FEBRILE SEIZURES

DEFINITION

Febrile seizures are seizures that occur between the age of 6 and 60 months with a temperature of 38°C or higher, that are not the result of central nervous system infection or any metabolic imbalance in a neurologically normal child.

INCIDENCE

- 2-5 % of children <5 years of age
- Usually occurs in children between 6 months-5 years of age
- Peak occurrence – in 18-24 months
- Majority (65-90%)are simple febrile seizures

ETIOLOGY

- **Genetic predisposition** is often observed.
  - Risk of febrile seizure after one affected child is 10%
  - Risk rises to 50% if a parent has febrile seizures
- Cause unknown, associated with other illnesses like
  - Otitis media
  - Bronchopneumonia
  - Post DPT immunization
  - Gastroenteritis
  - Upper respiratory tract infection
  - Measles

TYPES OF FEBRILE SEIZURES

- **Simple febrile seizure**

- **Complex febrile seizure**

SIMPLE FEBRILE SEIZURE

- Primary generalized, usually tonic-clonic,
- Lasting for a maximum of 15 min,
- Does not recur within a 24-hour period
- Leaves no neurological sequelae.

COMPLEX FEBRILE SEIZURE

- More prolonged (>15 min)
- Focal
- Recurs within 24 hrs

Febrile status epilepticus is a febrile seizure lasting >30 minutes.

RISK FACTORS FOR RECURRENCE OF FEBRILE SEIZURES

Major

- Age <1 yr
- Duration of fever <24 hr
- Fever 38-39°C

Minor

- Family history of febrile seizures
- Family history of epilepsy
- Complex febrile seizure
- Day care
- Male gender
- Lower serum sodium at time of presentation

RECURRENCE RISK

- No risk factor - recurrence risk is 12%
- 1 risk factor 25-50%
- 2 risk factors 50-59%
- 3 or more risk factors 73-100%

RISK FACTORS FOR OCCURRENCE OF SUBSEQUENT EPILEPSY

- Focal complex febrile seizure
- Family history of epilepsy
- Fever <1 hr before febrile seizure
- Complex febrile seizure, any type
- Recurrent febrile seizures

CRITERIA FOR HOSPITAL ADMISSION

Simple febrile seizures

First episode

- Age >18 months: clinically stable child, with no symptoms or signs requiring diagnostic investigations, admission is not necessary; needs **only parental education**.
- Age <18 months: Admission should be envisaged, for the possible performance of lumbar puncture.
- Already diagnosed simple febrile seizures : Only parental education

COMPLEX FEBRILE SEIZURES

Admission is recommended for observation because of the wide variability of conditions underlying this event

EVALUATION

- Evaluation of a febrile child with seizure is the same as for any child with fever.
- Measures include clinical history, presence of chronic illness , recent antibiotic therapy and recent immunization.
- Rule out meningitis / encephalitis

INVESTIGATIONS IN FEBRILE SEIZURES

Simple febrile seizures

- Blood investigations like serum electrolytes, calcium, phosphorous, magnesium, blood glucose, CBC
- Electroencephalogram (EEG),
- Neuroimaging
- Lumbar Puncture

Should not be routinely performed in the evaluation of a neurologically healthy child with a simple febrile seizure.

INDICATIONS OF LUMBAR PUNCTURE

- Infant between 6 and 12 months of age who presents with a seizure and fever, when the child has not received Haemophilus influenzaetype b (Hib) or Streptococcus pneumoniae immunizations as scheduled
- Any child who presents with a seizure and a fever and has meningeal signs
- Had received antibiotics, because antibiotic treatment can mask the signs and symptoms of meningitis.

COMPLEX FEBRILE SEIZURES

- Blood investigations
- Electroencephalogram (EEG),
- Neuroimaging
- Lumbar Puncture

TREATMENT

Acute management

Benzodiazepines are considered as the drug of choice

Home Therapy

Midazolam- buccal/ nasal spray : 0.2-0.4mg/kg/dose

Rectal diazepam : 0.5mg/kg/dose

Hospital Therapy

Midazolam/Lorazepam0.1mg/kg/dose

ROLE OF ANTIPYRETICS

- Do not prevent recurrences , only provide comfort to the child.
- Paracetamol (15mg/kg/dose) is the antipyretic of choice.
- Other medications : ibuprofen (5-10mg/kg/dose) or mefenamic acid (3-5mg/kg/dose) if no contra-indication

DRUG PROPHYLAXIS AGAINST RECCURANCE

For Children with one or more simple febrile seizures:

- Continuous or intermittent prophylaxis not recommended
- Detailed parental education would suffice.

INTERMITTENT PROPHYLAXIS

Recommended in patients with atleast one of the following conditions

A) frequent seizures in a short period of time (3 or more in 6 months and 4 or more in 1 year)

B) H/o seizures longer than 15 minutes or requiring pharmacological therapy to be controlled

INTERMITTENT PROPHYLAXIS

- **Clobazam** is the preferred drug for intermittent prophylaxis

  in a dosage of 0.75mg/kg/day in 2 divided doses

- Febrile seizures occur, in 98% of cases, within the first 24 h from the onset of fever and the **duration of prophylaxis is 2-3 days.**

CONTINUOUS PROPHYLAXIS

Indications :

- Febrile seizure recurrence > 6 per year in spite of regular intermittent prophylaxis.
- Febrile status epilepticus

CONTINUOUS PROPHYLAXIS

- Drugs recommended
  - <1 year—Phenobarbitone
  - >1 year-- Sodium valproate

- Duration is for a period of 1-2 years

CONCLUSION

- Febrile seizures are a frequent and benign disorder of infancy and early childhood.
- Parental education, reassurance and prophylactic AED when needed constitute the main modality of treatment.

THANK YOU