

## Rescue treatment of prolonged and serial convulsive seizures in the home or other community settings for children and young people

### **Definitions:**

*Prolonged convulsive seizure: seizure lasting 5 minutes or more*

*Serial/ Cluster seizures: usually defined as brief convulsive seizures, three or more in an hour with recovery of consciousness in between*

*Convulsive status epilepticus: a convulsive seizure lasting 30 minutes or more or repeated brief seizures lasting 30 minutes or more without the person regaining consciousness in between.*

### **Rationale**

Convulsive status epilepticus is potentially harmful. Its outcome is primarily determined by its underlying aetiology and its duration. Prompt treatment improves the chances of a successful response to a single medical agent and reduces morbidity and mortality. There can be substantial treatment delay during transfer of a child to the hospital. Early treatment of prolonged/ serial convulsive seizures in the community with drugs that can be administered easily and safely by trained non medical staff has been found to be beneficial in preventing a prolonged seizure or serial seizure from progressing to status epilepticus <sup>1</sup>.

Diazepam administered rectally is a well established effective treatment of prolonged/ serial (cluster) seizures in the community <sup>2</sup> but it has several drawbacks including unreliable absorption, inconvenience, socially embarrassing, reluctance of some carers, especially school staff, to administer it. Buccal or intranasal midazolam is as effective and safe as rectal diazepam in the treatment of prolonged or serial convulsive seizures and is a preferable alternative to rectal diazepam in a community setting <sup>3, 4, 5</sup>.

### **1. Prescription of rectal diazepam or buccal midazolam for the treatment of prolonged or serial / cluster seizures in the community:**

The decision to initiate rescue treatment should be taken by or in discussion with a paediatric consultant / consultant paediatric neurologist

#### **1.1 Choice of rescue treatment:**

1. Preschool: rectal diazepam or buccal Midazolam
2. School age: buccal midazolam
3. In some select cases, rectal paraldehyde may be used at the discretion of the consultant paediatrician/ consultant paediatric neurologist

### **2. Prescribing and administration of rescue treatment- clinical governance issues**

#### **2.1 Prescriber takes responsibility for:**

- Clear explanation to parents/ main carers re the indications for uses, what to expect after administration, side effects, safe storage. *The prescriber may delegate this responsibility to specialist epilepsy nurse, hospital paediatric nurse or to an appropriately trained school nurse.*

- Documenting above in notes and discharge summary/ clinic summary with clear treatment plan
- Ensuring prompt training and written information is made available to parents/ main carers and where relevant to other staff groups in the community. If prescribed during hospital admission, ensure that ward nursing staff have trained parents/ main carers before discharge
- Ensuring individual written care plan in place
- Reviewing the need for rescue treatment annually.

## 2.2 Timing

- Carer to be advised to start timing the seizure from the outset
- Rescue treatment to be administered if convulsive seizure has lasted 5 minutes
- Rescue treatment may be required with serial/ cluster of seizures, the number of seizures to be determined as per individual treatment plan.

## 2.3 Dose

### 2.3.1 Rectal Diazepam

#### (BNF for children 2016)

The recommended dose of rectal diazepam is 0.5mg/kg (Maximum 20mg) .However, for convenience age dependant doses are as follows:

Neonate:	1.25- 2.5mg
1 month- 2 years:	5mg
2 -12 years:	5-10mg
12 - 18 years:	10-20mg

**In an individual child, a second dose may be prescribed within their care plan to be administered if the seizure is not showing any signs of resolution within 10 minutes.**

### 2.3.2 Buccal Midazolam (Use the BUCCOLAM preparation)

#### (BNF for children 2016)

The recommended dose of Buccal Midazolam is 0.3mg/kg (Max 10mg) However, for convenience age dependant doses are as follows:

3 - 12 months:	2.5mg
1 - 5 years:	5mg
5 - 10 years:	7.5mg
10-18 years:	10mg

**In an individual child, a second dose may be prescribed within their care plan to be administered if the seizure is not showing any signs of resolution within 10 minutes.**

### 3. Care of the Child after administration of rescue treatment

- Call ambulance if :
  - it is the first time the child has received rescue treatment
  - seizure not coming under control by 10 minutes after 1<sup>st</sup> dose (after 2<sup>nd</sup> dose in some select cases)
  - any concern regarding breathing, circulation, consciousness or child's general condition

#### References

1. National Institute for Clinical Excellence (2004) *The Epilepsies: The diagnosis and management of the epilepsies in adults and children in primary and secondary care.*
2. Knudsen FU. Rectal administration of diazepam in solution in the acute treatment of convulsions in infants and children. *Arch Dis Child* 1979; **54**: 855-57.
3. Scott RC, Besag FM, Neville BG. Buccal midazolam and rectal diazepam for treatment of prolonged seizures in childhood and adolescence: a randomised trial. *Lancet* 1999; **353**: 623-26
4. Mpimbaza A, Ndeezi G, Staedke S, Rosenthal PJ, Byarugaba J. Comparison of buccal midazolam with rectal diazepam in the treatment of prolonged seizures in Ugandan children: a randomised clinical trial. *Paediatrics* 2008; **121** Vol 1 e58-e64
5. McIntyre J, Robertson S, Norris E, Appleton R, Whitehouse WP, Phillips B, Martland T, Berry K, Collier J, Smith S, Choonara I. Safety and efficacy of of buccal midazolam versus rectal diazepam for emergency treatment of seizures in children: a randomised controlled trial. *Lancet* 2005 Jul 16-22; **366** (9481): 205-10