

Continuing Medical Education

Febrile Convulsion and Guidelines for Management

(Based on RCP and BPA Guideline BMJ 1991 303:634-636)

Prof. Mumtaz Hassan

Head, Department of Paediatrics, Islamabad Medical & Dental College Islamabad. (Bahria University, Islamabad)

Definition

A simple febrile convulsion is a generalized tonic-clonic convulsion occurring in a child aged 6 months to 5 years, precipitated by fever of more than 38°C, arising from infection outside the nervous system in a child who is otherwise neurologically normal.

It is typically short lasting (approx. 5 minutes)

Prevalence

- 3% Children are affected
- M/F ratio= 2:1
- Blacks are affected more commonly than the Whites

Pathophysiology

Cause is still unknown. Fever, illness and age all seem to play an important role. Some studies suggest that the seizures are related to the sudden rise of the temperature, while others propose that a high sustained fever is of a greater importance.

Aetiology

- 80% due to viral infections
- 20% due to bacterial infections
- 40% due to URTI's
- 30% have a family history

History:

- Type and length of febrile illness
- Type and length of convulsion
- PMH** especially convulsions and development

Clinically, Characteristics of simple febrile convulsions are:-

- ❖ Age 6 months to 5 years
- ❖ Generalized tonic-clonic convulsion
- ❖ Less than 20 minutes duration
- ❖ Complete recovery within 1 hour
- ❖ No focal neurological signs or fundal abnormalities
- ❖ No developmental or neurological problems

Management:

1. Admit all 1st febrile convulsions and all ill children
2. Search for focus of infection and treat appropriately
3. No investigation is routinely necessary but;
 - If still convulsing → Check BM

- Consider FBC, Blood cultures, MSU, CXP → to ascertain the cause of fever.
- Consider LP if <12/12 age; if signs of meningism are present: after a complex convulsion: if child is unduly drowsy or irritable or systemically unwell.

The decision for no LP in high risk children should be made after discussion/review by the registrar. Be aware of risk of coning following LP in a comatose child.

4. **Antipyresis**
 - regular calpol +/- Ibuprofen
 - undress child
 - adequate fluids

5. Advise Parents:-

- Reassurance
- Information leaflets about nature of febrile convulsions including prevalence & prognosis
- Temperature regulation
- First aid in a fit, and management of a convulsion +/- use of rectal diazepam
- Take to a doctor if unwell or fit is prolonged
- Future immunization should go ahead

6. Follow up if:-

- ➔ Any developmental concerns
- ➔ Parental anxiety
- ➔ Other pediatric or social issue

Risk of recurrent convulsions in subsequent febrile illness:

The risk of recurrent febrile fits is 30% with no risk factors. The risk of recurrent febrile fits is 50% if the onset is before 12/12 age or if a first degree relative has seizures of any type or following a complex convulsion. The risk of recurrent febrile fits is 75–100% if three or more of the following are present:-

- Onset before 12/12 age
- First degree relative affected
- Complex seizures
- Neurodevelopment problems
- Adverse social circumstances

Therefore, it may be that the latter group is the one to be given solids to take home after adequate parental infusions.

Risk of later development of epilepsy:

Risk of development of epilepsy in the general population is 0.5% by age of 25 years. Neurologically normal children with simple febrile convulsions have a low chance of later epilepsy; only 2.5% have had two or more febrile seizures by 25 years of age.

Presence of complex seizures is associated with an increased risk for later epilepsy.

Atypical / complex febrile convulsions:

- Convulsion lasting more than 20 minutes.
- Focal component to convulsion.
- Less than 6 months of age.
- More than one convulsion within same febrile illness.
- Residual neurological deficit.
- Pre-existing neurological abnormality or abnormal neurodevelopment.

Advice to parents- febrile convulsions:

“Your child has had a febrile convulsion. We know it was a very frightening experience for you. You may have thought that your child was dead or dying, (as many parents think when they first see a febrile convulsion). Febrile convulsions are not as serious as they appear.”

What is a febrile convulsion?

It is an attack brought on by fever in a child aged between 6 months and 5 years.

What is convulsion?

A convulsion is an attack in which the child becomes unconscious and usually stiff, with jerking of the arms and legs. It is caused by unusual electrical activity of the brain. The word convulsion, fit and seizure have the same meaning.

What shall I do if my child has another convulsion?

Lay him on his side, with his head on the same level or slightly lower than the body not the time.

Do not try to force anything into the mouth. The hospital may give you a medicine to insert into your child’s bottom. This is called rectal diazepam. If the convulsion has not stopped by the time that you have found the tube, insert it into the child’s bottom and express the contents of the tube. This treatment should stop the convulsion within 10 minutes. If it does not, take your child to the hospital. You may need to call for an ambulance. Let your doctor know what has happened. About one child in 30 have had a febrile convulsion by age of five years.

Is it epilepsy?

No. This word is applied to fits without fever, usually in older children and adults.

Do febrile convulsions lead to epilepsy?

Rarely. Ninety nine out of 100 children with febrile convulsions never have convulsions after they reach school age, and never have fits without fever.

Do febrile convulsions cause permanent brain damage?

Almost never; very rarely a child who has a very prolonged febrile convulsion lasting half an hour or more may suffer permanent damage from it.

What starts a febrile convulsion?

Any illness that causes a high temperature, usually a cold or other virus infection may start a febrile convulsion.

Will it happen again?

Three out of 10 children who have a febrile convulsion will have another one. The risk of having another febrile convulsion falls rapidly after the age of 3 years.

Does the child suffer discomfort or pain during a convulsion?

No. The child is unconscious and unaware of what is happening.

What shall I do when my child has fever?

You can take the child’s temperature by placing the bulb of the thermometer under his armpit for three minutes with his arm held against his side. Keep him cool by taking off his clothes and reducing the room temperature. Give plenty of fluids to drink. Give children’s paracetamol medicine to reduce the temperature.

The following doses should be given.

Up to 1 year	one 5ml spoonful (120mg)
Aged 1 to 3 years	two 5ml spoonful (240mg)
Aged 4 years and over	three 5 ml spoonful (360mg)

Repeat the dose every four hours until the temperature falls to normal, and then every six hours for the next 24 hours.

If the child seems ill or has ear ache or sore throat, let your doctor see him in case any other treatment, such as an antibiotic, is needed. Antibiotics are not usually necessary, as majority of children have fever due to virus infections.

Is regular treatment with tablets or medicine necessary?

Usually not. The doctor will explain to you if your child needs regular medicines.