain pseudo-appendicitis
- **Diagnosis:** S/C in McConkey
- **Treatment:**
  - ✓ Neonates, I.D, Septicemia, Extraintestinal disease third-generation Cephalosporine



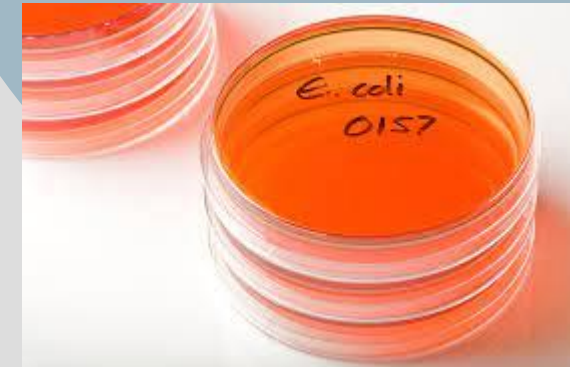
# Staph Aureus, Bacillus Cereous

- **Clinical manifestation:** Vomiting, Abdominal pain, Maybe watery diarrhea
- **Diagnosis:** Culture of stool or vomiting,  $10^5$  colonies in food
- **Treatment:**
  - ✓ Rehydration



# E.coli

- **5 Prototypes:** STEC, EPEC, ETEC, EIEC, EAEC
- **Clinical manifestation:** Dysentery, Severe abdominal pain, Hemorrhagic colitis, HUS, Watery diarrhea
- **Diagnosis:** S/C
- **Treatment:**
  - ✓ EIEC Azithromycin Fluoroquinolone



# Clostridium Defficile

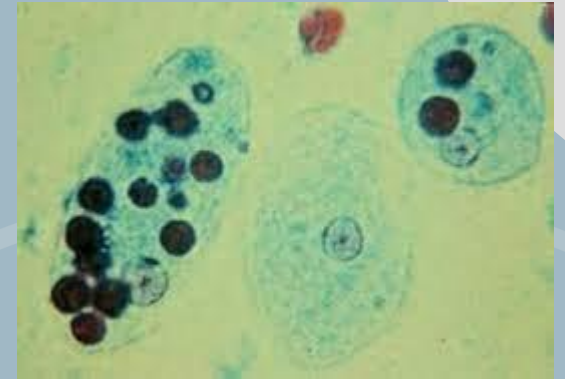
- **Clinical manifestation:** Asymptomatic colonization, Watery diarrhea, Low fever, Abdominal pain, Pseudo membrane colitis, Toxic megacolon
- **Diagnosis:** Colonoscopy, Toxin or toxin gene in stool – After 12 months
- **Treatment:**
  - ✓ Discontinue antibiotics
  - ✓ Oral metronidazole 30 mg/kg/day or IV, Oral vancomycin 40 mg/kg/day



# Parasites

- **Include:** Protozoa, Helminth
- **Clinical manifestation:** Watery diarrhea, Dysentery, Abdominal pain, Vomiting, Malnutrition, Iron deficiency anemia, Perianal itch, Intestinal obstruction

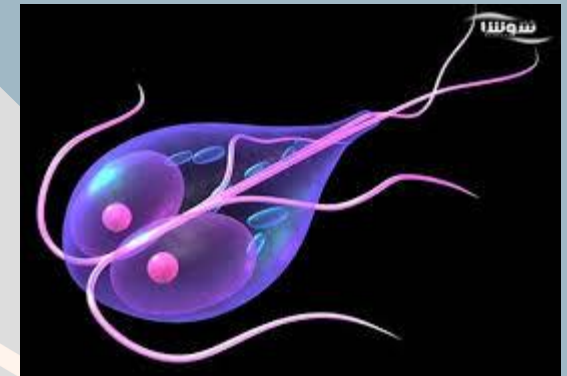
# Amebiasis



- **4 morphologies:** *E histolytica*, *E dispar*, *E coli*, *E moshkovski*
- **Clinical manifestation:** Watery or bloody diarrhea, Abdominal pain, Weight loss, Liver abscess
- **Diagnosis:** S/E cyst or troph, PCR, Serology
- **Treatment:** All patients need
  - ✓ Iodoquinol 10 mg/kg/dose TDS 20 days, Paromomycin 10 mg/kg/dose TDS 7 days
  - ✓ Metronidazole 40 mg/kg/day TDS 7-10 days, Tinidazole 50 mg/kg/day 3 days

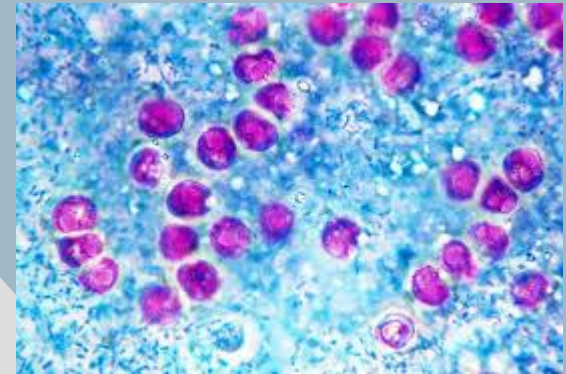
# Giardiasis

- **Clinical manifestation:** Asymptomatic carrier, Fulminant Diarrhea, Abdominal cramp, Bloating, Foul-smell stool, Bleaching
- **Diagnosis:** 3 S/E cyst or troph, DFA Gold St, Rarely duodenal aspiration
- **Treatment:**
  - ✓ Metronidazole 5-7 days, Tinidazole single dose



# Cryptosporidium

- **Clinical manifestation:** Watery diarrhea, Fever, Abdominal pain, Vomiting
- **Diagnosis:** S/E ova and parasite, DFA oocyte
- **Treatment:**
  - ✓ Normal people no treatment or nitazoxanide 3 days
  - ✓ I.D person 14 days





# Ascaris

- **Clinical manifestation:** Almost asymptomatic, Loffler syn. (fever, cough, transient pneumonitis), Intestinal obstruction
- **Diagnosis:** S/E egg, Adult worm with Sono or stool and vomitus
- **Treatment:**
  - ✓ Albendazole single dose, Mebendazole 3 days, Pyrantel pamoate
  - ✓ S/E 2 weeks and 2 months later



# Pinworm

- **Clinical manifestation:** Perianal and vulvae itch, Sleep disturbance, Grinding teeth at night, Weight loss, Enuresis
- **Diagnosis:** Scotch tape test
- **Treatment:**
  - ✓ Albendazole, Mebendazole, Pyrantel pamoate - single dose then repeat in 2 weeks
  - ✓ Treatment of the entire household



The background features a light gray base with several abstract shapes: a purple shape on the left, a large light blue shape on the right, and a thin purple outline on the far right. In the top left corner, there is a gray line-art illustration of a leafy branch.

**Thank you**