

Q FEVER

General points on treatment

Q fever is a zoonosis caused by *Coxiella burnetii*, an obligate intracellular gram-negative bacterium with high infectivity but with relatively low virulence. If used as a biological weapon, it is likely to cause low mortality but high acute morbidity. Transmission from man to man is rare.

The incubation period normally varies from 2 to 14 days (1). Up to 50% of infected individuals remain asymptomatic. In acute presentations, symptoms such as headache, malaise, fever, night sweats, cough and pneumonia with pleuritic pain may develop, but the disease is often self-limiting. Alternatively, symptoms may not appear until long after initial infection, so that the patient presents with the chronic forms of the disease.

In acute presentations, symptoms such as headache, malaise, fever, night sweats, cough and pneumonia with pleuritic pain may develop, but the disease is often self-limiting. Alternatively, symptoms may not appear until long after natural exposure, so that the patient presents with the chronic forms of infection.

Doxycycline is recommended for first line treatment. Both successes and failures with erythromycin in the treatment of Q fever have been reported (2,3). However, recent clinical data have indicated that the times to defervescence that may be achieved with erythromycin, roxithromycin and clarithromycin are similar to that of doxycycline, and that macrolides can be used empirically as second line therapy for acute Q fever (4). Quinolones have been used (2,3,5), and these agents and chloramphenicol may be useful in meningoencephalitis (see chapters on plague and tularemia for dosing recommendations on chloramphenicol).

In chronic infection with *Coxiella burnetii*, which may manifest as endocarditis, the choice of drug and duration of treatment (usually prolonged) has to be considered on an individual basis (2). Combination therapy is normally administered.

This guidance covers possible treatment regimens for suspected or confirmed acute clinical cases of Q fever and post exposure preventive therapy. It has been proposed that post-exposure preventive treatment may be effective if begun at 8 –12 days post exposure, (6).

Recommendations are compiled from references 1-6.

RECOMMENDATIONS

In a mass casualty setting parenteral treatment may not be an option and recommendations for oral treatment should be followed. Otherwise oral therapy should be substituted when the patient's condition improves. In addition, some products show high bioavailability (e.g. ciprofloxacin and doxycycline) making initial oral treatment an option.

Name of active substance Role in treatment and prophylaxis	Section	Treatment of suspected or confirmed clinical cases	Post exposure preventive treatment in case of suspected or confirmed exposure to the pathogen
Doxycycline ➤ First line treatment in adults and children ➤ First line preventive treatment in adults and children	Posology	Duration of treatment: 1 - 3 weeks <u>Adults</u> 100mg iv twice daily followed by 100 mg orally twice daily	Duration of preventive treatment: 1 week (ref 6) <u>Adults</u> 100 mg orally twice daily
		<u>Children</u> > 8years and >45 kg: adult dose > 8years and <45 kg: 2.2 mg/kg iv twice daily < 8years 2.2. mg/kg iv twice daily (maximum 200mg per day) followed by the same doses orally	<u>Children</u> > 8years and >45 kg: adult dose orally > 8years and <45 kg: 2.2 mg/kg orally twice daily < 8years 2.2. mg/kg orally twice daily (<u>maximum 200mg per day</u>)
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	

Name of active substance Role in treatment and prophylaxis	Section	Treatment of suspected or confirmed clinical cases Duration of treatment: 1- 3 weeks	Post exposure preventive treatment in case of suspected or confirmed exposure to the pathogen Duration of preventive treatment: 1 week (ref 6)
Erythromycin ➤ Second line treatment in adults and children ➤ Second line preventive treatment in adults and children	Posology	<u>Adults</u> Up to 1g iv 4 times daily followed by 500 mg orally four times daily.	<u>Adults</u> 500mg orally four times daily
		<u>Children</u> 50 mg/kg/day i.v in four divided doses followed by >35 kg: 500 mg orally, four times daily < 35 kg: 50 mg/kg/day orally in two divided doses daily (not to exceed 500 mg four times daily)	<u>Children</u> >35 kg: 500 mg orally, four times daily < 35 kg: 50 mg/kg/day orally in two divided doses daily (not to exceed 500 mg four times daily)
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	

Name of active substance	Section	Treatment of suspected or confirmed clinical cases	Post exposure preventive treatment in case of suspected or confirmed exposure to the pathogen
Role in treatment and prophylaxis		Duration of treatment: 1 – 3 weeks	Duration of preventive treatment: 1 week (ref 6)
Clarithromycin ➤ Alternative to erythromycin	Posology	Adults 500 mg i.v twice daily followed by 500 mg orally twice daily	Adults 500 mg orally twice daily
		Children The iv formulation is not recommended in children 7.5 mg/kg twice daily orally; max 250 mg twice daily. Over 40 kg give adult dose.	Children 7.5 mg/kg twice daily orally; max 250 mg twice daily. Over 40 kg, give adult dose.
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	

Name of active substance	Section	Treatment of suspected or confirmed clinical cases	Post exposure preventive treatment in case of suspected or confirmed exposure to the pathogen
Role in treatment and prophylaxis		Duration of treatment: 2 – 3 weeks	Duration of preventive treatment: 1 week
Roxithromycin ➤ Alternative to erythromycin	Posology	Adults 150 mg orally twice daily	Adults 150 mg orally twice daily
		Children 8 mg/kg/day orally in two divided doses	Children 8 mg/kg/day orally in two divided doses
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	

Name of active substance. Role in therapy and prophylaxis	Section	Treatment of suspected or confirmed clinical cases Duration of treatment: 2 -3 weeks	Post exposure prophylaxis in case of suspected or confirmed exposure to the pathogen
Ciprofloxacin ➤ First line treatment in case of meningoen­cephalitis.	Posology	Adults 400 mg iv twice daily followed by 500 mg orally twice daily	NA
		Children 10 – 15 mg/kg iv twice daily followed by 10-15 mg/kg orally twice daily	Children NA
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	
Ofloxacin Alternative to ciprofloxacin	Posology	Adults 400 mg iv twice daily followed by 400 mg orally twice daily	NA
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	
Levofloxacin Alternative to ciprofloxacin	Posology	Adults 500mg iv once daily, followed by 500mg orally once daily	NA
	Contra indications	Should be considered in view of the prescribing information given in the different Member States.	
	Pregnancy and lactation	Given the seriousness of the condition the same product as in non-pregnant adults should be considered. It is recommended, when possible, to cease breastfeeding.	

References

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6. United States Army Medical Research Institute of Infectious Disease. <http://www.usamriid.army>. January 26, 2002