CNS INFECTION GUIDANCE in ADULTS

NHS Tayside

- Guidance applies to non pregnant **adult** patients only
- All doses assume **normal** renal and hepatic function
- **TREATMENT SHOULD ALWAYS BE ADJUSTED ACCORDING TO MICROBIOLOGY SENSITIVITY RESULTS**

INFECTION	PATHOGEN (S)	EMPIRICAL TREATMENT	COMMENTS
BACTERIAL MENINGITIS – COMMUNITY ACQUIRED Ref: British Infection Association Early Management Flow chart 2016 British Infection Association Guideline on diagnosis and management of acute meningitis and meningococcal sepsis in immunocompetent adults 2016 Locally it is agreed that where any meningitis guidance states ampicillin IV 2g that amoxicillin IV 2g can be substituted. NHS Tayside does not keep ampicillin.	pneumococcus meningococcus *Haemophilus influenzae* occasionally other gram negative bacteria *Listeria spp* if **≥60** years OR immunocompromised (including alcohol dependency and diabetes)	Follow flow chart for initial early management and treatment then: **Ceftriaxone IV 2g bd** (Penicillin allergy: Chloramphenicol IV 25mg/kg qds) + **Dexamethasone IV 10mg qds for 4 days only (3ml of 3.3mg/ml dexamethasone base injection)** • started with or just before first dose of antibiotics. • If antibiotics have already been commenced dexamethasone should be initiated up until 12 hours after the first dose of antibiotics. • If pneumococcal meningitis is confirmed or thought probable, continue dexamethsone for 4 days. • If another cause of meningitis is confirmed or thought probable, the dexamethasone should be stopped. If **listeria cover** required (see pathogen box) then add to above: Amoxicillin IV 2g **4 hourly** (Penicillin allergy: Co-trimoxazole IV 120mg/kg divided into 4 doses/day. For obese patients use adjusted body weight*) If **recent travel** (within last 6 months) to country with high rates of pencillin resistant pneumococci then add: Vancomycin IV (aim for predose level 15-20mg/L) or Rifampicin IV/PO 600mg bd Countries with high rates of pneumococcal resistance: Canada, Pakistan, Mexico, Greece China, Poland, Italy, Turkey Croatia, Spain, USA	**Duration:** **No organism identified but clinical condition consistent with bacterial meningitis:** 10 days if patient has clinically recovered. Request ID consult via email: Tay.id@nhs.scot **Organism identified:** **meningococcus:** Stop dexamethasone.. 5 days ceftriaxone (if patient not recovered by 5 days extend course to 7 days initially and review) **pneumococcus**: 4 days dexamethasone + 10 days ceftriaxone (if patient taking longer to respond extend course up to 14 days) **pencillin/cephalosporin resistant pneumococcus:** 4 days dexamethasone + 14 days ceftriaxone + vancomycin (vancomycin monotherapy not recommended due to concerns re CSF penetration) ***Listeria spp:*** Stop dexamethasone. 21 days of amoxicillin IV minimum ***Haemophilus influenzae:*** Stop dexamethasone. 10 days of ceftriaxone **other gram negative bacteria:** Stop dexamethasone. 21 days of antibiotic regime agreed with ID/Micro **(Consider outpatient IV therapy if patient has had ≥5 days treatment, afebrile and clinically improving)**

TREATMENT SHOULD ALWAYS BE ADJUSTED ACCORDING TO MICROBIOLOGY SENSITIVITY RESULTS

INFECTION	PATHOGEN (S)	EMPIRICAL TREATMENT	COMMENTS
VENTRICULITIS AND MENINGITIS - SHUNT ASSOCIATED OR POST OPERATIVE Ref: IDSA Guidance 2017	*Pseudomonas spp* + other gram negative bacteria *Staph. epidermidis* *Staph. aureus* *Propionibacterium spp*	IV ceftazidime 2g 8 hourly + IV vancomycin (aim for predose level 15-20mg/L) (if known anaphylaxis to penicillin or cephalosporin IV ciprofloxacin 400mg tds + IV vancomycin) Duration: Always discuss with ID/Micro. 10-14 days minimum depending on CSF cultures and clinical condition	Shunt may require to be removed. Intraventricular* vancomycin (20mg daily clamped for 1 hour) may be recommended by ID/Micro if patient has an EVD in place or responds poorly to systemic therapy alone. D/w pharmacist asap, must be prepared in pharmacy aseptic unit. No level monitoring required. If an alternative intraventricular antimicrobial is recommended d/w pharmacist and refer to guidance in table 3 page e54 here.
MENINGITIS - POST TRAUMA	pneumococcus *Haemophilus influenzae* streptococci anaerobes	IV ceftriaxone 2g 12 hourly + IV metronidazole 500mg tds Duration: Always discuss with ID/Micro. 10-14 days minimum depending on CSF cultures and clinical condition	Often upper respiratory tract pathogens
BRAIN ABSCESS	streptococci *Bacteroides spp*	IV ceftriaxone 2g 12 hourly + IV metronidazole 500mg 8 hourly Duration: minimum 4 weeks	Add IV flucloxacillin 2g qds if staphylococcal infection suspected IV vancomycin if penicillin allergic or MRSA proven or suspected (aim for predose level 15-20mg/L)
VIRAL ENCEPHALITIS Ref: BIA Guidance 2012	*Herpes simplex* (HSV) Other viruses	IV aciclovir 10mg/kg 8 hourly Adjust dose in renal impairment see SPC For obese patients use adjusted body weight* 14 days IV treatment, then repeat LP. 21 days if immunocompromised, then repeat LP. If HSV PCR remains positive then continue treatment and weekly PCR until negative.	Perform CT Scan prior to lumbar puncture if clinical contraindication to immediate LP (see ref p352) Offer HIV testing in patients with encephalitis where HSV1 PCR is negative IV treatment only is recommended, switch to oral treatment is not appropriate.
VIRAL MENINGITIS Ref: British Infection Association Guideline on diagnosis and management of acute meningitis and meningococcal sepsis in immunocompetent adults 2016	enteroviruses *Herpes simplex* (HSV) *Varicella zoster* (VZV) paramyxovirus (mumps)	Initial early management and treatment as for community acquired bacterial meningitis. Stop antibacterials, antivirals and steroid treatment if enteroviral or mumps meningitis is diagnosed and manage symptomatically. Continuation of antivirals for HSV/VZV should be discussed with ID/Micro.	Aseptic/lymphocytic meningitis is an indication for HIV testing. HSV2 is usually a sexually transmitted infection consider need for testing for other STIs including HIV.

*adjusted body weight recommended in Sanford Guide, ref: AAC 60:1830,2016)

AdjBW = ideal body weight + 0.4 x (actual body weight – ideal body weight)

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