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Antibiotic Therapy Duration

For many conditions, there is mounting evidence taking antibiotics for a shorter length of time than previously recommended is as effective as longer courses of therapy AND less likely to promote antibiotic resistance.[1-3] Additional benefits may be associated with shorter courses as well: decreased exposure to adverse effects which may occur with antibiotic medications, improved compliance because of shorter duration of therapy and reduced cost.[1,3] Table 1 contains a list of conditions for which short antibiotic regimens are now considered best practice for appropriate patients.

Table 1: Conditions for which shorter antibiotic courses of therapy have been shown to be effective[1-3]

Condition	Duration	Comments
Acute bronchitis	• abx not routinely recommended	• usually viral
Acute Exacerbation of Chronic Bronchitis	• abx can be considered if signs of bacterial infection: sputum purulence AND at least one of increased sputum volume or increased dyspnea • ≤ 5 day course	• only 50 % of exacerbations are due to infection (viral and bacterial) • abx not routinely recommended
Acute otitis media	• watchful waiting for 2 – 3 days if mild to moderate: temp < 38°C, mild pain for < 48 hours • 5 day course children >2 years of age • 10 day course children <2 years of age, children with recurrent AOM or otitis media associated with perforated TM, and cases where initial therapy failed	• often viral • WHO guidelines: Consider <3 days of abx (e.g., amoxicillin, azithromycin, ceftriaxone) for children >2 years old with uncomplicated infections [4]
Acute sinusitis	• abx not recommended unless s/sx worsen after initial improvement or persist > 10 days • 5 day course of abx (exception: 3 days course of azithromycin)	• usually viral
Cellulitis	• 5 day course	
Cystitis, uncomplicated*	• 3 day course TMP-SMX • 5 day course nitrofurantoin	• check local resistance rates • 1 dose fosfomycin tromethamine – reserve for ESBL-producing bacteria • 3 day course fluoroquinolones – reserve for allergy, intolerance to 1st line abx or complicated cystitis
Pyelonephritis, uncomplicated*	• 5 day levofloxacin course • 7 day ciprofloxacin course	
Pneumonia, uncomplicated, community-acquired	• adult: ≥5 days AND patient afebrile & clinically stable^ for 24-48 hrs • pediatric: ≥7 days AND patient afebrile & clinically stable^ for 24-48 hrs	

*uncomplicated = otherwise healthy; ^clinically stable = no more than one of: heart rate > 100 beats per minute; respiratory rate > 24 breaths per minute; or systolic blood pressure < 90 mmHg

abx=antibiotics; ESBL = extended spectrum beta lactamase; s/sx = signs and symptoms; TMP-SMX = trimethoprim-sulfamethoxazole; WHO = World Health Organization

Shorter antibiotic protocols may not be suitable for patients who are immunosuppressed or have a history of recurrent infections.[2,3] The duration of treatment should NOT be shortened for the following conditions[1-3]:

- tuberculosis
- endocarditis
- osteomyelitis
- asymptomatic bacteriuria in pregnancy
- confirmed Group A streptococcocal pharyngitis (10 day treatment is recommended to prevent rheumatic fever)

Should patients still be routinely advised to finish all the medication in their antibiotic prescriptions?

- **Yes, if there is a clear indication for the antibiotic and if the duration is based on current evidence (see Table 1), it is important patients complete the full course of therapy.[5] Keep in mind that dosing for short duration courses is often higher than previously recommended[5] so check current guidelines (e.g., RxTx Therapeutic Choices[6], RxFiles[7], Bugs&Drugs[8]) to ensure the appropriate dose is being used.**

- But in other situations, maybe not. There is no evidence that taking antibiotics past the time at which a patient's symptoms are resolved reduces antibiotic resistance or prevents relapse for most infections.[1] Recent medical journal articles by Infectious Disease specialists encourage prescribers to allow patients to stop taking antibiotics when their symptoms disappear.[1,4] Advise patients to check with their healthcare provider if their symptoms resolve before their antibiotic is finished to see if it is appropriate to stop taking the medication.

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