Pediatric Care

Outpatient Treatment Recommendations for Common Infections: Summary of Guidelines[1]

The quick initiation of antibiotics to treat infections has been proven to save lives. However, antibiotics can have serious side effects, including adverse drug reactions, mislabeled allergies, diarrhea, and rashes in children.

The misuse of antibiotics can lead to antibiotic resistance, one of the most serious threats in public health. Researchers have seen an increase in infections caused by bacteria that are resistant to multiple types of antibiotics among children in the U.S.

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Pharyngitis (sore throat) [8,9]

During winter and spring, up to 20% of asymptomatic children can be colonized with GAS, leading to false positives from rapid-testing and increasing unnecessary antibiotic exposure. Streptococcal pharyngitis is primarily a disease of children 5-15 yo and is rare in preschool children.

Diagnosis

Clinical features alone do NOT distinguish between GAS and viral pharyngitis. Children with sore throat, plus 2 or more of the following features, should undergo a rapid antigen detection test (RADT) or nucleic acid amplification test (NAAT):

1. Absence of cough
2. Tonsillar exudates
3. Fever
4. Tender cervical lymphadenopathy
5. Age younger than 15 years

Testing should generally NOT be performed in children younger than 3 yo in whom GAS rarely causes pharyngitis and rheumatic fever is uncommon.

Negative RADT = tests should be confirmed with a throat culture or PCR; positives do NOT require a follow up culture. If using rapid PCR test, then backup is not required for negative test.

Management

First-line therapy:

- amoxicillin 50 mg/kg/day PO once daily or in 2 divided doses x 10 days (max = 1000mg)
- penicillin V 250 mg PO 2-3x/day (adolescents and adults: 250 mg 4x/day or 500 mg 2x/day) x 10 days

Non-type I penicillin allergy:

- cephalexin 20 mg/kg orally twice daily for 10 days
- cefadroxil 30 mg/kg orally once daily x 10 days
- clindamycin 7 mg/kg orally three times daily for 10 days
- azithromycin 12 mg/kg orally for one day then 6 mg/kg orally once daily for the next 4 days

Type I penicillin allergy (angioedema, anaphylaxis):

- clindamycin 7 mg/kg orally three times daily for 10 days
- clarithromycin 7.5 mg/kg orally twice daily for 10 days,
- azithromycin 12 mg/kg orally once then 6 mg/kg orally once daily for the next 4 days

Community-Acquired Pneumonia (CAP)[10]

Community-acquired pneumonia (CAP) accounts for ~1.8 million pediatric health care visits in the United States annually. The Pediatric Infectious Diseases Society (PIDS)/Infectious Diseases Society of America (IDSA) CAP guidelines recommend against the routine use of antibiotics for preschool-aged children (<5 years old) in the outpatient setting, because most infections in this age group are viral. However, preschool-aged children continue to routinely receive antibiotics for CAP.

Diagnosis

Suspect CAP in children with fever, tachypnea, cough, chest pain. Clinical features do not reliably distinguish between viral, bacterial, and atypical pneumonias. Chest X-ray is not needed in children with clinical evidence of pneumonia and mild uncomplicated disease.

Management

Children < 5

- Antimicrobial therapy not routinely required in preschool aged children because viral pathogens are responsible for most clinical disease.
- Amoxicillin PO 90 mg/kg/day in 2 divided doses x 5 days

Children ≥ 5

- Amoxicillin PO 90 mg/kg/day in 2 divided doses for 5 days
- Macrolides recommended if atypical pna suspected:
  - Azithromycin PO 10 mg/kg/day for 1 day then 5 mg/kg/day for 4 days

Amoxicillin allergy:

- (Consider use of PEN-FAST allergy tool to identify low-risk penicillin allergies as high-dose amoxicillin is treatment of choice)
- Clindamycin 30-40mg/kg/day in 3 divided doses (MAX 1800/day) for 5 days
- Levofloxacin, oral ≥ 6 months and < 5 years: 10 mg/kg/dose every 12 hours (Max: 375 mg/dose)
  ≥ 5 years: 10 mg/kg/dose every 24 hours (Max: 750 mg/dose) for 5 days

Common Cold or non-specific upper respiratory tract infection[2-4]

Colds usually last around 10 days

Diagnosis

Usually, nasal discharge begins as clear and changes throughout the course of the illness.

Fever, if present, occurs early in the illness.

Management

- **Antibiotics are NOT helpful and should NOT be used. Focus on symptomatic relief.**
- OTC cough and cold medications are NOT recommended for use in children younger than 6 yo. These substances are among the top 20 substances leading to death in children <5 yo.
- Low-dose inhaled corticosteroids and oral prednisolone do NOT improve outcomes in non-asthmatic children.
- Symptom management (fluids, rest, hot shower with steam, acetaminophen, or ibuprofen)

Acute Otitis Media (AOM)[6,7]

Incidence of adverse effects associated with antibiotics used to treat AOM in children is 2.2%-18.9%.

Diagnosis

Otalgia is the most common symptom, but young children can present with non-specific signs and symptoms (pulling or tugging at the ears, irritability, headache, restless sleep, anorexia, fever, vomiting).

Diagnosis is made by the presence of the following:

- Moderate to severe bulging of tympanic membrane (TM)
- New onset otorrhea NOT due to otitis externa.
- Mild bulging of TM and acute otalgia (<48h) or intense erythema of the TM.

AOM should NOT be diagnosed in children without middle ear effusion (based on pneumatic otoscopy and/or tympanometry).

Severe AOM: moderate or severe otalgia or otalgia for ≥48 hours, or temperature ≥39°C (102.2°F).

Management

Consider watchful waiting in children over not meeting the criterion for abx tx below (if patient can have reliable follow-up in a clinical setting if needed):

- Age 6-24 mo with unilateral AOM
- ≥2 yo with unilateral or bilateral AOM

Treat with antibiotics:

- AOM in <6 mo
- Age 6-24 mo with bilateral AOM
- Severe AOM, regardless of age
- No clinical improvement within 48-72 hours of watchful waiting

If treating with antibiotics:

- amoxicillin 80-90 mg/kg/day PO in 2 divided doses (max 2000mg/dose)

If risk factors for resistance (recent beta-lactam therapy, purulent conjunctivitis, or history of recurrent AOM unresponsive to amoxicillin):

- amoxicillin/clavulanate PO: 90 mg/kg/day amoxicillin PO with 6.4 clavulanate mg/kg/day PO in 2 divided doses

Non-type I penicillin allergy:

- cefdinir 14 mg/kg/day PO in 1 or 2 divided doses,
- cefuroxime 30 mg/kg/day PO in 2 divided doses.
- cefpodoxime 10 mg/kg/day PO in 2 divided doses

Type 1 PCN allergy:

- Clindamycin 30-40mg/kg/day PO divided every 6 - 8 hours

Duration of treatment:

<2 years, TM perforation, or recurrent AOM: 10 days

≥2 years, no TM perforation, and no history of recurrent AOM: 5-7 days

Bronchiolitis[5]

Bronchiolitis is a viral inflammation of the lower respiratory tract.

Diagnosis

Routine laboratory tests and radiologic studies are NOT recommended.

Management

Usually patients worsen between 3-5 days, followed by improvement. Suctioning of the nares may provide temporary relief.

Unless hospitalized, neither albuterol nor nebulized racemic epinephrine should be administered to infants and children with bronchiolitis

Antibiotics are NOT helpful and should NOT be used.

Prevention of RSV bronchiolitis:

- Maternal RSV vaccine between 32-36 weeks during RSV season OR

- For all infants aged <8 months to protect against RSV bronchiolitis and for children aged 8-19 months at increased risk for severe RSV disease, recommend single dose of nirsevimab.
- First season: If <5 kg: 50 mg or > 5 kg: 100 mg
- Increased Risk Pts Second season: 200 mg

There is no role for corticosteroids, ribavirin, or chest physiotherapy in the management of bronchiolitis. Like bronchiolitis, bronchitis is inflammation most often caused by a virus and antibiotics are ineffective.

Acute rhinosinusitis[11,12]

Sinuses develop gradually after birth and children younger than school age are less likely to have sinus infections. Approximately 90-98% of cases are viral. Even if bacterial, most cases improve with symptomatic treatment alone and antibiotics are usually not needed.

Diagnosis

Symptoms of acute viral and bacterial rhinosinusitis (ABRS) overlap and there are no clinical criteria to distinguish them.

ABRS can be considered if symptoms are:

- Persistent and not improving for 10 days or more
- Severe, associated with fever ≥39°C (102.2°F), and purulent nasal discharge or facial pain lasting for >3–4 consecutive days Worsening after initial improvement for 3-4 days Imaging tests are not recommended for uncomplicated cases. Refer patient for urgent evaluation if there are signs of complications (i.e., neurological changes, proptosis, peri-orbital edema).

Management

- Watchful waiting for up to 3 days if NOT severe or worsening and with reliable follow up.
- First line (uncomplicated): amoxicillin 45 mg/kg/day PO in 2 divided doses x 10 days.
  If severe symptoms, failure to respond to first line therapy within 72 hours or risk factors for resistance (age <2yo, daycare, antibiotics within 30 days, recent hospitalization, under immunized with PCV, ≥10% penicillin non-susceptible S. pneumoniae, immunocompromised):
  - amoxicillin/clavulanate 80-90 mg/kg/day PO of the amoxicillin component in 2 divided doses (max 4g/day) x 10 days.

Penicillin allergy:

- cefixime 8 mg/kg/day PO in 2 divided doses for 10 days,
- cefpodoxime 10 mg/kg/day PO in 2 divided doses for 10 days,
- cefdinir 14 mg/kg/day PO in 1-2 doses x 10 days.

Macrolides (such as azithromycin) are NOT recommended due to high levels of S. pneumoniae antibiotic resistance.

Pediatric Outpatient References

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Resources

For more information, call RIDOH's Center for Acute Infectious Disease Epidemiology at 401-222-2577.

For more information and to download free patient education resources from RIDOH, visit http://health.ri.gov/antibiotics.

For more information and to download free patient education resources from CDC, visit https://www.cdc.gov/antibiotic-use/.

To order free patient resources from CDC, visit https://wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx and search "Antibiotic Use."

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