STANDARD TREATMENT WORKFLOW (STW)

Neuroinfections

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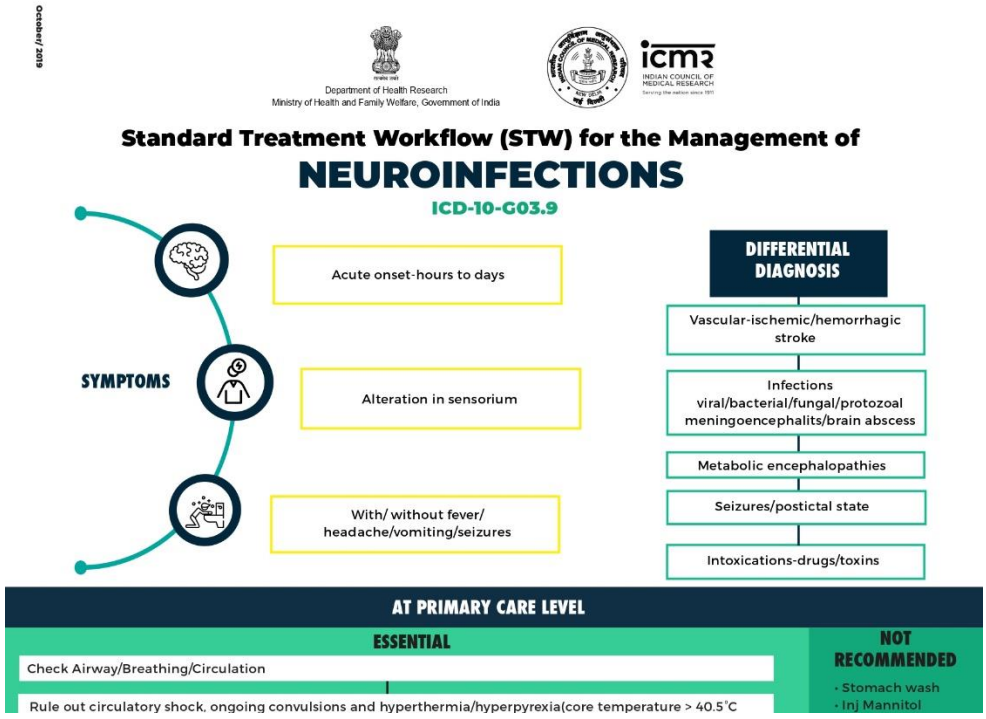


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Standard Treatment Workflow (STW) for the Management of
NEUROINFECTIONS
ICD-10-G03.9
SYMPTOMS
Acute onset-hours to days
Alteration in sensorium
With/ without fever/ headache/vomiting/seizures
DIFFERENTIAL DIAGNOSIS
Vascular-ischemic/hemorrhagic stroke
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
ESSENTIAL
In addition to all the steps given above :
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, and fluid refractory shock
Inj Thiamine 100 mg IV
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 Acyclovir 500 mg IV 8 hourly for 10 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
This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (stw.icmr.org.in) for more information.
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