Waterford: Antimicrobial Guidelines - Antimicrobial Guideline: Central Nervous System & ENT

Meningitis

Meningitis

General points

Acute bacterial meningitis is a medical emergency and requires prompt treatment with effective antimicrobials.

- Send CSF for microscopy, culture, biochemistry and PCR (Do not delay antibiotics).
- Send blood cultures, EDTA blood sample for PCR for *S. pneumoniae* & *N. meningitidis* , urinary antigen for *Strep. pneumoniae* .
- Infection with *Neisseria meningitidis* is transmissible to others. Patients suspected to have acute bacterial meningitis require source isolation with contact and droplet transmission-based precautions for a minimum of 24 hours on appropriate antimicrobials.
- In immunocompromised patients please consider other opportunistic pathogens and discuss with infection specialist

Antibiotics (Empiric therapy)

Empiric Dexamethasone phosphate 10mg IV QDS is recommended for acute bacterial meningitis. Continue dexamethasone for 4 days in suspected or proven pneumococcal (*Streptococcus pneumoniae*) or *Haemophilus influenz* ae meningitis, ideally starting before or with the first dose but no greater than 12 hours after initiation of antibiotics. Do not give dexamethasone if suspicion of meningococcal septicaemia or septic shock. Stop corticosteroids if no evidence of pneumococcal or *Haemophilus influenzae* meningitis.

First line: **Ceftriaxone** 2g BD IV.

Add **Vancomycin** if pneumococcal infection suspected (Gram positive diplococci on CSF Gram stain, positive PCR for *S. pneumoniae* or severe infection) to cover for resistant strains until susceptibility test results confirmed. (Please see Vancomycin dosing schedule).

Add **Amoxicillin** 2g 4 hourly IV if risk factors for Listeria infection:

- Age ≥60 years
- Pregnancy
- Immunocompromise
- Alcohol abuse

Penicillin Allergy: Severe / IgE mediated reaction/ anaphylaxis to penicillin:

Chloramphenicol 25mg/kg IV QDS (reduce to TDS after 48h) PLUS **Vancomycin** (Please see Vancomycin dosing schedule)

If Listeria risk and penicillin allergy, use **Co-trimoxazole (trimethroprim-sulfamethoxazole)** 120mg/kg IV daily in 4 divided doses instead of Amoxicillin.

If **viral encephalitis** suspected (see below for clinical features) and add Aciclovir 10mg/kg TDS IV (Use Adjusted Body Weight/Obese Dosing Weight if BMI ≥30kg/m ^{2} as use of actual body weight can lead to overdosing and toxicity. Use of ideal body weight can result in under-dosing). Caution as nephrotoxic and neurotoxic agent.

Comments

- Rationalise empirical antibiotics to pathogen-directed therapy. Discuss all cases with Clinical Microbiologist.
- All treatment should be IV. Do not switch to oral therapy, Treatment duration is pathogen depended and general recommendations as follows:
  - Pneumococcus 10-14 days
  - Meningococcus 7 days
  - *Haemophilus influenzae* 7-10 days
  - *Listeria monocytogenes* 21 days.
- Most cases of **viral meningitis** are caused by Enteroviruses for which there is no effective anti-viral treatment. Some cases of HSV/VZV meningitis for example those occurring in immunosuppressed patients or complicated cases may require treatment with acyclovir - please discuss with Clinical Microbiologist.
- Notify Public Health if suspected meningococcal meningitis as prophylaxis of contacts may be indicated. Also inform contact Occupational Health Dept.
- Please refer to Guidelines for the Early Clinical and Public Health Management of Bacterial Meningitis (including Meningococcal Disease) HPSC 2016 for information on chemoprophylaxis for contacts of meningococcal disease

References

1. McGill F et al. The UK joint specialist societies guideline on the diagnosis and management of acute meningitis and meningococcal sepsis in immunocompetent adults. Journal of Infection. 2016 1;72(4):405-38.
2. Guidelines for the Early Clinical and Public Health Management of Bacterial Meningitis (including Meningococcal Disease). HPSC 2012. Revised 2016.
3. BMJ Best Practice. Bacterial meningitis in adults. Last updated: Jul 18, 2023
4. Van de Beek D et al. Clinical microbiology and infection. 2016 1;22:S37-62.

Viral Encephalitis ■

Acute Epiglottitis

Acute Epiglottitis

General points

Take blood cultures prior to initiation of antimicrobial therapy if possible.

Antibiotics

First line: Ceftriaxone 2g OD IV

If history of MRSA, add **Vancomycin** (Please see Vancomycin dosing schedule).

Penicillin allergy :

NOT IgE mediated reaction/anaphylaxis: as above

Severe IgE mediated reaction/anaphylaxis to penicillin:

* **Levofloxacin** 500mg BD IV **+ Vancomycin** (Please see Vancomycin dosing schedule).

Duration : 10 days. Longer duration may be indicated in selected patients. Consider oral switch when appropriate. Please discuss with Clinical Microbiologist.

* Please read the HPRA Drug Safety Alert issued in 2018 and the HPRA Drug Safety Newsletter issued in 2023 highlighting restrictions on use of fluoroquinolones (eg. ciprofloxacin, levofloxacin) due to the risk of disabling, long-lasting and potentially irreversible side effects (including tendon damage, QT prolongation, neuropathies and neuro psychiatric disorder). Use of fluoroquinolones in older patients, those with renal impairment, solid organ transplantation or on systemic corticosteroids increases the risk of tendon damage.

Tonsillitis / pharyngitis■■

Tonsillitis & Pharyngitis■■

General points

The majority of sore throats are viral.

Send throat swab for culture.

Consider acute EBV infection.

Antibiotics

First line : Phenoxymethylpenicillin (penicillin V) 666mg QDS PO

OR Amoxicillin 500-1g TDS PO

Severe infection : **Benzylpenicillin** 1.2g QDS IV + **Metronidazole** 500mg TDS IV / 400mg TDS PO. Consider oral switch when appropriate.

Penicillin allergy:

Non-IgE mediated : **Cefalexin** 500mg TDS PO

IgE mediated penicillin allergy : **Clarithromycin** 500mg BD PO. (Consider potential for QT prolongation and drug interaction with statins).

Duration : 10 days for Group A streptococcal pharyngitis.

Sinusitis, otitis media■■

Sinusitis

General points

Most cases in the community are viral.

Bacterial cause may be more likely if several of the following are present:

- Symptoms present for more than 10 days
- Discoloured or purulent nasal discharge
- Severe localised unilateral pain (particularly pain over teeth and jaw)
- Fever
- Marked deterioration in clinical features after an initial milder phase

Antibiotics (Empiric therapy)

First line: Amoxicillin 500mg-1g TDS PO/IV

Penicillin allergy : Doxycycline 200mg stat then 100mg once daily PO

Second line : **Co-amoxiclav** 625mg TDS PO or 1.2g TDS IV

Penicillin allergy: Clarithromycin 500mg BD PO (Consider potential for QT prolongation and drug interaction with statins).

Duration : 5-10 days depending on severity and resolution of symptoms.