Clinical guideline
FEBRILE CONVULSIONS – DIAGNOSIS AND MANAGEMENT

SETTING
Children’s Emergency Department (CED), Bristol Royal Hospital for Children (BRHC)

FOR STAFF
Medical, nursing and nurse practitioners

PATIENTS
Children aged 6 months to 6 years
(Outside this range needs higher index of suspicion & CED senior medic involvement)

Definitions

Febrile convulsion - seizure associated with fever caused by infection outside the central nervous system (CNS) in a young child who is otherwise neurologically normal. This does not include seizures due to CNS infection such as meningitis or encephalitis.

Fever - temperature ≥38°C.
Note: Fever may not be present before seizure commences, and may evolve after seizure termination.

Epidemiology

Occurs between 6 months and 6 years, peak incidence at 18 months. Seizure associated with fever outwith this range should not be seen as febrile convulsion. 2 – 5% of children will have at least one febrile convulsion.

Classification

Simple febrile convulsions:

- Generalised tonic-clonic;
- Last less than 15 minutes;
- Do not recur within 24 hours;
- Occur in children with no previous neurological problems;
- Account for 75% of febrile convulsions.

Complex or Atypical febrile convulsions – have one or more of the following:

- Focal onset or focal features during the seizure;
- Duration of >15 minutes;
- Recurrence within 24 hours or within the same febrile illness;
- Incomplete recovery within 1 hour.

Febrile status epilepticus – febrile seizure lasting for longer than 30 minutes (includes situations where seizures happen so frequently that there is no recovery between them).
Cause:

Underlying pathophysiology is unknown, but genetic predisposition plays a role. Common causes of fever are also the most commonly implicated diseases in febrile convulsions, including viral infections, otitis media, tonsillo-pharyngitis, urinary tract infections, gastroenteritis.

Post-immunisation reactions rarely lead to febrile convulsions.

Associations of febrile convulsions

- **Increased risk of recurrent febrile seizures:**
  - occur in one third of patients;
  - Risk factors for recurrence include: family history of febrile seizures, onset aged <18 months, lower temperature or shorter duration of fever at onset.

- **Slight increased risk of developing epilepsy:**
  - Risk in children who have never had a febrile convulsion: 1.4%.
  - Risk after simple febrile convulsion: 2.4%.
  - Risk after complex febrile convulsion: 10 – 20%.

- **No evidence of association with intellectual delay or behavioural problems if simple.**

Discharge

**Discharge criteria:**

- Full recovery, back to normal neurological baseline.
- Cause of fever does not require inpatient admission.
- Parental anxiety addressed.

**Discharge advice**

- Give the parents the information leaflets entitled ‘Guide to febrile convulsions’ and ‘Feverish Illness’ and discuss these with the family.
- Key areas to cover in the discussion:
  - Keeping the fever down IS NOT proven to prevent febrile convulsions, only give anti-pyretics if child is feverish and distressed.
  - Advise NOT to strip naked or sponge with water as this will not help prevent convulsions.
  - Basic first aid in the event of a further seizure.
  - Red flag signs of when to return to the Children’s Emergency Department or call other services such as 111 or 999 including:
    - difficulty in breathing;
    - prolonged seizure (>5mins);
    - failure to wake after the convolution;
    - repeated seizures;
    - signs of sepsis including a non-blanching rash.
# REFERENCES


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<th>AUTHORISING BODY</th>
<th>Children’s Emergency Department Governance</th>
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<th>SAFETY</th>
<th>As per Trust escalation procedures</th>
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<th>QUERIES AND CONTACT</th>
<th>Contact extension 28666 to discuss with senior CED clinician if urgent. Non urgent queries by email to Mark Lyttle or Daphin Fernandez</th>
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**IMPORTANT:**
Is the child still seizing?
If so: commence treatment as per **status epilepticus** protocol

- Child with seizure
- Evidence of fever associated with seizure?
  - Yes
  - No

**Could this be:**
- **Meningitis**
  - Irritability
  - Neck stiffness
  - Non-blanching rash
  - Bulging fontanelle
  - Reduced feeding (infants)
- **Encephalitis**
  - Reduced/ﬂuctuating consciousness
  - Focal neurology

- Yes
- No

**Consider other causes**
- Epilepsy
- Hypoglycaemia
- Metabolic causes
- Neurological disorder
- Space-occupying lesion
- Poisoning
- Brain injury (consider abuse)

- Is this child <6 months or >6 yrs?
  - No
  - Resuscitate as required.
    - Treat as in-patient.
    - Senior CED medic review.
    - Consider early PICU review.
  - Yes
    - Requires involvement of CED senior medic and individualised management plan

**What type of febrile seizure is this?**

**SIMPLE**

- Identify source of fever and treat accordingly:
  - If no source, use clinical practice guideline “Fever in Children 3 months to 5 years of age: Management in the ED”
  - Consider **observation/admission** if:
    - <12months old
    - Recent/current antibiotics
    - Parental anxiety
    - No obvious source of fever

- Discharge if:
  - Normal and full recovery
  - No complex/atypical features
  - Ensure parents have clear information about febrile convulsions

**COMPLEX/ATYPICAL**

- Discuss with CED senior medic:
  - Identify source of fever & treat accordingly
  - Do FBC, U&Es, CRP, Calcium, Magnesium, Blood cultures
  - Consider Lumbar Puncture if 6-12 months, especially if focus unclear
  - Consider neuroimaging
  - All need prolonged period of observation, low threshold for formal admission

**On discharge:**
- Organise general paediatric out-patient follow-up in 6-8 weeks