STANDARD OPERATING PROCEDURE

Neurocysticercosis

Special Region (1)

Union of Myanmar

Version: 1.0

Effective Date: March 2026

Review Date: March 2028

Approved by: Internal Medicine Unit

1. Purpose

To provide a standardized protocol for diagnosis, treatment, and monitoring of neurocysticercosis (NCC) in SR-1 hospitals to reduce morbidity and prevent complications such as seizures and hydrocephalus.

2. Definition

Neurocysticercosis is a central nervous system infection caused by the larval stage (cysticercus) of *Taenia solium*.

3. Clinical Features

Epilepsy, including new-onset focal seizures, personality changes, staggering gait and signs of hydrocephalus, are the most common features.

- Seizures (most common) (70%)
- Focal neurological deficits (20%): motor/sensory loss, language disturbance, involuntary movement
- Raised intracranial pressure (vomiting, papilledema)
- Chronic headache
- Cognitive or behavioral changes
- Hydrocephalus (intraventricular cysts)

4. Classification

- Parenchymal NCC (viable, degenerating, calcified)
- Extraparenchymal NCC (ventricular, subarachnoid)
- Active vs inactive disease

5. Diagnosis

- **Neuroimaging:** CT/MRI (cyst with scolex, ring-enhancing lesions, calcifications). CT is preferred in SR-1 for detecting calcifications.
- **Serology:** EITB (if available)
- **CSF analysis** (for extraparenchymal disease)
- **Diagnostic criteria** (Del Brutto criteria)

Category	Criteria	Key Details / Notes
Absolute Criteria	Histological confirmation	Biopsy showing *Taenia solium* larva
	Cystic lesion with scolex on CT/MRI	Pathognomonic; most important in practice
	Direct visualization of parasite in eye	Subretinal cysticercosis
Major Criteria	Lesions highly suggestive on imaging	Cystic lesions, ring-enhancing lesions, calcifications
	Positive immunological test	EITB (preferred, high specificity)
	Resolution after antiparasitic therapy	Imaging improvement after albendazole
	Spontaneous resolution of lesion	Small enhancing lesions disappearing
Minor Criteria	Clinical features suggestive of NCC	Seizures, headache, focal deficit
	Imaging compatible but not specific	Non-classical lesions
	Positive CSF immunology	ELISA (less specific than EITB)
	Evidence of cysticercosis outside CNS	Muscle or subcutaneous nodules
Epidemiological Criteria	Living in endemic area	e.g., Myanmar, poor sanitation regions
	Exposure to pigs	Direct or environmental exposure
	Household contact with tapeworm carrier	Important transmission clue

Diagnostic Interpretation

Diagnosis Level	Criteria Combination Required
Definitive NCC	1 Absolute criterion OR 2 Major + 1 Minor + 1 Epidemiological
Probable NCC	1 Major + 2 Minor OR 1 Major + 1 Minor + 1 Epidemiological OR 3 Minor + 1 Epidemiological

6. Management

A. Symptomatic Treatment

- **Antiepileptics:** Levetiracetam or valproate
- **Manage raised ICP:** Mannitol, head elevation

B. Antiparasitic Therapy

- **Albendazole:** 15 mg/kg/day in 2 divided doses (max 800 mg/day) for 7-14 days
- **Praziquantel (alternative):** 50 mg/kg/day in 3 divided doses

C. Steroids

Dexamethasone 0.1 mg/kg/day or Prednisolone 1 mg/kg/day, starting 1 day before anti-cysticercosis therapy to reduce inflammation.

Steroid Duration

Type of NCC	Steroid Duration	Taper
Single lesion	5-7 days	3-5 days

Multiple lesions	7-14 days	~1 week
Severe oedema	2-4 weeks	Slow taper
Extra parenchymal	Weeks-months	Very slow taper

D. Surgical Management

- Ventricular NCC → Neurosurgical removal or shunt if hydrocephalus

E. Calcified Lesions

- No antiparasitic therapy; treat seizures only

7. Monitoring

- Clinical response (seizure control)
- Repeat imaging if persistent symptoms
- Monitor steroid side effects
- Antiepileptic drug adherence

8. Special Considerations

- Avoid antiparasitic therapy in uncontrolled ICP
- Multiple lesions → longer treatment may be needed
- Pregnancy: avoid albendazole in 1st trimester
- HIV co-infection: consider immune status

9. Prevention

- Proper cooking of pork
- Hand hygiene

- Sanitation and latrine use
- Treat intestinal tapeworm carriers

References

1. World Health Organization. WHO guidelines on management of *Taenia solium* neurocysticercosis. Geneva: WHO; 2021.
2. Garcia HH, Nash TE, Del Brutto OH. Clinical symptoms, diagnosis, and treatment of neurocysticercosis. *Lancet Neurol*. 2014.
3. Del Brutto OH et al. Revised diagnostic criteria for neurocysticercosis. *J Neurol Sci*. 2017.
4. Centers for Disease Control and Prevention. Neurocysticercosis. CDC; 2024.