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Email questions or concerns to IntermountainProjectECHO@imail.org
Overview

- Review commonly encountered cases for pediatric infectious diseases
- Interactive case discussion
- Evidence-based approach to management
Accessing Pediatric Guidelines

On an Intermountain computer, type in “abx/” in the search bar

Select “Inpatient Guidelines & Education” on the left-hand side

Pediatric guidelines are under “Care Process Models and Algorithms” under “Pediatric”
Case #1

A 11 y/o female weighing 52.3 kg is admitted with 1-2 days of a productive cough and shortness of breath with off and on fevers. Her PMH is significant for asthma.

- Labs: WBC 18.8
- Vitals: Temp 37.5°C, HR 139, RR 16, SpO2 91%, BP 120/75
- Imaging: CXR – mild right patches of airspace disease and right more than left peribronchial cuffing, concern for bronchiolitis and pneumonia
- Testing: Respiratory film array positive for rhinovirus
- Cultures: blood cultures no growth to date
- Allergies: NKDA
Case #1

The patient is diagnosed with CAP and started on 2 L/min nasal cannula. Patient is tolerating a normal diet. What would be the best empiric antibiotic choice for her?

A. Ceftriaxone 2 g IV q24h + azithromycin 500 mg PO q24h
B. Amoxicillin 1 g PO TID + azithromycin 500 mg PO q24h
C. Ceftriaxone 2 g IV q24h
D. Amoxicillin 1 g PO TID
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C. Ceftriaxone 2 g IV q24h
D. Amoxicillin 1 g PO TID
Case #1 Summary

Oral antibiotic therapy is equivalent to IV unless there is concern for adequate absorption

- Amoxicillin 30 mg/kg/dose (max 1 g) PO TID
- Severe penicillin allergy: clindamycin 13 mg/kg/dose (max 600 mg) PO TID
- Not tolerating orals: ampicillin 50 mg/kg/dose (max 2 g) IV q6h
- Severe penicillin allergy, not tolerating orals: ceftriaxone 75 mg/kg/dose (max 2 g) q24h

Immunization status does not impact empiric treatment

Azithromycin not recommended

- Atypical pneumonia self limiting
- Treatment not required

Treatment for 5-7 days
Case #2

A 22-month-old female presents to the ED with complaints of abdominal pain, diarrhea, and fever over the past couple days. The parents report decreased urination and no recent antibiotic utilization. PMH significant for hydronephrosis.

- Labs: WBC 14.1, CRP 13.4
- Vitals: Temp 38.2°C, HR 142, RR 36, BP 96/55
- Testing: UA with positive nitrites, moderate leukocyte esterase, 28 WBC, and 3+ bacteria, 0 epithelial cells
- Imaging: abdominal US shows hydronephrosis with possible nodule or mass on the left kidney
- Cultures: urine culture growing > 100,000 CFU of GNB
- Allergies: NKDA
Case #2

The patient is started on ceftriaxone and admitted with pyelonephritis. A CT abdomen showed hydronephrosis without a mass or nodule. The urine culture is identified as E. coli still awaiting susceptibilities. The patient is ready for discharge. What would be the best empiric antibiotic option for this patient?

A. Continue ceftriaxone 75 mg/kg/dose IV q24h
B. Cephalexin 25 mg/kg/dose PO TID
C. Nitrofurantoin 100 mg PO BID
D. TMP/SMX 3 mg/kg/dose PO BID
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Case #2 Summary

Children between 3 months and 24 months old may present with fever as the only symptom of UTI

- Difficult for patient to communicate symptoms
- Hard to distinguish between cystitis and pyelonephritis

E. Coli is responsible for 80% of pediatric UTIs

The preferred empiric oral option is cephalexin 25 mg/kg/dose PO TID

- Cefazolin susceptibility predicts cephalexin susceptibility
  - ~90% E. coli susceptible
- TMP/SMX reserved for serious cephalosporin allergy
  - ~70% E. coli susceptible

Treat for 7-10 days
References


Case #3

Patient is a newborn term infant admitted with concerns for early onset sepsis (EOS) with recurrent hypoglycemia. Ampicillin and gentamicin were started for suspected sepsis.

- Labs: CRP 0.7, I/T 0.18
- Vitals: Temp 36.7°C, HR 140, RR 44, BP 60/40
- Cultures: peripheral blood culture show gram positive cocci in clusters in 1 of 1 bottles with time to positivity of ~48 hrs
- Allergies: NKDA
Case #3

The blood culture comes back as *Staphylococcus* species, coagulase negative. Patient only has a peripheral IV, is still on room air, and remains afebrile. The physician would like to start vancomycin for Staph bacteremia, what would you recommend?

A. Agree with the physician and start vancomycin
B. Recommend keeping ampicillin + gentamicin for a total of 5 days
C. Recommend switching to cefazolin
D. Recommend stopping antibiotics, blood culture is likely a contaminant
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Case #3 Summary

Common blood culture contaminants include:

- Staphylococcus species, NOT Staphylococcus aureus DNA detected
- Streptococcus species, NOT group A, B or Streptococcus pneumoniae
- Gram positive cocci in clusters AND BCID performed and negative
- Gram positive bacillus AND BCID performed and negative

Most blood cultures with true bacteremia are positive within 24 hrs

Could be true bacteremia if patient has central line or hardware

- If both peripheral and central cultures are positive, the patient likely has central line associated infection
- If only central line is positive, repeat evaluation is necessary, collect BOTH central and peripheral cultures
- If only the peripheral culture is positive, this is likely a contaminant

If patient is not doing well clinically, re-evaluation and a repeat blood culture is needed