The Centers for Disease Control and Prevention

Antibiotic Treatment Dosing Guidelines for The National Pharmaceutical Stockpile Components

May 2001

Inhalational Anthrax Treatment Protocol

	Initial Therapy	Duration
Adults: **Intravenous**	Ciprofloxacin 400 mg BID[1] **OR**	**Estimated for 7 days**. (Switch to oral antibiotic therapy when clinically appropriate to complete **60-day**[2] regimen.)
	Doxycycline 100 mg BID **OR**	
	Erythromycin 15-20 mg/kg/day in divided doses	
	Penicillin G 20 MU/day in divided doses	
Oral	Ciprofloxacin 500 mg BID **OR**	**Estimated for 60 days**[2]
	Doxycycline 100 mg BID	
Children[3] **Intravenous**	Ciprofloxacin 15 mg/kg IV Q12hrs [1, 4] **OR**	**Estimated for 7 days**. (Switch to oral antibiotic therapy when clinically appropriate to complete **60-day**[2] regimen.)
	Doxycycline[5]: **> 8 yrs and > 45 kg**: 100 mg BID **> 8 yrs and ≤ 45 kg**: 2.2 mg/kg/day in 2 divided doses **≤ 8 yrs**: (same as **> 8 yrs and ≤ 45 kg)** **OR**	
	Erythromycin 15-20 mg/kg/day IV in divided doses	
	Penicillin G 400,000 Units/kg/day in divided doses	
Oral	Ciprofloxacin 15-20 mg/kg Q12 hrs[4] **OR**	**Estimated for 60 days**[2]
	Doxycycline[5]: **> 8 yrs and > 45 kg**: 100 mg BID **> 8 yrs and ≤ 45 kg**: 2.2 mg/kg BID **≤ 8 yrs**: same as above	
Pregnancy[3, 6]	Same as for non-pregnant adults (the high mortality rate from the infection outweighs the risk posed by the antibiotic)	
	Doxycycline oral not recommended for more than 14 days of therapy.	
Immuno-compromised	Same as for non-immunocompromised adults and children	

1. Therapy with ciprofloxacin may be initiated either as intravenous or oral dosage form. The pharmacokinetics are such that oral ciprofloxacin is rapidly and well absorbed from the GI tract with no substantial loss by first-pass metabolism. Maximum serum concentrations are attained 1-2 hours after oral dosing.
2. Because the potential persistence of spores following a possible aerosol exposure, antibiotic therapy should be continued for at least 30 days if used alone, and although supporting data are less definitive, longer antibiotic therapy (up to 42-60 days) might be indicated.
3. If susceptibility testing allows, therapy should be changed to IV penicillin for treatment or oral amoxicillin for post-exposure prophylaxis to continue therapy out 60 days.
4. Ciprofloxacin dose should not exceed 1gram/day in children.
5. In 1991, the American Academy of Pediatrics amended their recommendation to allow treatment of young children with tetracyclines for serious infections, such as, Rocky Mountain Spotted Fever, for which doxycycline may be indicated. Doxycycline is preferred for its twice-a-day dosing low incidence of gastrointestinal side effects.
6. Although tetracyclines are not recommended during pregnancy, their use may be indicated for life-threatening illness. Adverse affects on developing teeth and bones are dose related, therefore, doxycycline might be used for a short course of therapy (7-14 days) prior to the 6th month of gestation. Please consult physician after the 6th month of gestation for recommendations.

May 2001

Tularemia (pneumonic, pleuropulmonary, typhoidal) Treatment Protocol

	Initial Therapy	Duration
Adults	Gentamicin 3-5 mg/kg/day (or in 3 divided doses, Q8 hrs) (IV or IM) [1, 2] **OR**	**7 – 14 days** (If switching to oral doxycycline, duration of therapy should continue for a total of **21 days**)
	Doxycycline 100 mg IV BID **OR**	Estimated for **21 days** (May switch to oral doxycycline when clinically appropriate) [3]
	Ciprofloxacin 400 mg IV BID	Estimated for **10-14 days** (May switch to oral therapy when clinically appropriate)
Children	Gentamicin 6.0-7.5 mg/kg/day (or in 3 divided doses) (IV or IM) [1, 2] **OR**	**7 – 14 days** (If switching to oral doxycycline, duration of therapy should continue for a total of **21 days**)
	Doxycycline[4]: **> 8 yrs and > 45 kg**: 100 mg IV BID **> 8 yrs and ≤ 45 kg**: 2.2 mg/kg/day in 2 divided doses **≤ 8 yrs**: (same as **> 8 yrs and ≤ 45 kg)** **OR**	Estimated for **21 days** (May switch to oral doxycycline when clinically appropriate) [3]
	Ciprofloxacin[5] 15 mg/kg Q12hrs	Estimated for **10-14 days** (May switch to oral therapy when clinically appropriate)
Pregnancy [6,7]	Same as for non-pregnant adults	
Immuno-compromised	Same as for non-immunosuppressed adults and children	

1. Treatment of choice for tularemia is streptomycin. Streptomycin can be difficult to obtain; therefore gentamicin is often used and appears to be equally effective. Doxycycline is approved for the treatment of tularemia and is 90-100% absorbed after oral administration. This complete absorption may allow for its use in patients who can tolerate oral administration to complete the duration of therapy that is designated above.
2. The frequency of administration is left up to the discretion of the clinician, however, it should be noted that once-daily dosing of aminoglycosides is investigational. The manufacturers usually recommend that the daily dose be given in equally divided doses at 8-hour intervals; however, current evidence suggests that once-daily (single-daily) dosing of aminoglycosides is at least as effective as, and may be less toxic than, conventional dosing regimens employing multiple daily doses of the drugs.
3. To avoid relapses with shorter courses of therapy, longer courses of therapy are required when using oral doxycycline in F. tularensis due to doxycycline's bacteriostatic mechanism of action.
4. In 1991, the American Academy of Pediatrics amended their recommendation to allow treatment of young children with tetracyclines for serious infections, such as, Rocky Mountain Spotted Fever, for which doxycycline may be indicated. Doxycycline is preferred for its twice-a-day dosing low incidence of gastrointestinal side effects.
7. Ciprofloxacin dose should not exceed 1gram/day in children.
8. Aminoglycosides can cause fetal toxicity when administered to pregnant women, but potential benefits from use of the drug may be acceptable in certain conditions despite the possible risks to the fetus.
9. Although tetracyclines are not recommended during pregnancy, its use may be indicated for life-threatening illness. Adverse affects on developing teeth and bones are dose related, therefore, doxycycline might be used for a short course of therapy (7-14 days) prior to the 6th month of gestation. Please consult physician after the 6th month of gestation for recommendations.

Plague Treatment Protocol

	Initial Therapy	Duration
Adults **Intravenous**	Gentamicin 3-5 mg/kg/day (or in 3 divided doses, Q8 hrs) (IV or IM)[1, 2] **OR** Doxycycline 100 mg BID **OR**	**Estimated for 10 Days** (Switch to oral Doxy when clinically appropriate to complete 10 day therapy)
Oral	Doxycycline 100 mg BID	**Estimated for 10 Days**
Children[4] **Intravenous**	Gentamicin 6-7.5 mg/kg/day or in 3 divided doses (Q 8 hrs)[2] **OR** Doxycycline[3]: **> 8 yrs and > 45 kg**: 100 mg BID **> 8 yrs and ≤ 45 kg**: 2.2 mg/kg/day in 2 divided doses **≤ 8 yrs**: (same as **> 8 yrs and ≤ 45 kg)** **OR**	**Estimated for 10 Days** (Switch to oral Doxy when clinically appropriate to complete 10 day therapy)
Oral	Doxycycline[3]: **> 8 yrs and > 45 kg**: 100 mg BID **> 8 yrs and ≤ 45 kg**: 2.2 mg/kg BID **≤ 8 yrs:** 2.2 mg/kg BID	**Estimated for 10 Days**
Pregnancy[4, 5]	Same as for non-pregnant adults	
Immuno-compromised	Same as for non-immunocompromised adults and children	

1. Treatment of choice for plague is streptomycin. Streptomycin can be difficult to obtain; therefore gentamicin is often used as the drug of choice and appears to be effective.
2. The frequency of administration is left up to the discretion of the clinician, however, it should be noted that once-daily dosing of aminoglycosides is investigational. The manufacturers usually recommend that the daily dose be given in equally divided doses at 8-hour intervals; however, current evidence suggests that once-daily (single-daily) dosing of aminoglycosides is at least as effective as, and may be less toxic than, conventional dosing regimens employing multiple daily doses of the drugs.
3. In 1991, the American Academy of Pediatrics amended their recommendation to allow treatment of young children with tetracyclines for serious infections, such as, Rocky Mountain Spotted Fever, for which doxycycline may be indicated. Doxycycline is preferred for its twice-a-day dosing low incidence of gastrointestinal side effects.
4. Aminoglycosides can cause fetal toxicity when administered to pregnant women, but potential benefits from use of the drug may be acceptable in certain conditions despite the possible risks to the fetus.
5. Although tetracyclines are not recommended during pregnancy, its use may be indicated for life-threatening illness. Adverse affects on developing teeth and bones are dose related, therefore, doxycycline might be used for a short course of therapy (7-14 days) prior to the 6th month of gestation. Please consult physician after the 6th month of gestation for recommendations.

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