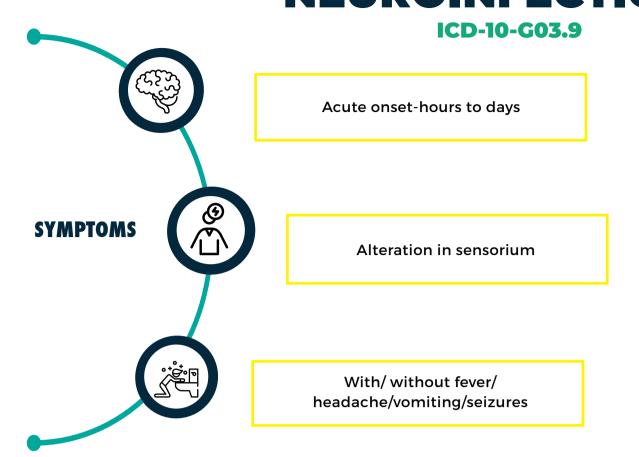




Standard Treatment Workflow (STW) for the Management of **NEUROINFECTIONS**



DIFFERENTIAL DIAGNOSIS

Vascular-ischemic/hemorrhagic stroke

Infections
viral/bacterial/fungal/protozoal meningoencephalits/brain abscess

Metabolic encephalopathies

Seizures/postictal state

Intoxications-drugs/toxins

AT PRIMARY CARE LEVEL

ESSENTIAL

Check Airway/Breathing/Circulation

Rule out circulatory shock, ongoing convulsions and hyperthermia/hyperpyrexia(core temperature > 40.5° C or hypothermia(< 36.5° C)

Establish IV access-urgent blood for hemogram/sugar/electrolytes/malaria testing-peripheral smear/rapid antigen detection

Correct hypoglycemia (blood sugar 50 mg/dl) with IV 100ml of 25% dextrose solution

If seizing- IV/IM Lorazepam 0.1 mg/kg followed by loading with Phenytoin 20 mg/kg weight at a rate of 50 mg/minute

When IV access not available-intra nasal or buccal Midazolam 0.2 mg/kg /intra rectal Diazepam 0.3-0.4 mg/kg

Urgent referral to higher centres with intensive care facilities

NOT RECOMMENDED

- · Stomach wash
- · Inj Mannitol
- · Inj Steroids

CRITERIA FOR REFERRAL

Altered
sensorium/seizures
/focal
deficits/hemodyna
mic instability
-where imaging
and ICU
management are
required.

AT SECONDARY CARE LEVEL(TALUK, DISTRICT) HEADQUARTERS HOSPITAL

In addition to all the steps given above :

ESSENTIAL

Establish and maintain airway: Intubate if GCS<8, impaired airway reflexes, abnormal respiratory pattern, signs of raised ICP, oxygen saturation <92% despite high flow oxygen,

Inj Thiamine 100 mg IV

and fluid refractory shock

Stomach wash/activated charcoal administration-if history or suspicion of drug overdose/non corrosive poison intake

Start treatment for cerebral malaria-first dose of IV Artesunate 2.4 mg/kg OR Quinine 20 mg/kg bolus

Emergency CT/referral to centre with 24 hour CT facilities

DESIRABLE

- Neuroimaging-CT with contrast -to rule out hemorrhage/infarcts/focal edema or lesions
- Blood cultures aerobic/anaerobic
- First dose of empirical treatment of pyogenic meningitis-Inj Ceftriaxone 2 g + Inj Vancomycin 500 mg.
- Add Inj Ampicillin 2 g if older than 50 years / immunocompromised along with Inj Dexamethasone 8 mg
- Fundus examination,CSF study to rule out meningoencephalitis-if imaging rules out any mass lesions/herniations.
- Urgent referral to higher centres with Intensive care facilities

CRITERIA FOR REFERRAL

- · Altered sensorium/seizures/focal deficits/hemodynamic instability -where imaging and ICU management are required.
- · If no definite diagnosis achieved after preliminary investigations

AT TERTIARY CARE HOSPITALS-SELECTED DISTRICT HOSPITALS/MEDICAL COLLEGES

- Neuroimaging-MRI/CT with contrast to rule out abscess/herniations.
- If abscess-emergency neurosurgical consultation for favour of aspiration -open/stereotactic
- · Blood cultures-aerobic/anaerobic
- · CSF analysis-biocehmistry/cytology/gram staining/culture-bacterial , AFB and fungal/viral PCR/TB-PCR/fungal antigen

Empirical antibiotic (within 30 minutes of arrival)

- · If suspecting pyogenic meningitis-Inj Ceftriaxone 2 g+ Inj Vancomycin 500 mg+ Inj Ampicillin 2 g if older than 50 years or immunocompromised+ Inj Dexamethasone 8 mg IV
- Continue empirical treatment till culture yields causative organism, then tailor treatment as per sensitivity reports for 10-14 days.
- Steroids to be stopped after 48 hours, unless any other compelling indications-adrenal insufficiency/TBM

Viral-Herpes simplex/Zoster

Inj Acyclovir500 mg IV8 hourly for10 days

Cerebral malaria

Inj Artesunate 2.4 mg/kg IM or IV 3 doses 12 hours apart and then OD /

Inj Quinine 20 mg/kg IV stat followed by 10mg/kg
TDS till patient can take orally,then

oral Artesunate+Pyrimethamine /Sulphadoxine for 3 days OR oral Quinine 10 mg/kg TDS for total 7 days + Doxycycline 3 mg/kg OD for 7 days.

COMPLICATIONS

Raised ICP SIADH Vasculitis Hydrocephalus

*If uncomplicated-back referral to Secondary care centre for completing treatment regimen/monitoring.

CRITERIA FOR DISCHARGE

Afebrile, hemodynamically stable, seizure free > 48 hours

Diagnosis and treatment plan made and initiated.

Continuation of treatment with monitoring can be ensured for the prescribed duration.

★ KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES