# 18 GI Infections Part 2

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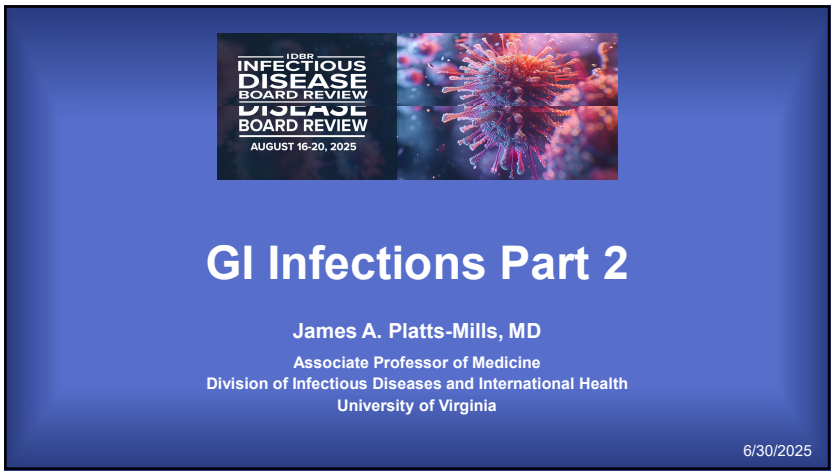


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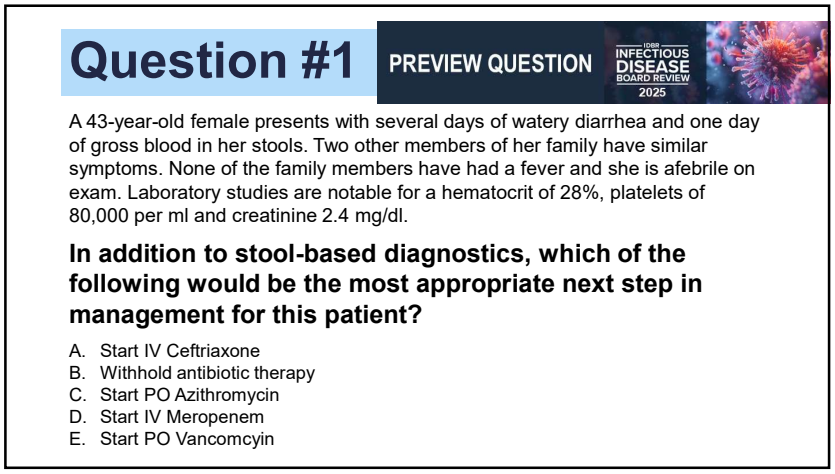


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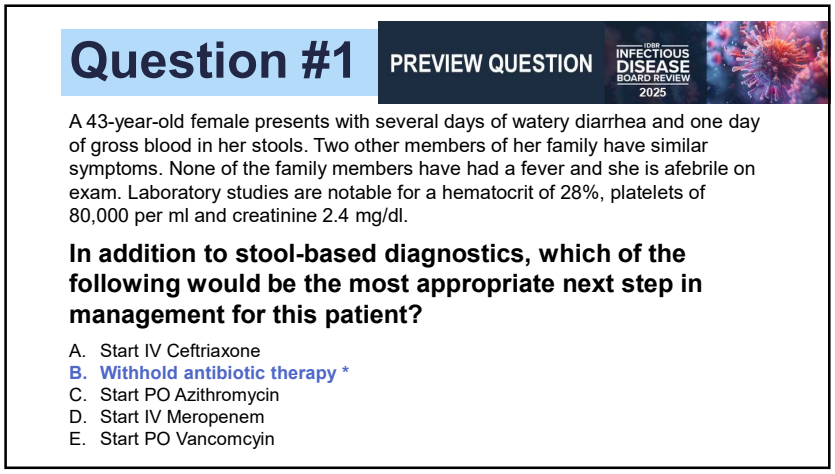


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## 2017 IDSA Guidelines: Antibiotics for Suspected and Confirmed STEC

***Recommendations*:**

1. Empiric treatment of bloody diarrhea should be limited to **young infants**, patients with **fever + blood** with high suspicion for *Shigella*; and patients with **recent international travel + high fever or sepsis**
2. Antimicrobial therapy for confirmed STEC should be **avoided** (STEC O157 / unknown) or is **debatable** (non-O157 STEC)

***Rationale*:** meta-analysis of 17 studies with 1896 patients – pooled OR for HUS with antibiotic use was 1.33 (.89-1.99) in all studies, and in those with a "low-risk of bias" + appropriate definition of HUS, OR 2.24 (1.45-3.46)(Freedman et al, CID 2016)

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## Question #2

A 21-year-old male was admitted to the hospital with fever and abdominal pain. The abdominal pain, which developed over the course of 48 hours, was initially generalized and then localized to the right lower quadrant. He was febrile and had abdominal guarding. His white blood cell count was elevated. Abdominal ultrasound revealed a normal appendix and multiple enlarged mesenteric lymph nodes.

**Which of the following exposures was most likely to be the cause of his illness?**

A. Consumption of undercooked chicken
B. Recent purchase of a pet lizard
C. Consumption of shellfish
D. Consumption of undercooked pork
E. Consumption of unwashed raspberries

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## Common Exposure/Pathogen Associations

| Exposure | Pathogen |
|---|---|
| Water | Cryptosporidium/Giardia |
| Custard | Staph aureus toxin |
| Hamburger | Shiga toxin-producing E. coli (STEC) |
| Leftover meat that is improperly stored and insufficiently reheated | Clostridium perfringens toxin |
| Undercooked chicken/Handling eggs | Campylobacter/Salmonella |
| Produce (esp. raspberries) | Cyclospora |
| Shellfish | Vibrio/norovirus |
| Undercooked pork/pork intestines | Yersinia |
| Turtles/Lizards/Frogs | Salmonella |
| Unpasteurized milk/cheese, deli meats | Listeria |

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## Question #3

An 81-year-old female was admitted to the hospital with vomiting, diarrhea, fever, and headache. She initially developed vomiting, diarrhea, and fever one week prior to presentation. The gastrointestinal symptoms resolved over the course of three days, but the fever continued and was accompanied by a progressive headache and dizziness. Her neurologic exam was notable for ataxia. A stool GI PCR panel was negative. An MRI revealed hyperintense lesions in the cerebellum on T2-weighted imaging. CSF analysis revealed a mild pleocytosis, mildly elevated protein, normal glucose, and a negative Gram stain. CSF and blood cultures are pending.

**What type of organism is most likely to be isolated from CSF and/or blood cultures?**

A. A Gram-positive coccus
B. A Gram-negative coccobacillus
C. A Gram-positive bacillus
D. A Gram-negative bacillus
E. A Gram-negative coccus

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D. A Gram-negative bacillus
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## Listeria Encephalitis: Key Clues and Distinguishing Features

***Exposures*: unpasteurized milk/cheese, deli meats**

***Risk factors for neuroinvasive disease*: extremes of age** (pregnancy is a risk factor for listeriosis and *Listeria* bacteremia, but **not** for encephalitis)

***Clinical manifestations*: Focal neurologic signs** including cranial nerve abnormalities, ataxia, tremors, hemiplegia, deafness

***Lab findings*:** CSF findings are variable but **lymphocytic pleocytosis** is distinctive among non-tuberculous bacterial CNS infections; Gram stain with **short GPRs**

***Imaging findings*:** MRI with abnormal signal intensity or enhancement in the **brainstem**, particularly the pons and medulla, as well as the **cerebellum**

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## Question #4

A 75-year-old male with a history of atherosclerosis presents with persistent fever. Two weeks prior to presentation, he developed watery diarrhea and fever. The diarrhea resolved but the fever persisted and was accompanied by chills, night sweats, and a headache. He denied bone or joint pain. No murmur was present on exam. Multiple sets of blood cultures yielded *Salmonella* typhimurium. Antibiotic therapy was initiated and repeat blood cultures after 48 hours remained positive.

**What is the next best diagnostic test?**

A. Stool GI PCR panel
B. Lumbar puncture
C. CTA Chest
D. MRI Brain
E. Bone marrow biopsy

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## Invasive Salmonella Infections: Key Clues and Distinguishing Features

***General risk factors for invasive disease*:** Extremes of **age**, immunocompromised states including **HIV**

***Most common focal complications (and specific risk factors):*** Endovascular infection (**valvular disease, prosthetic valves/grafts or severe atherosclerosis**), osteomyelitis/septic arthritis (**sick cell disease**)

***Clinical manifestations*:**

***Lab findings*:** Blood culture with GNRs

***Imaging findings for endovascular infection*:** TTE with evidence of endocarditis, CTA/MRA with aneurysm or soft tissue enhancement, PET/WBC scan with focal uptake

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## Question #5

A 35-year-old male presents to the emergency department 30 minutes after eating grilled tuna at a seafood restaurant. He complains of facial flushing, headache, palpitations, and a burning sensation in his mouth. In the emergency room, he begins to have diarrhea. His vital signs are temperature 37.0ºC (98.6ºF), heart rate 108/min, blood pressure 138/84 mm Hg, and respiratory rate 18/min. On physical examination, he is diaphoretic and visibly flushed but in no acute distress. Lung examination is normal. His symptoms improve significantly after administration of antihistamines.

**Which of the following is the most likely cause of this patient's symptoms?**

A. Ciguatera toxin
B. Tetrodotoxin
C. Scombroid poisoning
D. Staphylococcal food poisoning
E. Botulism

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## Most Common Fish Poisoning Syndromes: Key Clues And Distinguishing Features

***Scombroid*: rapid onset** (~10 minutes to one hour) of histamine-related symptoms (**flushing**, **perioral burning**, **rash** on face/chest, **diarrhea**) after consumption of fish (e.g. tuna, mackerel), often with a **peppery** or **spicy** taste

***Ciguatera*:** Constellation of findings starting as early as **3 hours** after consumption of contaminated reef fish (e.g. barracuda, eel), including **gastrointestinal** (vomiting/diarrhea), **neurologic** (peri-oral paresthesias, metallic taste, cold/hot reversal, blurred vision), **cardiovascular** (bradycardia, heart block). Neurologic findings can be persistent (**weeks to months**)

***Paralytic shellfish poisoning*:** Severe syndrome with **rapid onset** (~minutes to hours) of numbness, tingling, vomiting **progressing** to weakness, ataxia, and paralysis (including respiratory failure) after consumption of **shellfish**

***Tetrodotoxin poisoning*: Rapid onset** (~10 minutes to one hour) of perioral paresthesias, nausea/vomiting, muscle weakness, paralysis (including respiratory failure) after consumption of **pufferfish**

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## Thank you!

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