

Antimicrobial Stewardship

March, 2024

Acute Rhinosinusitis

Synopsis of sinusitis guidelines

I have summarized UpToDate plus three guidelines for treatment of acute rhinosinusitis. A few takeaways:

1. Only treat if it is severe and not going away
2. Number needed to harm is significantly higher than number needed to treat
3. No need to treat for longer than 7 days. More ADRs with longer treatment.
4. **High dose** amoxicillin ± clavulanate for patients with risk w risk factors

Reference	When and Why to Treat w Antibiotics	Antibiotic Choice	Treatment Duration	Risk Factors	Other Treatments	Misc.
UpToDate (current through 2024)	<ul style="list-style-type: none"> - After at least 10 days of symptoms - Patients likely to be lost to follow up 	<p>No Risk Factors</p> <ul style="list-style-type: none"> - Amoxicillin 500mg TID or 875mg BID or amoxicillin-clavulanate 500mg-125mg TID or 675mg-125mg BID <p>Risk Factors</p> <ul style="list-style-type: none"> - Amoxicillin-clavulanate ER 2gm-125mg BID <p>Type-I Penicillin Allergy</p> <ul style="list-style-type: none"> - Doxycycline 100mg BID or 200mg daily <p>Non Type-I Allergy</p> <ul style="list-style-type: none"> - First line: 3rd generation cephalosporin (e.g. cefixime, cefpodoxime) plus or minus clindamycin (indicated if risk factors for resistance) - Second line: levofloxacin or moxifloxacin 	<ul style="list-style-type: none"> - 5 to 7 days for initial treatment - 7 to 10 days for relapse 	<ul style="list-style-type: none"> - Age 65 and up - Hospitalization in last 5 days - Antibiotic use in last month - Immunocompromise - Multiple comorbidities (DM, cardiac, renal, etc) - Severe infection 	<ul style="list-style-type: none"> - OTC analgesics - Saline irrigation - Intranasal steroids 	<ul style="list-style-type: none"> - No difference in relapse rates between 5 and 10 day treatment groups - Bacterial infection in only 0.5% to 2% of ARS - Even in ABRs, antibiotics only modestly improve sx (66% placebo, 80% antibiotics) - Pts treated w abx had higher cure rate or improvement in sx (OR 1.64 [1.35-2.0]) but more adverse outcomes (OR 1.87 [1.21-2.90]) - Longer treatment duration results in more adverse outcomes - NNT is 13-18, NNH is ~8
<p>IDSA</p> <p>Chow et al. (2012)</p>	<ul style="list-style-type: none"> - After at least 10 days of symptoms without improvement or severe symptoms for at least three to four consecutive days at beginning of illness or worsening signs/symptoms for three to four days after initial improvement of URI ("double sickening") 	<p>No Risk Factors</p> <ul style="list-style-type: none"> - Amoxicillin-clavulanate 875mg-125mg BID <p>Risk Factors</p> <ul style="list-style-type: none"> - High-dose amoxicillin-clavulanate (also if <i>S. pneumoniae</i> resistance rate 10% or higher) <p>Penicillin Allergy (Regardless of Severity)</p> <ul style="list-style-type: none"> - Adults: doxycycline or fluoroquinolone - Kids: levofloxacin (type-I) or 3rd generation cephalosporin + clindamycin (not type-I) 	<ul style="list-style-type: none"> - 3 to 5 days and --- Continue to a total of 7 to 10 days if improving - Broaden coverage if not improving and treat for a total of 7 to 10 days - 10 to 14 days for kids 	<ul style="list-style-type: none"> - Age < 2 or > 65 - Antibiotics within last month - Hospitalization in last 5 days - Multiple comorbidities - Immunocompromise - Daycare 	<ul style="list-style-type: none"> - Intranasal steroids - Large volume nasal saline irrigation 	<ul style="list-style-type: none"> - Delayed fills not recommended - Amoxicillin-clavulanate preferred over amoxicillin. Beta-lactams preferred over fluoroquinolones. TMP-SMX, cephalosporins, macrolides not recommended. - Avoid decongestants
<p>American Academy of Otolaryngology-Head and Neck Surgery</p> <p>Rosenfeld et al. (2015)</p>	<ul style="list-style-type: none"> - Symptoms for 10 days or more without improvement - Double sickening 	<p>No Risk Factors</p> <ul style="list-style-type: none"> - Either amoxicillin 875mg or amoxicillin-clavulanate 875mg-125mg BID <p>Risk Factors</p> <ul style="list-style-type: none"> - High-dose amoxicillin-clavulanate <p>Type-I Penicillin Allergy</p> <ul style="list-style-type: none"> - Doxycycline or respiratory fluoroquinolone <p>Non Type-I Penicillin Allergy</p> <ul style="list-style-type: none"> - Third generation cephalosporin + clindamycin 	<ul style="list-style-type: none"> - 3 to 7 days 	<ul style="list-style-type: none"> - Antibiotics within last month - Recent hospitalization - Failure of previous antibiotic therapy - Smoking - Daycare 	<ul style="list-style-type: none"> - OTC analgesics - Intranasal steroids (sx improvement in 73% vs 66% placebo at 15 to 21 days) - Large volume nasal saline irrigation 	<ul style="list-style-type: none"> - Only "unusually severe" presentations should be treated early - Re-evaluate in 7 days - Cure or improvement at 7 to 15 days: 91% for antibiotics, 86% for placebo. NNT 11 to 15, NNH 8.1 - Complication rate for antibiotics and placebo similar - Antibiotic ADRs lower for 5 days vs 10 days of treatment (OR 0.79) - No difference between 3 to 7 days of treatment and 7 to 10 days of treatment - Macrolides and TMP-SMX not recommended
<p>International Forum of Allergy & Rhinology</p> <p>Orlandi et al. (2020)</p>	<ul style="list-style-type: none"> - Symptoms for 7 days (10 days for peds) 	<p>No Risk Factors</p> <ul style="list-style-type: none"> - Either amoxicillin or amoxicillin-clavulanate (standard dose) <p>Risk Factors</p> <ul style="list-style-type: none"> - High-dose amoxicillin-clavulanate <p>Penicillin Allergy or Tx Failure</p> <ul style="list-style-type: none"> - TMP-SMX, doxycycline, or respiratory fluoroquinolone 	<ul style="list-style-type: none"> - 10 days or fewer 	<ul style="list-style-type: none"> - No statement 	<ul style="list-style-type: none"> - Intranasal steroids - Large volume nasal saline irrigation 	<ul style="list-style-type: none"> - CRP can be used to guide diagnosis of ABRs - Shorter treatment duration associated with fewer ADRs and better compliance - Don't use systemic steroids - Minimal evidence for oral/nasal decongestants - No evidence for mucolytics - NNT 10 to 19. NNH 8.1.

Notes:

- "High-dose" means 2gm BID or 90mg/kg BID of amoxicillin component; maximum 2gm per dose

- Notice that UpToDate recommends amoxicillin-clavulanate 2gm-125mg *extended release* BID whereas the other references recommend the IR formulation

References:

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David Chastain-Stultz, FNP-BC
Antimicrobial Stewardship Champion
Family Practice, NHC