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 influenzae type 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/Lorazepam: 0.1mg/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 RECURRANCE

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 at least 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