Community-Acquired Pneumonia

CORIZA
Clinical Optimization of Respiratory Infections: Zeroing in on Antibiotics

Stanford MEDICINE Children's Health

Community-Acquired Pneumonia

History of immediate hypersensitivity or anaphylaxis to amoxicillin, penicillin, or cephalexin **OR** delayed hypersensitivity (e.g., SJS, TEN, DRESS) to any penicillin or cephalosporin?

Yes

- **Clindamycin** x 5 days
  10 mg/kg/dose PO TID
  (max 600 mg/dose)

2nd line

- **Levofloxacin**
  < 5y: 10 mg/kg/dose PO BID x 5 days
  (max 375 mg/dose)
  ≥ 5y: 10 mg/kg/dose PO daily x 5 days
  (max 750 mg/dose)

No

- **Amoxicillin** x 5 days
  45 mg/kg/dose PO BID
  (max 2000 mg/dose)

Exclusion Criteria

- Aspiration pneumonia
- Hospital-acquired pneumonia
- Radiographic evidence of complicated pneumonia
- Host risk factors:
  - Immunodeficiency or immunocompromise
  - Known lung disease other than asthma (e.g., cystic fibrosis, chronic lung disease, structural anomalies)
  - Neuromuscular disease
  - Preexisting tracheostomy or mechanical ventilation dependence
  - Sickle cell disease
  - Acquired or unrepaired/palliated congenital heart disease

If concerned for atypical pneumonia

Amoxicillin x 5 days 45 mg/kg/dose PO BID (max 2000 mg/dose)	**ADD**	**Azithromycin** x 5 days 10 mg/kg/dose PO daily x 1 day (max 500 mg/dose), followed by 5 mg/kg/dose PO daily x 4 days (max 250 mg/dose)
Clindamycin x 5 days 10 mg/kg/dose PO TID (max 600 mg/dose)	**CHANGE TO**	**Levofloxacin** **< 5y:** 10 mg/kg/dose PO BID x 5 days (max 375 mg/dose) **≥ 5y:** 10 mg/kg/dose PO daily x 5 days (max 750 mg/dose)
Levofloxacin **< 5y:** 10 mg/kg PO BID x 5 days (max 375 mg/dose) ≥ **5y:** 10 mg/kg PO daily x 5 days (max 750 mg/dose)		*No addition or changes needed*

If the clinical picture is difficult to distinguish between atypical and typical bacterial pneumonia:

- ***ADD*** *azithromycin x 5 days to the community-acquired pneumonia therapy (except levofloxacin)*
  OR *use levofloxacin as a single agent*

If signs/symptoms are suggestive of atypical pneumonia alone:

- *Consider azithromycin* ***monotherapy***

Most children with community-acquired pneumonia due to Mycoplasma pneumoniae experience a mild, self-limited illness, and supporting evidence for antibiotic treatment is limited.

Allergy Guidance

- *Amoxicillin is the recommended first-line agent for community-acquired pneumonia.*
- *Although 10% of the population reports a penicillin allergy, < 1% of the population is truly allergic. Correctly identifying if your patient is actually penicillin-allergic can reduce unnecessary use of broad-spectrum antibiotics.*
- *For patients with a history of immediate hypersensitivity, including anaphylaxis, to amoxicillin, penicillin, or cephalexin, or delayed hypersensitivity reaction (e.g., SJS, TEN, DRESS) to penicillins or cephalosporins, use clindamycin or levofloxacin.*

References

1. Lipsett SC, Hall M, Ambroggio L, et al. Antibiotic Choice and Clinical Outcomes in Ambulatory Children with Community-Acquired Pneumonia. *J Pediatr*. 2021;229:207-215.e1. doi:10.1016/j.jpeds.2020.10.005
2. Ambroggio L, Test M, Metlay JP, et al. Comparative Effectiveness of Beta-lactam Versus Macrolide Monotherapy in Children with Pneumonia Diagnosed in the Outpatient Setting. *Pediatr Infect Dis J*. 2015;34(8):839-842. doi:10.1097/INF.0000000000000740
3. Williams DJ, Edwards KM, Self WH, et al. Effectiveness of β-Lactam Monotherapy vs Macrolide Combination Therapy for Children Hospitalized With Pneumonia. *JAMA Pediatr*. 2017;171(12):1184-1191. doi:10.1001/jamapediatrics.2017.3225
4. Garcia T, Florin TA, Leonard J, et al. Clinical Features and Management Strategies in Children With Mycoplasma Pneumoniae. *Pediatr Emerg Care*. 2025;41(4):305-310. doi:10.1097/PEC.0000000000003338

This algorithm is general guidance and is not intended to replace or supersede clinical judgment.