



“Pearls” from the Palliative Medicine Program January 2005 Seizure Treatment and Control in the Home at the End of Life

This will replace “Pearls Sept 2004”. This review has been prompted by the discontinuation of Phenobarbital® injectable and accompanies the revamping of the Windsor & Essex County Symptom Response Kits.

Not everyone with brain tumours will seizure. 20-45% of patients with **primary brain tumours** will have presented with seizures and a further 15-30% may develop seizures. While regular use of prophylactic antiepileptics is controversial, these patients and their families need to be prepared for seizure activity. In the case of **metastatic brain tumours**, 15-20% will present with seizures and only a further 10% may develop seizures. This does mean that 70% of patients with metastatic brain involvement will NOT seizure. So perhaps the first message to these families is that seizures may not occur.

The most important thing is to be prepared; if there is deemed a high risk of seizure we should have educated the family/caregivers what to do and what not to do. Depending on the clinical situation, we might consider having seizure medication ready. **The most important thing to tell the family is that most seizures will stop on their own.**

Treatment “during” a Seizure:

Do

- Place the patient in prone position
- Protect the patient from hazards
- Remove their eyeglasses
- Loosen any tight clothing around their neck
- Administer acute seizure medicine if it has been recommended

Don't

- Do not put any object into the mouth
- Do not try to hold the tongue
- Do not restrain the patient; do not try to still their limbs
- Do not give liquids
- Do not perform CPR

Treatment “after” a Seizure:

Do

- Turn the patient on their side to keep their airway clear
- Observe the patient until fully awake
- Call the physician if there are any of the following:
 - there are multiple seizures
 - the seizure is lasting > 5 minutes
 - the patient is injured or diabetic
- Discuss prevention of further seizures with the physician.

Treatment of a Seizure in the home when goals of care are palliative: If clinically indicated, the acute seizure may be treated with one of the following:

Lorazepam (Ativan®) sublingual tablets (SRK)	sublingually or buccally	1-2 mg
Midazolam (Versed®) injectable (SRK)	give IM in deltoid muscle (faster absorption than gluteal). non-ODB	5 mg – 10 mg IM
Diazepam (Valium®) rectal gel or injectable (SRK) per rectum	Diazepam injectable is covered by ODB; the rectal gel is not. Give the injectable diazepam per rectum via butterfly needle with the needle cut away.	28-50 kg: 10 mg
		51-75 kg: 15 mg
		76-111 kg: 20 mg

The most important maneuver is to prevent a further seizure from occurring. The next steps will depend on the clinical situation, goals of care and prognosis.

If the patient recovers and is able to take medications orally, the physician may wish to investigate drug plasma levels and adjust dosing.

General Guidelines:

- ✓ It is generally preferable to continue to use the same drug that has been previously successful at controlling the seizures but by a different route, when the patient can no longer swallow.
 - ✓ With respect to feeding tube administration: carbamazepine and phenytoin may bind to the plastic tubing. Diluting with 30-60ml of water may reduce this. Carbamazepine and phenytoin may interact with tube feed; stop feed for 1 hr before, 2 hrs after dosing.
- ✓ There may be altered bioavailability/pharmacokinetics when converting from tablets (immediate release or sustained release) to oral solution. The dose and/or frequency may need to be changed.
- ✓ Carbamazepine may be considered the drug of choice for control of seizures in palliative medicine. The dose/response curve is linear. Plasma half-life reduces (from 36 to 24 hrs) as a result of autoinduction of enzymes so measuring plasma levels may be helpful in determining the optimum dose. As the blood level rises slightly after each administration even after reaching steady state, either using controlled release formulation (ODB Limited Use #67) or giving immediate release in smaller doses more often may reduce side effects.
 - ✓ when the patient cannot swallow, carbamazepine can be made in suppositories
 - ✓ some SSRI's increase plasma carbamazepine; paroxetine and sertraline do not
 - ✓ carbamazepine accelerates the metabolism of tricyclic antidepressants
- ✓ Phenytoin has saturable kinetics (a non-linear dose/response curve after reaching a certain level.) This means that increases in doses need to become smaller as the doses get higher as the plasma level may suddenly go from a subtherapeutic to toxic range.
- ✓ In cases where a seizure occurs with a therapeutic drug level, it may be indicated, at least briefly, to increase the dose of corticosteroids rather than changing to another drug, or adding a second drug (with the risk of added toxicity). The benefits of increased corticosteroid should be weighed against the side effects and prognosis. Corticosteroids used with phenytoin may reduce the benefit of each drug!

- ✓ Combination therapy should generally be avoided because there is no evidence of additive therapeutic effect; there is an increased chance of drug interactions and toxicity may be enhanced.

Seizure Prophylaxis when Patient Can No Longer Use Oral Route and There is no Feeding Tube in place.

Previous Drug	Alternate route	ODB	Dose adjustment/notes
Valproic Acid Depakene®	Rectal suppositories (made by compounding pharmacist)	no	No dose adjustment
	Syrup diluted with equal volume of tap water	yes	Try empty rectum first; hold cheeks together for 15 minutes after insertion
Carbamazepine Tegretol®	Rectal suppositories (made by compounding pharmacist)	no	Same or increase dose by 25%
Neurontin Gabapentin®	none	N/A	none
Phenytoin Dilantin®	Switch to either per rectum a) Valproic Acid 15-60 mg/kg/day bid-qid or b) carbamazepine 8-20 mg/kg/day bid-qid OR c) fosphenytoin IM	no no no	1.0 mg Fosphenytoin = 1.5 mg phenytoin. expensive
Midazolam Versed®	SC infusion	yes	1-3 mg /hr CSCI titrate to effect balancing side/effects

References

Hendrikus et al. *Management of Seizures in Brain Tumor Patients at the End of Life.*

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Journal of Emergency Medicine **17**(2), 323-328, 1999

www.palliativedrugs.com see anticonvulsants

www.RxFiles.ca see antiepileptics

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