



Antibiotic Guidelines-Cephalosporins, Quinolones and Co-Amoxiclav

The aims of using antibiotics is to provide a simple, effective, economical and empirical approach to the treatment of common infection and to minimise the emergence of bacterial resistance in the community.

Principals of treatment in relation to cephalosporins, quinolones and co-amoxiclav

- Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics (e.g. co-amoxiclav, quinolones, and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase the risk of *Clostridium difficile*, MRSA and resistant UTIs. Where possible, avoid quinolones in pregnancy.

Clostridium difficile Infections: Prevention and Reduction

- Antibiotic use is the most significant and frequently reported predisposing risk factor for *C. difficile* associated diarrhoea (CDAD) in hospital and community settings. Proliferation of *C. diff* is most likely to occur with those antibiotics which have an effect on normal GI flora including cephalosporins.
- Current evidence indicates that second or third generation cephalosporins, (e.g. cefuroxime, cefixime, cefotaxime, ceftriaxone) are significantly more likely to provoke CDAD. Studies from North America have specifically identified the role of quinolones in *C. diff* outbreaks. There is also increasing evidence for the implication of fluoroquinolones, first-generation cephalosporins (e.g. cephalixin) and co-amoxiclav. These antibiotics should be used sparingly, especially for the elderly, for patients in institutions with CDAD, and in patients previously diagnosed and treated for CDAD.

Please note doses given re for adults, please refer to the BNFc for paediatric doses.

	ILLNESS	COMMENTS	DRUG	ADULT DOSE	DURATION OF TREATMENT
Do not prescribe co-amoxiclav to people with: <ul style="list-style-type: none"> A true penicillin hypersensitivity. Gastrointestinal adverse effects alone (such as nausea, vomiting, or diarrhoea) do not constitute an allergy to penicillin. History of penicillin-associated hepatic dysfunction. Prescribe co-amoxiclav with caution in people with: <ul style="list-style-type: none"> A history of allergic reaction to penicillins. Hypersensitivity to cephalosporins. Mononucleosis — use is not recommended due to increased risk of erythematous skin rash. Cytomegalovirus infections. Acute or chronic lymphocytic leukaemia. Hepatic impairment. Renal impairment: reduce the dose of co-amoxiclav if creatinine clearance is 30 mL/min or less. 					
Co-amoxiclav	Acute Rhinosinusitis	In persistent infection use an agent with anti-anaerobic activity e.g. co-amoxiclav	For persistent symptoms only after failure of first line agents: co-amoxiclav	625mg TDS	7 days
	Acute exacerbation of COPD	Treat exacerbations promptly with antibiotics if purulent sputum and increased shortness of breath and/or increased sputum volume.	Only if resistance: co-amoxiclav	625mg TDS	5 days unless severe COPD FEV1 < 50% or actively managed in secondary care then 7 days
	UTI in children	Upper UTI only -see below			
	Acute pyelonephritis	If admission not needed, send MSU for culture & susceptibility and start antibiotics If no response within 24 hours, admit If ESBL risk and with microbiology advice consider IV antibiotic via outpatients (OPAT)	ciprofloxacin or co-amoxiclav	500mg BD 500/125mg TDS	7 days 7 days
	Cellulitis-facial	For adults with mild facial cellulitis that does not require admission	co-amoxiclav	500/125mg TDS	All for 7 days.
	Bites (human or animal)	Thorough irrigation is important Assess risk of tetanus, HIV, hepatitis B&C Antibiotic prophylaxis is advised Assess risk of tetanus and rabies Give prophylaxis if cat bite/puncture wound; bite to hand, foot, face, joint, tendon, ligament; immunocompromised/ diabetic/asplenic/ cirrhotic/ presence of prosthetic valve or prosthetic joint	Prophylaxis or treatment: co-amoxiclav Review at 24 & 48hrs	375-625mg TDS ^C	All for 7 days



	ILLNESS	COMMENTS	DRUG	ADULT DOSE	DURATION OF TREATMENT
Cephalosporins should given cautiously to penicillin-sensitive people. The British National Formulary advises that about 10% of penicillin-sensitive people will also be allergic to cephalosporins					
Cephalosporin	UTI in pregnancy	Send MSU for culture and start antibiotics Short-term use of nitrofurantoin in pregnancy is unlikely to cause problems to the foetus Avoid trimethoprim if low folate status or on folate antagonist (e.g. antiepileptic or proguanil)	Third line only: cefalexin	500mg BD	7 days
	UTI in children	Child <3 mths: refer urgently for assessment Child ≥ 3 mths: use positive nitrite to guide Start antibiotics, <u>also</u> send pre-treatment MSU. Imaging: only refer if child <6 months, or recurrent or atypical UTI	Lower UTI: Second line only: cefalexin Upper UTI: co-amoxiclav Second line: cefixime	3 days 7-10 days	
	Suspected meningococcal disease	Transfer all patients to hospital immediately. If time before hospital admission, and non-blanching rash, give IV benzylpenicillin, if the patient has a history of anaphylaxis give IV cefotaxime	Penicillin anaphylaxis; IV or IM cefotaxime	Age 12+ years: 1gram Child < 12 yrs: 50mg/kg	(give IM if vein cannot be found)

Quinolones-General prescribing advice.

The BNF and the BNFc state that quinolones are generally not recommended in children and growing adolescents because they cause arthropathy in the weight-bearing joints of immature animals, but that the significance of this effect in humans is uncertain. However, they may be used where the benefit is considered to outweigh the potential risks. The consensus view of BSAC is that ciprofloxacin is 'safe for use in children, and that the benefits of use outweigh any risk in this specific situation' [British Society for Antimicrobial Chemotherapy, Personal Communication, 2010].

Avoid quinolones in people with a history of tendon disorders related to quinolones, or a history of seizures or conditions that predispose to seizures.

Avoid the use of nonsteroidal anti-inflammatory drugs with quinolones, because of an increased risk of convulsions.

Advise patients to discontinue treatment with quinolones and seek immediate medical advice if joint or tendon pain should occur, because tendon damage (including rupture) has been reported rarely in people receiving quinolones.

Quinolones	Acute prostatitis	Send MSU for culture and start antibiotics 4-wk course may prevent chronic prostatitis Quinolones achieve higher prostate levels	Ciprofloxacin <i>or ofloxacin</i>	500mg BD 200mg BD	28 days 28 days
	Eradication of H. Pylori	Relapse and previous Metronidazole & clarithromycin: use PPI PLUS amoxicillin, PLUS either tetracycline or levofloxacin Retest for H. pylori post DU/GU or relapse after second line therapy: using breath or stool test OR consider endoscopy for culture and susceptibility	Only for relapse after initial treatment with MZ + clari: PPI WITH amoxicillin PLUS tetracycline OR levofloxacin	TWICE DAILY 1g BD 500mg QDS 250mg BD	<i>All for</i> 7 days
	Travellers Diarrhoea –PRIVATE SCRIPT	Only consider standby antibiotics for remote areas or people at high-risk of severe illness with travellers' diarrhoea If standby treatment appropriate give: ciprofloxacin 500mg twice a day for 3 days (private Rx). If quinolone resistance high (eg south Asia): consider bismuth subsalicylate (Pepto Bismol) 2 tablets QDS as prophylaxis or for 2 days treatment			
	Epididymitis	For suspected epididymitis in men over 35 years with low risk of STI (High risk, refer GUM)	Epididymitis: low STI risk: ofloxacin <i>or</i> doxycycline	200mg BD 100mg BD	14 days 14 days
	Pelvic Inflammatory Disease	Refer woman and contacts to GUM service. Always culture for gonorrhoea and chlamydia 28% of gonorrhoea isolates now resistant to quinolones. If gonorrhoea likely (partner has it, severe symptoms, sex abroad) use ceftriaxone regimen or refer to GUM.	metronidazole PLUS ofloxacin <i>If high risk of gonorrhoea</i> Ceftriaxone PLUS Metronidazole PLUS doxycycline	400mg BD 400mg BD 500mg IM 400mg BD 100mg BD	14 days 14 days Stat 14 days 14 days

For more detailed information please refer to the full HPA Antibiotics guideline document available at;

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