

### Listeria meningitis:

- For meningitis due to *Listeria monocytogenes*, penicillin and amoxy/ampicillin appear equally efficacious. Use:

(i) benzylpenicillin 2.4 g (child: 60 mg/kg up to 2.4 g) IV, 4-hourly  
OR

(ii) amoxy/ampicillin 2 g (child: 50 mg/kg up to 2 g) IV, 4-hourly.

- In patients hypersensitive to penicillin, trimethoprim+sulfamethoxazole may be used alone:

(i) trimethoprim+sulfamethoxazole 160+800 mg (child: 4+20 mg/kg up to 160+800 mg) IV, 6-hourly.

- There is limited evidence that combination therapy with beta lactam plus trimethoprim+sulfamethoxazole improves outcomes. The value of adding an aminoglycoside is not clear.

- The usual duration of therapy is 3 weeks, with extension to 6 weeks in immunocompromised patients.

Oral therapy with trimethoprim+sulfamethoxazole may be used to complete the course after initial 3 weeks if there has been a good response to IV therapy.

### Group B strep meningitis

- *Streptococcus agalactiae* is the commonest cause of meningitis in the newborn. Use:

(i) benzylpenicillin 60 mg/kg up to 2.4 g IV, 4-hourly for 14 to 21 days.

### Cryptococcal meningitis:

- Cryptococcal meningitis is caused either by *Cryptococcus neoformans* (particularly in immunocompromised patients) or *Cryptococcus gattii* (previously known as *C. neoformans* var. *gattii*).

- Monitoring of CSF pressure is a critical part of management to ensure that communicating hydrocephalus does not develop and cause permanent neurological sequelae. Consultation with those experienced in the management of this condition is strongly recommended.

- The standard treatment for cryptococcal meningitis is:

(i) amphotericin B desoxycholate 0.7 mg/kg IV, daily (dosage to be adjusted according to tolerance) for 6 to 10 weeks

PLUS

(ii) flucytosine 25 mg/kg IV or orally, 6-hourly for 6 to 10 weeks (monitor plasma levels)

- Patients infected with *Cryptococcus gattii* may be slower to respond and require a longer treatment course. Alternatively, if the CSF is culture negative after 2 weeks of therapy, cease the amphotericin B desoxycholate and flucytosine and commence:

(i) fluconazole 800 mg (child: 20 mg/kg up to 800 mg) orally or IV for the first dose, then 400 mg (child: 10 mg/kg up to 400 mg) orally, daily for at least 10 weeks of therapy. □

- Itraconazole has been successfully used when fluconazole cannot be used.

- In the immunocompromised, long-term suppressive therapy may be required. If there has been a successful response after 10 weeks of fluconazole at the above dose, reduce the dose to:

(i) fluconazole 200 mg (child: 5 mg/kg up to 200 mg) orally, daily indefinitely as secondary prophylaxis.

bacterial  
meningitis  
- directed  
therapy  
[created  
by Paul  
Young  
27/11/07]

### Meningococcal meningitis:

- for *Neisseria meningitidis* (meningococcal meningitis), use:

(i) benzylpenicillin 1.8 g (child: 45 mg/kg up to 1.8 g) IV, 4-hourly for 3 to 5 days. □

- For patients hypersensitive to penicillin (excluding immediate hypersensitivity), use:

(i) ceftriaxone 4 g (child: 100 mg/kg up to 4 g) IV, daily for 3 to 5 days  
or ceftriaxone 2 g (child: 50 mg/kg up to 2 g) IV, 12-hourly for 3 to 5 days

OR

(ii) cefotaxime 2 g (child: 50 mg/kg up to 2 g) IV, 6-hourly for 3 to 5 days.

- For patients with immediate penicillin or cephalosporin hypersensitivity, use:

(i) ciprofloxacin 400 mg (child: 10 mg/kg up to 400 mg) IV, 12 hourly for 3 to 5 days. □

- Prophylaxis and/or immunisation is essential for close contacts (see chemoprophylaxis for meningitis). Prophylaxis is also necessary for patients who have received only benzylpenicillin, since this does not reliably clear nasal carriage.

### Streptococcus pneumonia meningitis:

- MICs to penicillin and ceftriaxone/cefotaxime should be determined for all *Streptococcus pneumoniae* isolates. For strains with a penicillin MIC =0.125 mg/L, use vancomycin plus either ceftriaxone or cefotaxime (see Empirical therapy for doses).

- Specialist advice must be sought particularly if the MIC of these cephalosporins is elevated. Rifampicin or moxifloxacin are possible alternatives to vancomycin.

- For penicillin-susceptible strains (MIC <0.125 mg/L), use:

(i) benzylpenicillin 1.8 g (child: 45 mg/kg up to 1.8 g) IV, 4-hourly for 10 to 14 days.

[Very ill patients may require treatment for up to 3 weeks.]

### H. influenzae meningitis:

- For meningitis due to *Haemophilus influenzae* type b, use:

(i) ceftriaxone 4 g (child: 100 mg/kg up to 4 g) IV, daily for 7 days  
or ceftriaxone 2 g (child: 50 mg/kg up to 2 g) IV, 12-hourly for 7 days

OR

(ii) cefotaxime 2 g (child: 50 mg/kg up to 2 g) IV, 6-hourly for 7 days.

- If the organism is proven to be susceptible, use:

(i) benzylpenicillin 2.4 g (child: 60 mg/kg up to 2.4 g) IV, 4-hourly for 7 days

OR

(ii) amoxy/ampicillin 2 g (child: 50 mg/kg up to 2 g) IV, 4-hourly for 7 days.

- For patients with immediate penicillin or cephalosporin hypersensitivity, use:

(i) chloramphenicol 1 g (child: 20 to 25 mg/kg up to 1g) IV, 6-hourly for 7 days

OR

(ii) ciprofloxacin 400 mg (child: 10 mg/kg up to 400 mg) IV, 12-hourly for 7 days