Canterbury District Health Board
Te Poari Hauora ō Waitaha

Antimicrobial Stewardship Bulletin

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Cephalosporins – confusion, restrictions & resistance

Cephalosporins cause confusion often. Their names look-alike and sound-alike increasing the risk of errors **(green box).** They have various prescribing restrictions that differ in and out of hospital making it hard to know what may be prescribed **(blue box)**. They also have different spectra of antibacterial activity meaning that it is often challenging to match choice of drug with organism or indication **(example in the pink box).** Please use the "start smart then focus" approach to antimicrobial choices – use CDHB empiric antimicrobial guidelines in the Pink Book (2014) to guide initial treatment then change to targeted therapy when susceptibility results are available.

Cephalosporin confusion

Watch out for look-alike, sound-alike names

- Errors involving drugs with "look-alike, sound-alike" names are common, and occur at prescribing, selection and administration levels.
- Ensure that you have selected the correct drug.
- CDHB policy is that drug names on inpatient prescriptions should be generic, legible and in capitals
  eg. CEFAZOLIN 1 g iv q8h
- See the Pink Book (2014) inside cover for information on inpatient charting.

PHARMAC funding restrictions

- The following restrictions are PHARMAC rules unless specified as a CDHB guideline.
- Both PHARMAC rules and CDHB guidelines are consistent with stewardship principles ie. limiting unnecessary use of broad spectrum antimicrobials unless clearly indicated.

	HOSPITAL	COMMUNITY
FIRST GENERATION		
cefazolin	No restrictions	Injection: For dialysis or cellulitis in a CDHB protocol**
cefalexin*	No restrictions	Oral suspension: 14 days maximum/script Oral capsules: No restrictions
SECOND GENERATION		
cefuroxime*	No restrictions	Oral tablets: For endocarditis prophylaxis**¶ Injection: One/script unless for dialysis or cystic fibrosis**
cefaclor*	No restrictions	No restrictions
THIRD GENERATION		
cefotaxime	CDHB: consultant script/ recommendation only	Not subsidised
ceftazidime	ID/Respiratory/Microbiology approval required	Not subsidised
ceftriaxone	CDHB: consultant script/ recommendation only	For dialysis, cystic fibrosis, pelvic inflammatory disease or gonorrhoea; or meningitis in patients with penicillin allergy**
FOURTH GENERATION		
cefepime	ID/Microbiology approval required	Not funded

**Available in oral formulations. **Endorse script accordingly ¶For discharge scripts for other indications refer to pharmacy for advice ID = Infectious Diseases*

Community acquired septicaemia without apparent source – *which cephalosporin?*

- CDHB guidelines (Pink Book, 2014, p134) for empiric treatment of community acquired sepsis (non-neutropenic) without source are:

cefuroxime 1.5 g iv 8 hourly*
PLUS
gentamicin 7 mg/kg iv 24 hourly initially*
(add metronidazole 500 mg iv 8 hourly if intra-abdominal source suspected)

- **Dose:** Most patients should receive a dose of gentamicin 7 mg/kg iv and cefuroxime 1.5 g iv 8 hourly*.
- **Renal function:** Do not wait for a serum creatinine to come back from the lab before starting treatment (consider previous renal function test results if readily available). In sepsis, it is better to overdo the initial dose and individualise subsequent treatment than to underdose from the outset. Get 2 blood samples for gentamicin concentrations to help tailor ongoing therapy (Pink Book (2014) p161).
- **Consult Infectious Diseases** (ID acute phone via the switch board) for patients with chronic renal failure (CrCl < 30 mL/min) and those known to be colonized with multidrug resistant organisms.

Cefuroxime *vs* ceftriaxone

Cefuroxime plus gentamicin covers the most likely bacteria involved – *S. aureus, E. coli, S. pyogenes* and pneumococci. Do not use ceftriaxone for empiric treatment of community acquired sepsis. Ceftriaxone is too broad spectrum in this setting and unnecessarily increases the likelihood of multi-drug resistant organisms and *C. difficile* infections.

**This is slightly different to the current Pink Book (2014) which provides a dose range of 750 mg – 1.5 g iv 8 hourly for cefuroxime and 5 – 7 mg/kg iv 24 hourly for gentamicin.*