

Guidelines to support seizure management at the end of life

Scope

This guidance aims to support clinicians with assessment and management of patients with a history of seizures / risk of seizures who are no longer able to take oral medication.

Which patients?

- ☐ Diagnosis of proven seizures/epilepsy
- ☐ Diagnosis of a condition which carries a risk of seizures e.g. brain tumour or brain metastases
- ☐ Patients on anti-epileptic medication with unclear indication (these drugs are sometimes used for mood or pain)

Risk assessment

- Diagnosis
- Type of seizures e.g. absence, focal, generalised tonic-clonic (highest risk)
- Seizure frequency: When was their last seizure? How often do seizures occur?
- Medications: are their current anti-epileptic medications adequately controlling their seizures?
- What is the clinical trajectory (hours, days, weeks)?
- Are the seizures distressing for the patient and/or family?
- Consider history of steroid use for brain tumours (stable or weaning dose)?

Management of seizures

1. Consider factors that will lower seizure threshold (and consider goals of care and reversibility)

- ☐ Infection
- ☐ Electrolyte disturbance
- ☐ Hypoglycaemia
- ☐ Any missed doses of anti-epileptic medication (most have long half-lives)
- ☐ Other medications which interact with anti-epileptics (regular or new)

2. Drug Choice

- Consider phase of illness and prognosis when deciding drug choice and dose
- Check most recently known renal and liver function
- If not responding to initial doses or status epilepticus **must** discuss with medical consultant

Midazolam (drug of choice) in CSCI especially if prognosis days to short weeks

Buccal midazolam: may be considered for patients with relatives able to administer in crisis with adequate training and information leaflet (see The Vine)

Other options: There are other anti-epileptic medications that can be given via CSCI however **these must always be discussed with a Consultant Doctor or Nurse**. All other options require a separate syringe pump

Drug (alphabetical order)	Dose conversion	Dose	Comments e.g. sedation/volume etc	Cost (for total of 5 days)
Levetiracetam	1:1 (PO:SC)	Conc: 500mg/5ml. In 100ml n/saline Bolus SC BD over 30 mins OR over 24 hours via CSCI (max 2 grams)	Less sedating. Large volume for CSCI (maximum 2 grams over 24 hours due to volume).	At 1g/day= £128 At 2g/day=£256
Lacosamide	1:1 (PO:SC)	200mg/20ml bolus SC BD over 30mins	Large volume. Less sedating	At 400mg/day=£300
Phenobarbital (CD)	No oral equivalent	Conc: 200mg/ml. Loading dose : give 200mg bolus IM and repeat as needed. Maintenance : between 600mg to 2400mg/24 hrs CSCI	Irritant medication Dilute maximally Sedating Must have consultant r/v	Injection: 1g/day= £50
Valproate	1:1 (PO:SC)	If on PO valproate Maintenance: 300mg/3ml or 400mg/4ml	Can sometimes be sedating	Injection: 1800mg/day=£300

E.g 1) SC levetiracetam may be indicated if prognosis longer and primary aim is to avoid sedation

*E.g 2) Phenobarbital may be considered where refractory seizures but **must** have medical consultant review*

3. Prescribing on the Pan London MAAR Charts (CSCI, PRN and crisis charts)

- Prescribe just in case medication for seizures on **both** the PRN and CSCI charts.
- Prescribe medications for seizure management **separately** to agitation/distress
- Update CMC with seizure plan

CSCI chart prescribing recommendation

Midazolam CSCI range for seizure prevention: recommended as 30mg to 60mg over 24 hours. Lower starting dose of 20 mg/24 hrs may be indicated in selected patients.

Agitation / Distress (see seizure dose below)			
Date: 24/06/2021	Medication: MIDAZOLAM	Dose range: (over 24 hours) 5 mg to 20 mg	Prescriber sign & print:
Respiratory tract secretions			
Date: 24/06/2021	Medication: GLYCOPYRRONIUM	Dose range: (over 24 hours) 600 micrograms to 2.4mg	Prescriber sign & print:
Other medication – specify indication here: SEIZURE CONTROL			
Date: 24/06/2021	Medication: MIDAZOLAM	Dose range: (over 24 hours) 30 mg to 60 mg	Prescriber sign & print:

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London MAAR
Charts:
CSCI charts

PRN and crisis chart prescribing recommendation

Midazolam PRN crisis dose: you may choose to prescribe PRN 5 mg **OR** 10 mg depending on the patient characteristics. Avoid ranges as this causes confusion.

Agitation / Distress (see crisis seizure dose prescribed separately)	Date:																		
Medication: MIDAZOLAM	Time:																		
Date: 29/06/2021 Dose Range: 1 mg to 2 mg SC Max 24hour dose: 20 mg (not including seizures)	Dose:																		
Frequency: Prescriber sign & print:	Sign:																		

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London MAAR
Charts: PRN
charts

Indication: CRISIS e.g. SEIZURE	Administration record:	Administration record:	Administration record:
Medication: MIDAZOLAM	Date:	Date:	Date:
	Time:	Time:	Time:
Dose: 10 mg	Route: SC or IM	Dose:	Dose:
Max 24hour dose: -	Frequency: once and call STCH who may advise further doses	Sign:	Sign:
Prescriber sign, print & date:			

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London MAAR
Charts: Crisis
chart

4. Starting a CSCI

- **When to start:** consider when last dose of oral anti-epileptic was taken and duration of action
- **Usual minimum starting dose of CSCI midazolam is 30mg/24 hrs** with potential for up-titration up to 60mg/24 hrs (higher doses trigger medical review/discussion)
- **Regular review within 48 hours** to establish ongoing need for CSCI and doses required.

When to call for advice

- If not responding to initial doses or status epilepticus → **must** discuss with medical consultant
- When prescribing or starting a CSCI for seizure prevention/management and unsure of starting dose
- Ongoing seizures despite established CSCI Midazolam with appropriate dose escalation
- If patient on CSCI is improving or stabilising and may be able to revert back to oral/gastrostomy anti-epileptic medications

Other resources and references: Palliative Care Formulary 7th edition 2020, Palliative Care Adult Network Guidelines 4th edition 2016, SIGN 143 guidance on seizures Revised 2018 (accessed 13th June 21) , Scottish Palliative Care Guidelines 2020 (accessed 13th June 21)