First Afebrile Seizure

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Relevant national or international Guidance eg NICE, SIGN, BTS, BSPED	**NICE CG 137**
Consultation document completed: see Appendix A	
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Is this document to be published in any other format?	

Does this document replace or revise an existing document?
Trust specific

Contents

1.1 Introduction

A first afebrile seizure is an event causing significant anxiety for parents. Approximately 10% of the UK population will have a seizure in their lifetime, this may be epileptic or non epileptic. Additionally there are many other non-epileptic paroxysmal events which may be described as a seizure. It is important to differentiate these appropriately.

A significant proportion of children are misdiagnosed with epilepsy (1,2) and up to 30% of children referred to first seizure clinics have not had a seizure (3). It is important to determine a clear history of the event and direct investigations accordingly.

This guideline is for clinicians managing children 2-18 years of age presenting to acute services with a first afebrile seizure. After a first unprovoked seizure 30-50% will recur, after a second 70-80% will recur (4).

All children require paediatric assessment and advice after a first afebrile seizure. Investigations should be directed and can be useful to eliminate differential diagnoses. EEGs should not be routinely performed after a first afebrile seizure.

NICE guidance specifies that essential information should be provided on recognising seizures, first aid and reporting further episodes to a child and their carer (5). NICE recommends all children and young people who have a first afebrile seizure should be seen as soon as possible 'by a specialist in the management of the epilepsies to ensure precise and early diagnosis and initiation of therapy as appropriate to their needs'.

(NB 'soon' – within two weeks; 'specialist' – specialist paediatrician with training and expertise in epilepsy')

1.2 Scope

Children aged 2-16 or 18 (trust dependent) years presenting via ED or assessment units following a first afebrile seizure.

1.3 Purpose

Aims:
To guide history taking, investigation and management of children presenting with a first afebrile seizure to ensure appropriate onward management.
To ensure appropriate safety netting and follow up on discharge.

Please note that this is NOT a guideline for the management of a child who is currently seizing, children with known epilepsy or complex neurological disorder or child who has presented with seizures secondary to an associated cause e.g. trauma, hypoglycaemia, or those associated with fever.

1.4 Definitions - taken from PET 1 handbook (6)

epileptic seizure – a manifestation of excessive and/or hyper-synchronous, usually self limiting, activity of neurons in the brain

non epileptic seizure – can look the same but arises as a consequence of different, 'non epileptic' mechanisms

epilepsy – a group of neurological conditions characterised by recurrent epileptic seizures

ED – Emergency Department

ECG - Electrocardiogram

EEG - Electroencephalogram

2 Recommendations

2.1 History

Current episode - take a thorough history including a detailed chronological history of events before, during and after the seizure. Obtain bystander accounts if at all possible (via telephone if required). This maybe the only opportunity to document these, particularly if the event occurred in the presence of another carer e.g. school/ nursery. Take a history from the child as well as parents. Useful to determine if there was any warning of the event, how long it lasted, if they were unresponsive, if there was any colour change, any focality to limb or eye movements and behaviour post event. Always ask 'what happened first'?

Ask questions to rule in/out potential differentials e.g. vasovagal syncope, reflex anoxic seizures, cardiac causes, psychogenic events, vertigo. Particularly was there colour change, warning – feel dizzy, muffled sounds (suggests non epileptic event).

Has there been any history suggestive of other seizure types? Ask specifically about absences, myoclonic jerks or nocturnal events.

Family history – need to include sudden death in young people, history of cardiac conditions or epilepsy.

Red Flags:
Head injury – refer to NICE head injury guidance (7)
Drug, alcohol or toxin use
Prolonged seizure >10 minutes
Focal seizure – consider imaging
Developmental delay or regression
Required >1 dose of benzodiazepines
Immunosuppressed
Bleeding disorders
Any safeguarding concerns

2.2 Examination

Conduct a thorough investigation including a full neurological examination. Determine if the child is back to their usual self, ideally from parents/primary carer. Ensure observations including BP are normal for age.

Red flags:
Systemically unwell
Reduced GCS or not fully recovered
Abnormal neurological findings

Signs of raised ICP
Signs of meningism
Abnormal cardiac examination

2.3 Investigations

1. Blood sugar – should be performed as soon as possible after the event on all children.

2. ECG – a 12 lead ECG should be performed on all children presenting with history suggestive of generalised tonic clonic seizure activity.

3. BP – should be performed on all children as part of routine observations.

4. Consider blood gas – to check electrolytes.

5. Bloods – if clinically indicated as per NICE guidance (5) – only to be considered at the discretion of the specialist to exclude other diagnoses and determine an underlying cause of the epilepsy.

6. EEG - an EEG is not routinely indicated after a first afebrile seizure as it lacks sensitivity and specificity and can be prone to misinterpretation. Even in patients with confirmed epilepsy 50% of standard EEGs performed can be normal. 10% of children without epilepsy will have some abnormalities on EEG. NICE recommendations are to use EEG to support a diagnosis of epilepsy in children where the clinical history suggests it after a second epileptic seizure and not to be used to exclude a diagnosis of epilepsy or in isolation to diagnose epilepsy.
However, if you feel an EEG is required, please discuss with the paediatric team on call or Paediatrician with special interest in epilepsy.

7. Imaging – if there are acute concerns about focal neurological signs a CT would be the investigation of choice. If this is being considered, discussion with the paediatric team on call is important.
MRI is the modality of choice in patients with epilepsy particularly if they develop epilepsy before the age of 2 years or have any suggestion of a focal onset (NICE guidance).

2.4 Management
If no ‘red flag’ features identified on history, examination or investigations and the child is back to their usual self consider discharge after:
Ensuring there is a responsible adult to discharge the child to
All the parental/ responsible adults concerns have been addressed
Discussion of first aid in event of another seizure
Discussion of safety net advice post seizure
Provide written information
Advise parents to video future events if safe to do so or keep a detailed account of event if possible.
Provide contact details for Epilepsy Nurse Specialist for parents and inform Epilepsy Nurse Specialist of attendance.

2.5 Follow up

Those children who meet the criteria above for discharge should be referred (via local pathways) to a Paediatrician for follow up.
If this is not a first episode and they have already been seen or referred to a Paediatrician, please inform them of the attendance.
Please check local policy for referral and consider referral to local Epilepsy Nurse Specialist while awaiting OP appointment.

3 Implementation

Training and dissemination via the Wessex Neurology Network, the Paediatric ED group and the PIER website.

4 Process for Monitoring Effectiveness

Effectiveness and adherence to the guideline will be monitored by regional audit of practice, particularly epilepsy 12 performance and ED group audits.

5 References

1.Uldall P, Alving J, Hansen LK, et al. The misdiagnosis of epilepsy in children admitted to a tertiary epilepsy centre with paroxysmal events. Arch Dis Child 2006;91:219-221.

2. Michoulas A, Farrell K, Connolly M. Approach to a child with a first afebrile seizure. BCMJ 2011; 53: 274-277

3. Hamiwka LD, Singh N, Niosi J, et al. Diagnostic inaccuracy in children referred with “first seizure”: Role for a first sei-zure clinic. Epilepsia 2007;48:1062-1066.

4. B. Pohlmann-Eden, E. Beghi, C. Camfield, and P. Camfield. The first seizure and its management in adults and children**.** *BMJ* 2006;332: 339 - 342.

5. NICE CG137: Diagnosing Epilepsies: Diagnosis and Management, 2012. Last updated January 2016. Available at: https://www.nice.org.uk/guidance/cg137

6. PET 1 Handbook – https://www.bpna.org.uk/pet/

7 NICE CG176: Head Injury: Assessment and Early Management, 2014. Available at: https://www.nice.org.uk/guidance/cg176

9 Appendices

Appendix A Paediatric Regional Guideline Consultation Documentation:

Appendix B Procedures, patient information leaflets, audit forms

Appendix A

Paediatric Regional Guideline Consultation Documentation:

Trust	Name of person consulted* (print)	Designation of signatory[$]	Signature
Chichester	Circulated with no comments		
Dorchester	Circulated with no comments		
Hampshire Hospitals Foundation Trust	Gabriel Whitlingum Graham, Julia		
Poole	Howard, Delyth Munir.Hussain		
Portsmouth	Dr Warriner Freeman Amanda		
Salisbury	patricia.may		
Southampton	Dr Andrea Whitney Anne Beaton Aabir.Chakraborty (Neurology UHS)		
IOW	Circulated with no comments		

* this person agrees they have read the guidelines, consulted with relevant colleagues and members of MDT, managers and patients, young people & their families as appropriate. Any queries raised during consultation and review process should be documented with responses and any changes made to guideline.

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