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Seizures and Epilepsy

Standard Operating Procedure (SOP)



Union of Myanmar Special region - 1
Pediatric (SOP)

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Union of Myanmar Special region - 1
Pediatric (SOP)

NEUROLOGY

Seizures and Epilepsy

APPROACH TO A CHILD WITH FIRST UNPROVOKED SEIZURES

Definition

- *One or multiple unprovoked seizures within 24 hours with recovery of consciousness between seizures.*
- *30-50% of first unprovoked seizures and 70-80% of second seizures in children will recur.*

Management Outline

- *Detailed history to determine if event is a seizure or a paroxysmal nonepileptic event e.g. syncope, breath holding spell, tics*
- *Open eyes, eyes and head deviation, incontinence, tongue-bite are fairly specific for a seizure, whereas unresponsiveness, confusion, clonic/tonic movements are also suggestive*
- *Thorough clinical examination to look for any possible underlying aetiology e.g. neurocutaneous stigmata*
- *Acute symptomatic seizures or provoked seizure (such as meningitis, encephalitis, hypoglycemia, electrolyte disturbances, acute stroke, hypertensive encephalopathy) should also be excluded (Refer Page-189 Acute symptomatic seizure)*

Investigations

- *Should be individualized, especially for causes of acute symptomatic seizures*
- *Investigations such as U&E, Ca^{++} , Mg^{++} , especially if under 1 year old or signs and symptoms suggestive of biochemical disorder*
- *Lead screening if clinically and epidemiologically suggestive*
- *FBC and lumbar puncture indicated if there is suspicion of CNS infection*
- *EEG is not indicated for first unprovoked seizure and it should be performed after the second epileptic seizure*
- *12-lead ECG should be considered in cases of diagnostic uncertainty*
- *Neuroimaging (MRI preferred) indicated for:*
 - *Focal deficits*
 - *Altered sensorium*
 - *Raised ICP*
- *Is treatment required?*

- *Long term treatment with antiepileptic drug (AED) is generally NO] (indicated in first unprovoked seizure as it does not prevent development of epilepsy or influence long term remission*
- *Long term treatment after first unprovoked seizure can be considered if chance of seizure recurrence is high (should have specialist opinion)*

ACUTE SYMPTOMATIC SEIZURE

- *Clinical seizure occurring in close temporal relationship with an acute central nervous system insult, which may be metabolic, structural, infectious or inflammatory*
- *Compared with unprovoked seizures, acute symptomatic seizures are associated with higher mortality but a significantly lower risk of seizure recurrence.*

Causes of Acute Symptomatic Seizures in Children

- *CNS infection – Meningitis, encephalitis, cerebral malaria, brain abscess*
- *Immune mediated encephalitis*
- *Metabolic causes – Hypoglycemia and electrolyte disturbances*
- *Head injury*
- *Cerebrovascular diseases – Infarct, vasculitis, hemorrhage*
- *Hypertensive encephalopathy*
- *Major organ failure*
- *Intoxication*

Management

- *The management priority is treatment of the underlying etiology.*
- *Investigations should be guided by the history but imaging is essential in many cases; and should have a low threshold for lumbar puncture.*
- *Temporary use of AEDs may help suppress seizures while the underlying etiology is still active; however, there is little evidence that this reduces the risks of subsequent epilepsy.*
- *Benzodiazepines, including diazepam, lorazepam, midazolam, and clonazepam, are often used for isolated symptomatic seizures before long. term treatment decisions are made.*
- *AEDs those have both parenteral and oral preparations are also preferred to continue with oral route for certain period.*
- *Duration of AED therapy*
 - *When the acute condition is readily treatable (e.g. toxic state) and the target outcome is acute seizure prevention, the data support the use of AED for 7 days.*
 - *If the primary cause of the acute condition takes time to treat (e.g.. CNS infection), or it is expected to re-emerge shortly (e.g. SLE, or recurrent metabolic insults), the AED*

duration may be extended at least for the period of resolution or stabilization of acute CNS insult (e.g. 1-6 months).

- *Long term AED treatment is reserved for those with residual structural abnormalities on MRI. Rates of epilepsy are highest following severe head injury and following viral encephalitis justifying a more cautious approach to AED withdrawal in these contexts.*
- *In all cases, the decision to start treatment, and how long to continue treatment, must be individualized.*