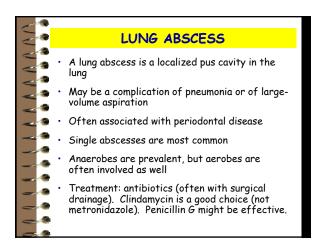
THERAPY OF ANAEROBIC **INFECTIONS**

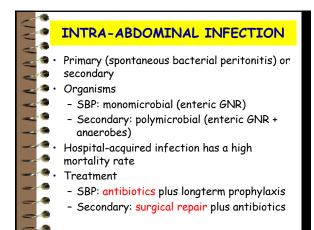
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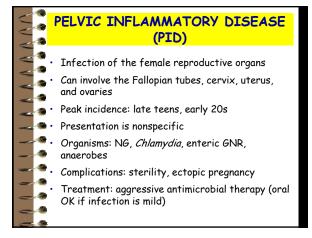
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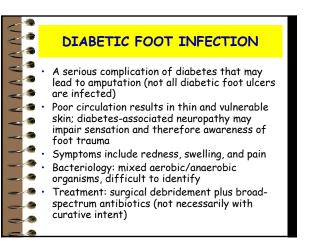
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N	8	BRAIN ABSCESS
AAAA	9 9 9 9 9	Organisms gain access to the brain hematogenously, directly from a contiguous infected site, or after trauma or surgery. The mouth is a common source.
V		Most common symptom: headache
Y	9. 9	Usual organisms: streptococci plus anaerobes
	9 9 :	Dx made by CT or MRI
000	9. 9 9	Treatment: surgical drainage plus prolonged antibiotics. DOC: metronidazole + ceftriaxone.
5	4	









TREATMENT PRINCIPLES

 Anaerobic infections are usually polymicrobial; what needs to be targeted?

• Anaerobic infections have a typical putrid smell which is helpful in identifying them

• Adequate surgical debridement and/or drainage is probably more important than the antibiotic therapy

Abscess formation is a routine feature of anaerobic infections, and drug penetration into the abscess must be considered

THE EVIL ABSCESS Why is the abscess environment hostile to so many antibiotics?

- Low pH, low redox potential
- Inoculum effect
- Dead bacteria and debris may inactivate drugs
- ß lactamase is often plentiful
- What antibiotics penetrate abscesses well?
- Clindamycin
- Metronidazole
- Chloramphenicol (generally avoided)
- NOT B-LACTAMS!!!

Since drug penetration into abscesses is so poor, we use aggressive dosing (adjusted for renal or hepatic dysfunction) for anaerobic infections



CASE 1. A 19-year-old female presents to the ER with severe right lower quadrant (RLQ) pain, fever to 38.7° C, rebound tenderness, and guarding. Her WBC is 21,000 with 80% neutrophils. The patient's pain initially began in the periumbilical region.

Dx: Perforated appendicitis, communityacquired

DEFINITIONS
 RLQ pain suggests appendix; LUQ suggests pancreas, RUQ suggests liver or gall bladder
 Rebound tenderness: pain felt when pressure applied to the abdomen is suddenly released
 Guarding: abdominal wall muscle spasm (voluntary or involuntary) that acts to protect inflamed abdominal viscera from pressure

CASE 1: BUGS AND DRUGS Most likely pathogens Enteric Gram-negative bacilli Bowel anaerobes Patient will require surgery Drugs of choice Ampicillin/sulbactam (Unasyn) Piperacillin/tazobactam (using the non-Pseudomonas dose) Ertapenem Is cephalosporin monotherapy an option?



CASE 2. A 63-year-old female with metastatic ovarian cancer receiving radiation and chemotherapy develops fever, chills, and decreased alertness. She has had left lower quadrant pain for the past 24 hours. The patient is penicillin-allergic by history.

Dx: Diverticulitis, possibly ruptured



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DEFINITIONS

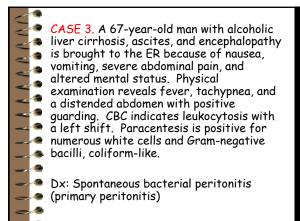
A diverticulum is a pouch formed by protrusion (herniation) of the mucosa of the intestine through the muscular layers of the bowel wall. Diverticula can be clogged with fecal or other material and become infected (this is diverticulitis).

They can also rupture, resulting in secondary peritonitis.

CASE 2: BUGS AND DRUGS

Possible pathogens

- Enteric Gram-negative bacilli, including the more resistant genera
- Pseudomonas aeruginosa
- Bowel anaerobes
- Enterococcus
- Possible treatments (how does the allergy figure in?)
- Imipenem/cilastatin or meropenem
- High-dose piperacillin/tazobactam
- Aztreonam/clindamycin/vancomycin



S	CASE 3: BUGS AND DRUGS
	 Most likely pathogens (just one!) Enteric Gram-negative bacilli, most likely E. coli Anaerobes should not be an issue No surgery!
	 Drug of choice Ceftriaxone Cefotaxime Levofloxacin in allergic patients
	 Prevention of future episodes Weekly ciprofloxacin

CASE 4. A 60-year-old male with poorly controlled diabetes is admitted with high fever and elevated WBC. His admission blood glucose is 530 (normal BG is 60-110). The patient's right foot is hot, swollen, and foul-smelling, and a sore under the 5th metatarsal joint is draining pus. Dx: Diabetic foot infection

