# ANTIBIOTICS

## CHOICES FOR COMMON INFECTIONS




bpac nz
better medicine

A safe and effective strategy for antibiotic use involves only prescribing an antibiotic when it is needed and selecting an effective agent at the correct dose with the narrowest spectrum, fewest adverse effects and lowest cost.

General principles of antibiotic prescribing:

1. Only prescribe antibiotics for bacterial infections if:
   - Symptoms are significant or severe
   - There is a high risk of complications
   - The infection is not resolving
2. Use first-line antibiotics first
3. Reserve broad spectrum antibiotics for indicated conditions only

The following information is intended to guide selection of an appropriate antibiotic for infections commonly seen in general practice. Individual patient circumstances may alter treatment choices.

 Data on national resistance patterns are available from the ESR website: **www.surv.esr.cri.nz**

Regional resistance patterns may vary slightly, check with your local laboratory.

The information in this guide is correct as at the time of publication (April, 2011).

# Respiratory

## Acute exacerbation of chronic bronchitis or COPD

| | |
|---|---|
| ***Management*** | **Many exacerbations are triggered by viruses. Bacteria are often present in purulent sputum and are not an indication of a need for antibiotic treatment**. The limited benefit provided by antibiotic treatment is most helpful in patients with severe exacerbations and those with more severe airflow obstruction at baseline. |
| ***Common pathogens*** | Respiratory viruses, *Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin** 500 mg, three times daily, for five days |
| ***Alternatives*** | **Doxycycline** 100 mg, twice daily, for five days |

## Pneumonia – adult

| | |
|---|---|
| ***Management*** | Consider chest x-ray to confirm diagnosis.<br><br>Patients with two or more of the following features: age >65 years, confusion, respiratory rate >30/min, diastolic BP <60mm Hg, have a predicted mortality of 10% or higher and admission to hospital should be considered.<br><br>Patients can generally be adequately treated with an agent that covers *Streptococcus pneumoniae*. Ciprofloxacin should not be used as it does not reliably treat infections due to *Streptococcus pneumoniae*. |
| ***Common pathogens*** | Respiratory viruses, *Streptococcus pneumoniae, Haemophilus influenzae, Mycoplasma pneumoniae, Chlamydophilia pneumonia*, *Legionella pneumophila*, *Staphylococcus aureus* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin** 500 mg – 1.0 g, three times daily, for seven days<br><br>When cover for *Mycoplasma pneumoniae* or *Chlamydophilia pneumonia* is also required add either **erythromycin** or **doxycycline** |
| **Alternatives** | Monotherapy with **erythromycin**, **roxithromycin**, **doxycycline** or **co-trimoxazole** for those with a history of penicillin allergy.<br><br>**Doxycycline** or **amoxicillin clavulanate** may be considered in post viral/influenza pneumonia where *Staphylococcus aureus* may be implicated. |

## Respiratory (continued)

| Pneumonia – child | |
|---|---|
| ***Management*** | Suspect pneumonia if; tachycardia, grunting, in-drawing and high fever in absence of wheeze (auscultatory findings uncommon).<br><br>The choice between inpatient or outpatient therapy is dependent on clinical severity. Patients who have systemic toxicity or any indication of respiratory failure should be treated in hospital. If no response to outpatient treatment in 24 to 48 hours, review diagnosis and consider referral to hospital. |
| ***Common pathogens*** | Respiratory viruses, *Streptococcus pneumoniae, Haemophilus influenzae, Mycoplasma pneumoniae* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin** 25 mg/kg, three times daily, for seven days |
| ***Alternatives*** | **Erythromycin** – particularly in a young child if atypical infections are circulating in the community |

| Pertussis | |
|---|---|
| ***Management*** | **Antibiotics are ineffective if given more than seven days after the illness has started**. However, use may be justified during the first four weeks of the illness to limit transmission to susceptible contacts.<br><br>Community outbreaks of pertussis occur approximately every four years.<br><br>Pertussis is a notifiable disease. |
| ***Common pathogens*** | *Bordetella pertussis* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Erythromycin** 10 mg/kg (up to 500 mg), four times daily, for 14 days |
| ***Alternatives*** | None |

# Ear, nose and throat

## Otitis externa (acute)

| | |
|---|---|
| ***Management*** | Gentle debridement of the ear canal may be necessary to enhance the effectiveness of topical treatment. Suction cleaning is also a safe and effective method of debridement.<br>Most topical antibacterials are contraindicated in the presence of a perforated drum or grommets. |
| ***Common pathogens*** | *Staphylococcus aureus, Streptococcus pyogenes, Pseudomonas aeruginosa,* polymicrobial infections |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Clioquinol** + **flumethasone** (Locorten Vioform) 2 to 3 drops, two times daily<br>**or**<br>**Dexamethasone** + **framycetin** + **gramicidin** (Sofradex) 2 to 3 drops, three to four times daily. |
| ***Alternatives*** | **Acetic acid 2%** (Vosol) may be sufficient in mild cases.<br>**Ciprofloxacin** + **hydrocortisone** (Ciproxin HC) if pseudomonas suspected, e.g. when the onset of illness is related to recent swimming.<br>If there is spreading cellulitis or the patient is systemically unwell consider oral **flucloxacillin** or referral to hospital. |

## Otitis media (acute)

| | |
|---|---|
| ***Management*** | **Antibiotic treatment is usually unnecessary**.<br>Consider antibiotics for those at high risk such as children with systemic symptoms, children aged under six months or children aged under two years with severe or bilateral disease.<br>Otherwise treat symptomatically (e.g. paracetamol) and arrange follow up or give a prescription to be dispensed if no improvement in next 24 hours. |
| ***Common pathogens*** | Respiratory viruses, *Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin** 40 mg/kg/day in two to three divided doses (up to 1.5 g daily, or 3 g in adults) for five days (seven to ten days if age < two years, underlying medical condition, perforated ear drum, chronic or recurrent infections)<br>N.B. Some clinicians recommend 80 mg/kg/day to cover *Streptococcus pneumoniae* resistant strains |
| ***Alternatives*** | **Erythromycin**, **co-trimoxazole** or **cefaclor** |

## Ear, nose and throat (continued)

### Pharyngitis

| | |
|---|---|
| ***Management*** | **Most pharyngitis is of viral origin.** The only benefit from treating *Streptococcus pyogenes* pharyngitis is to prevent rheumatic fever, therefore antibiotic treatment should not be given to people with a low risk of this complication.<br>There is a significantly increased risk of rheumatic fever if the patient; has a history of past rheumatic fever, is of Māori or Pacific ethnicity, or is resident in a lower socioeconomic area of the North Island, and is aged 3-45 years. Patients who fulfill one or more of these criteria and who have features of group A streptococcus infection; temperature >38°C, no cough, tender cervical nodes, tonsillar swelling or exudates, especially if aged 3-14 years, should have a throat swab cultured and either start empiric antibiotic treatment immediately or if *Streptococcus pyogenes* is isolated from the swab.<br>Avoid amoxicillin due to an increased risk of rash if the patient has glandular fever. |
| ***Common pathogens*** | Respiratory viruses, *Streptococcus pyogenes* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Phenoxymethylpenicillin** adults 500 mg, twice daily, for ten days, children 20 mg/kg/day in two to three divided doses, for ten days<br>**or**<br>stat **IM benzathine** 0.6 MU if <27 kg or 1.2 MU if > 27 kg |
| ***Alternatives*** | **Erythromycin**<br>Cotrimoxazole does not reliably eradicate pharyngeal carriage and should not be used |

### Sinusitis (acute)

| | |
|---|---|
| ***Management*** | Most patients with sinusitis will not have a bacterial infection.<br>The following features increase the likelihood of bacterial infection:<br>• Purulent nasal discharge persisting more than seven days<br>• Facial pain or maxillary tooth ache<br>• Unilateral sinus tenderness<br>• Fever |

| | |
|---|---|
| ***Common pathogens*** | Respiratory viruses, *Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis*, anaerobic bacteria (reflecting extension of dental abscess) |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin** 500 mg, three times daily, for seven days (Child 40 mg/kg/day in two to three divided doses) |
| ***Alternatives*** | **Doxycycline**, **co-trimoxazole** or **cefaclor**<br>If anaerobes suspected, use **amoxicillin clavulanate** |

# Eyes

## Conjunctivitis

| | |
|---|---|
| ***Management*** | Can be allergic, viral or bacterial. Bacterial is more likely if eyelids are very sticky or symptoms are unilateral. Viral is more likely if symptoms start bilaterally. Most bacterial conjunctivitis is self-limiting and two-thirds of cases improve without treatment in two to five days. In newborns, consider *Chlamydia trachomatis* or *Neisseria gonorrhoeae*, in which case topical therapy is inadequate and referral to a paediatrician is recommended.<br>Assess for keratitis (using fluorescein stain) in contact lens wearers before treating as conjunctivitis. |
| ***Common pathogens*** | Viruses, *Streptococcus pneumoniae, Haemophilus influenzae, Staphylococcus aureus*<br>Less commonly *Chlamydia trachomatis* or *Neisseria gonorrhoeae* |
| ***Antibiotic treatment*** | |
| ***First choice*** | Topical **chloramphenicol** until 48 hours after signs of infection have cleared |
| ***Alternatives*** | Topical **fusidic acid** or topical **framycetin** |

# Skin

## Bites and clenched fist infections*

| | |
|---|---|
| ***Management*** | Clean and debride wound thoroughly and treat with antibiotic.<br>Assess need for tetanus immunisation.<br>Consider referral if bone or joint involvement. |
| ***Common pathogens*** | Polymicrobial infection, *Pasteurella multocida*, *Capnocytophaga canimorsus* (cat and dog bites), *Eikenella corrodens* (fist injury), *Staphylococcus aureus*, streptococci and anaerobes |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin clavulanate** 500/125 mg, three times daily, for five to ten days |
| ***Alternatives*** | **Metronidazole** plus either **doxycycline** or **co-trimoxazole** |

* Injury to fist from contact with teeth

## Boils

| | |
|---|---|
| ***Management*** | Most lesions may be treated with incision and drainage alone.<br>Antibiotics may be considered if fever, surrounding cellulitis or co-morbidity, e.g. diabetes, or if the lesion is in a site associated with complications, e.g. face.<br>If recurrent boils, e.g. more than ten boils over more than three months, do a nasal swab and if indicated by results, perform staphylococcal decolonisation with a one week course of intranasal mupirocin or fusidic acid. The patient should be advised to shower daily using triclosan body wash, as well as hot drying, ironing or bleaching towels, sheets and underclothes for the duration of treatment. Consider other household contacts. |
| ***Common pathogens*** | *Staphylococcus aureus*<br>Consider MRSA if there is a lack of response to flucloxacillin. |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Flucloxacillin** 500 mg, four times daily, for seven to ten days |
| ***Alternatives*** | **Erythromycin**, **co-trimoxazole** |

## Cellulitis

| | |
|---|---|
| ***Management*** | Keep affected area elevated and assess response to treatment. May require referral if severe.<br>For periorbital cellulitis, in all but very mild cases consider referral for IV antibiotics. |
| ***Common pathogens*** | *Streptococcus pyogenes, Staphylococcus aureus,* Group C or Group G streptococci |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Flucloxacillin** 500 mg, four times daily, for seven to ten days (the addition of penicillin is not required) |
| ***Alternatives*** | **Erythromycin**, **roxithromycin**, **cefaclor** or **co-trimoxazole** |

## Diabetic foot infections

| | |
|---|---|
| ***Management*** | Referral may be required to determine whether infection involves the bones of the feet. If present this requires prolonged treatment with intravenous antibiotics. |
| ***Common pathogens*** | Early infection is usually due to *Staphylococcus aureus* and/or streptococci. Later infection may be polymicrobial with a mixture of gram-positive cocci, gram-negative bacilli and anaerobes. |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Amoxicillin clavulanate** 500/125 mg, three times daily, for five to ten days |
| ***Alternatives*** | **Cefaclor** or **co-trimoxazole** plus **metronidazole** |

## Impetigo

| | |
|---|---|
| ***Management*** | Remove crusted area and apply topical antibiotic ointment. Keep affected areas covered and stay away from school or preschool for 24 hours after treatment initiated. |
| ***Common pathogens*** | *Streptococcus pyogenes, Staphylococcus aureus* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Fusidic acid cream** for seven days |
| ***Alternatives*** | **Flucloxacillin** (oral) for seven days for extensive lesions or topical treatment failure |

**Skin** (continued)

| Mastitis | |
|---|---|
| ***Management*** | Treat with antibiotic and continue to breast feed from both breasts. This is an important component of treatment and poses no risk to the infant. |
| ***Common pathogens*** | *Staphylococcus aureus* in lactating women, anaerobes in non-lactating women or in men |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Flucloxacillin** 500 mg, four times daily, for seven days |
| ***Alternatives*** | **Cefaclor, erythromycin**. Treat non-puerperal mastitis with **amoxicillin clauvulanate** 500/125 mg, three times daily, for seven days |

# Gastrointestinal



| Campylobacteriosis | |
|---|---|
| ***Management*** | **Most people will recover with symptomatic treatment only**.<br>Antibiotics have little impact on the duration and severity of symptoms but eradicate stool carriage.<br>Treatment is indicated for severe or prolonged infection and in pregnant women nearing term. Treatment may also be reasonable in food handlers, childcare workers and those caring for immunocompromised patients.<br>Campylobacteriosis is a notifiable disease. |
| ***Common pathogens*** | *Campylobacter jejuni* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Erythromycin** 250 mg – 500 mg (child 10 mg/kg), three times daily, for five days |
| ***Alternatives*** | **Ciprofloxacin** |

## *Clostridium difficile* colitis

| | |
|---|---|
| ***Management*** | Discontinue or narrow the spectrum of antibiotic treatment when possible. Stopping the antibiotics may lead to clinical resolution of symptoms. Consider referral if evidence of worsening colitis.<br>Antidiarrhoeals, e.g. loperamide, should be avoided as the toxin may be retained and worsen colitis.<br>Relapse may occur after treatment. |
| ***Common pathogens*** | *Clostridium difficile* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Metronidazole** 400 mg, three times daily, for 10 to 14 days |
| ***Alternatives*** | **Vancomycin** (hospital treatment) |

## Giardiasis

| | |
|---|---|
| ***Management*** | Avoid lactose-containing foods for one month after treatment.<br>Giardiasis is a notifiable disease. |
| ***Common pathogens*** | *Giardia lamblia* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Ornidazole** 1.5 g, once daily, for one to two days<br>**or**<br>**Metronidazole** 2 g (child 30 mg/kg), once daily, for three days |
| ***Alternatives*** | For treatment failure:<br>Exclude re-infection from asymptomatic family contacts, e.g. children<br>Use **metronidazole** 400 mg (child 10 mg/kg), three times daily, for seven days |

## Gastrointestinal (continued)

| Salmonellosis | |
|---|---|
| ***Management*** | **Routine treatment with antibiotics is usually unnecessary and may prolong excretion**. Treat in severe disease or immunocompromised patients.<br>Salmonellosis is a notifiable disease. |
| ***Common pathogens*** | *Salmonella enteritidis, Salmonella typhimurium* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Ciprofloxacin** 400 mg, twice daily, for three to five days |
| ***Alternatives*** | **Co-trimoxazole** (400 + 80 mg tablets), two tablets, twice daily, for three to five days |

| Travellers' diarrhoea | |
|---|---|
| ***Management*** | **Mild cases require symptomatic treatment only such as replacement of fluids**. Loperamide may also be used. Antibiotic treatment can be considered for moderate to severe illness. When there are symptoms and signs of invasive infection such as persistent high fever and/or bloody, mucoid diarrhoea, antibiotic treatment should be started after a sample has been sent to the laboratory. Loperamide alone should not be given in such cases. |
| ***Common pathogens*** | *Escherichia coli, Campylobacter jejuni,* Salmonella and Shigella species |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Ciprofloxacin** 400 mg, twice daily, for three days. |
| ***Alternatives*** | **Azithromycin** where quinolone resistance is present (South East Asia); or for pregnant women and young children. |

# Genito-urinary

## Cystitis

| | |
|---|---|
| ***Management*** | Non-pregnant women with uncomplicated cystitis do not require a urine culture. However, those who fail to respond to empiric treatment within two days as well as males, children and pregnant women do require a urine culture.<br><br>Antibiotic therapy is indicated for all people who are symptomatic. Asymptomatic bacteriuria requires antibiotic treatment in pregnant women but not in elderly women or patients with long-term indwelling urinary catheters.<br><br>Treat for longer in pregnant women (seven days) and in men (10 to 14 days). Pregnant women should have repeat urine culture one to two weeks after completing treatment to ensure cure. |
| ***Common pathogens*** | *Escherichia coli, Staphylococcus saprophyticus, Proteus sp., Klebsiella sp., Enterococcus sp.* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Trimethoprim** 300 mg, once daily for three days (avoid during the 1st trimester in pregnancy)<br><br>**or**<br><br>**Nitrofurantoin** 50 mg, four times daily, for five days (avoid at 36+ weeks in pregnancy) |
| ***Alternatives*** | **Norfloxacin** – but should be reserved for isolates resistant to initial empiric choices and avoid during pregnancy |

## Acute pyelonephritis

| | |
|---|---|
| ***Management*** | **Only treat as an outpatient if mild symptoms**, e.g. low fever and no nausea or vomiting. If systemically unwell or vomiting refer for IV treatment.<br><br>A urine culture and susceptibility test should be performed.<br><br>Nitrofurantoin is not an appropriate choice for pyelonephritis. |
| ***Common pathogens*** | *Escherichia coli, Proteus sp., Klebsiella sp., Enterococcus sp.* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Ciprofloxacin** 500 mg, twice daily, for seven days |
| ***Alternatives*** | **Co-trimoxazole** 400+80 mg, two tablets, twice daily, for 10 to 14 days **or amoxicillin clavulanate** 500/125 mg, three times daily, for 10 to 14 days **or cefaclor** 500 mg, three times daily, for 10 to 14 days |

## Genito-urinary (continued)

### Chlamydia

| | |
|---|---|
| ***Management*** | Sexual partners of a person who has tested positive for chlamydia should also be treated. A test of cure should be done at four weeks post treatment in rectal infection, in pregnant women and when amoxicillin or erythromycin is used.<br>Repeat STI screen in three months for patients with confirmed chlamydia. |
| ***Common pathogens*** | *Chlamydia trachomatis* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Azithromycin** 1 g stat (not licensed for use in pregnancy in New Zealand but clinical experience and studies suggest it is safe and effective) |
| ***Alternatives*** | **Doxycycline** 100 mg, twice daily, for seven days (do not use in pregnancy or breast feeding) **or amoxicillin** 500 mg, three times daily, for seven days **or** if allergic to penicillin, **erythromycin ethyl succinate** 800 mg, four times daily, for seven days |

### Gonorrhoea

| | |
|---|---|
| ***Management*** | Sexual partners of a person who has tested positive for gonorrhoea should also be treated. Test of cure is not usually required as standard treatment is >95% effective (provided compliant and asymptomatic after treatment).<br>As co-infection with chlamydia is very common, azithromycin is also routinely given. |
| ***Common pathogens*** | *Neisseria gonorrhoeae* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Ceftriaxone** 250 mg IM stat<br>**and**<br>**Azithromycin** 1 g stat<br>(including in pregnancy and breastfeeding) |
| ***Alternatives*** | If the isolate is known to be ciprofloxacin sensitive, a 500 mg stat dose of **ciprofloxacin** can be used. Resistance rates vary by location. |

## Trichomoniasis

| | |
|---|---|
| ***Management*** | **Sexual partners of a person who has tested positive for trichomoniasis should also be treated, even if asymptomatic.** N.B. culture is seldom positive in males even if infection present. |
| ***Common pathogens*** | *Trichomonas vaginalis* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Metronidazole** 400 mg, twice daily, for seven days<br>**or**<br>**Metronidazole** 2 g stat<br>The single dose has the advantage of improved compliance but there is some evidence to suggest that the failure rate is higher. |
| ***Alternatives*** | In pregnancy and breast feeding use **metronidazole** 400 mg, twice daily, for seven days.<br>The single dose regimens are avoided because they may result in higher serum concentrations which can reach foetal circulation. |

## Bacterial vaginosis

| | |
|---|---|
| ***Management*** | **Treatment of asymptomatic woman is unnecessary unless an invasive procedure is planned**, e.g. IUCD insertion, termination of pregnancy. |
| ***Common pathogens*** | *Gardnerella vaginalis, Bacteroides, Peptostreptococci, Mobilunculus* and others |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Metronidazole** 2 g stat<br>**or**<br>**Metronidazole** 400 mg, twice daily, for seven days |
| ***Alternatives*** | In pregnancy and breast feeding use **metronidazole** 400 mg, twice daily, for seven days.<br>The single dose regimens are avoided because they may result in higher serum concentrations which can reach foetal circulation. |

## Genito-urinary (continued)

### Acute non-specific urethritis

| | |
|---|---|
| ***Management*** | Non-specific urethritis is a diagnosis of exclusion. A urethral swab and first void urine sample should be taken to exclude gonorrhoea and chlamydia. Treat sexual contacts. |
| ***Common pathogens*** | Urethritis not attributable to *Neisseria gonorrhoeae* or *Chlamydia trachomatis* is termed non-specific urethritis and there may be a number of organisms responsible, e.g. *Ureaplasma urealyticum, Mycoplasma genitalium, Trichomonas vaginalis* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Azithromycin** 1 g stat<br>If purulent discharge, treat as for gonorrhoea, i.e. **ceftriaxone** 250 mg IM stat and **azithromycin** 1g stat |
| ***Alternatives*** | **Doxycycline** 100 mg, twice daily, for seven days |

### Pelvic inflammatory disease

| | |
|---|---|
| ***Management*** | May include pelvic exam, testing for chlamydia, gonorrhoea and trichomonas, pregnancy test and consider CBC and CRP.<br>In pregnant women, referral for specialist assessment is indicated. Hospital admission may be required for IV antibiotics.<br>If a patient has an IUCD, the decision to remove the IUCD should be made depending on individual circumstances. Evidence suggests that treatment of pelvic inflammatory disease can be successful in the presence of an IUCD. |
| ***Common pathogens*** | *Chlamydia trachomatis, Neisseria gonorrhoeae* and others |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Ceftriaxone** 250 mg IM stat<br>**and**<br>**Doxycycline** 100 mg twice daily, for two weeks<br>**and**<br>**Metronidazole** 400 mg twice daily, for two weeks |
| ***Alternatives*** | **Azithromycin** 1 g stat can be used instead of doxycycline (if chlamydia present) particularly if compliance is likely to be poor |

| Epidiymo-orchitis | |
|---|---|
| ***Management*** | Test for chlamydia, gonorrhoea and UTI<br>Bed rest, analgesics and scrotal elevation are recommended |
| ***Common pathogens*** | Majority due to *Chlamydia trachomatis* or *Neisseria gonorrhoeae.* Also *E. coli, Bacteroides* species, *Gardnerella vaginalis, Mycoplasma hominis, Ureaplasma urealyticum, Trichomonas vaginalis, Streptococcus agalactiae* and others |
| ***Antibiotic treatment*** | |
| ***First choice*** | If STI pathogens suspected:<br>**Ceftriaxone** 250 mg IM stat<br>**and**<br>**Doxycycline** 100 mg, twice daily, for at least two weeks<br><br>If UTI pathogens suspected:<br>**Amoxicillin clavulanate** 500/125 mg, three times daily for two to three weeks<br>**or**<br>**Ciprofloxacin** 500 mg, twice daily, for 10–14 days |
| ***Alternatives*** | None |

# CNS

| Bacterial meningitis | |
|---|---|
| ***Management*** | Immediately refer suspected cases of meningococcal disease. Give benzylpenicillin or any available parenteral antibiotic before transport to hospital. |
| ***Common pathogens*** | *Neisseria meningitidis, Streptococcus pneumoniae*<br>Less common:<br>*Listeria monocytogenes, Haemophilus influenzae* |
| ***Antibiotic treatment*** | |
| ***First choice*** | **Benzylpenicillin** 1.2 g (child – 50 mg/kg) IV or IM |
| ***Alternatives*** | **Amoxicillin** 1 to 2 g (child – 50 to 100 mg/kg) IV or IM<br>**Ceftriaxone** 50 mg/kg up to 2 g IV or IM |

# Notes

## Erythromycin

Erythromycin base, stearate or estolate 250 mg = erythromycin ethyl succinate 400 mg

Erythromycin ethyl succinate may be associated with fewer adverse gastrointestinal effects compared to the other salts and the base. Gastrointestinal effects are dose related and appear to be more common in young than in older patients.

## Doxycycline

Doxycycline should be taken with food with a full glass of water to avoid oesophagitis. Photosensitivity reactions may occur. Avoid in children (tooth discoloration) and in pregnancy.

## Cefaclor

Cefaclor has been associated with serum-sickness-like reactions especially in young children, and typically after several courses. Features include skin reactions and arthralgia.

## Metronidazole

Avoid alcohol

## Flucloxacillin or Phenoxymethylpenicillin

Take at least one hour before meals and at least two hours after meals.

ACKNOWLEDGEMENT: Thank you to **Associate Professor Mark Thomas**, Infectious Disease Specialist, School of Medical Sciences, University of Auckland and **Dr Rosemary Ikram**, Clinical Microbiologist, MedLab South for expert guidance in producing this booklet.

# Bibliography


1. Australian Medicines Handbook. Adelaide; Australian Medicines Handbook Pty Ltd, 2006.
2. British Medical Association and the Royal Pharmaceutical Society. BNF 61. London: Royal Pharmaceutical Society, 2011.
3. Ellis-Pegler R, Thomas M. Approaches to the management of common infections in general practice. Auckland; Diagnostic Medlab, 2003.
4. Everts R. Antibiotic guidelines for primary care, Nelson and Marlborough Districts 2007-2008.
5. Lang S, editor. Guide to pathogens and antibiotic treatment. 7th ed, Auckland; Diagnostic Medlab 2004.
6. Lang S, Morris A, Taylor S, Arroll B. Management of common infections in general practice: Part 1. NZ Fam Phys 2004;31(3):176-8.
7. Lang S, Morris A, Taylor S, Arroll B. Management of common infections in general practice: Part 2. NZ Fam Phys 2004;31(4):258-60.


NOTES