

PALLIATIVE PEARLS

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Anticonvulsants and Rectal Use: Best Practices | April 2021

SEIZURES AT END OF LIFE: AN OVERVIEW

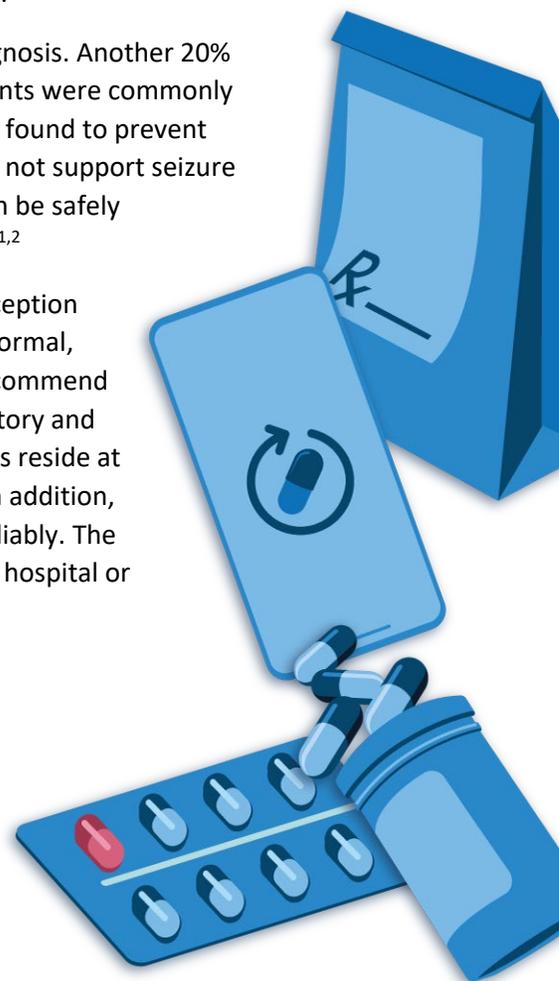
Seizures are a rare but serious complication at end of life. The incidence of seizure occurrence in hospice patients is not known. Patients at an increased risk for seizures are those with brain cancer, cerebrovascular disease, metabolic abnormalities, certain genetic disorders and/or pre-existing seizure disorders.¹ Anticonvulsant therapy should continue, if possible, for patients with a history of seizures, brain tumors with experience of seizures, or a history of status epilepticus.

Up to 40% of patients with brain tumors have a seizure at the time of diagnosis. Another 20% develop seizures during the course of the illness. In the past, anticonvulsants were commonly started at the time of brain tumor diagnosis, however they have not been found to prevent seizures. Guidelines published by the American Academy of Neurology do not support seizure prophylaxis. Based on the lack of evidence for benefit, anticonvulsants can be safely discontinued in patients with brain tumors who have never had a seizure.^{1,2}

Most acute seizures are short-lived and terminate spontaneously. The exception is status epilepticus (SE), defined as a crisis in which seizure activity is abnormal, prolonged and refractory to management. Guidelines for managing SE recommend the use of intravenous medications and suggest that neurological, respiratory and cardiovascular monitoring be available. Considering many hospice patients reside at home, these resources may not always be available or easily accessible. In addition, many patients on maintenance therapy may lose the ability to swallow reliably. The ability to administer medication via alternate routes is important to avoid hospital or hospice IPU admission for seizure management.³

INDICATIONS FOR RECTAL ROUTE FOR DRUG ADMINISTRATION

- Intractable nausea and vomiting
- GI obstruction
- Dysphagia
- Esophageal stricture or malignancy
- Loss of consciousness
- Refusing oral medications or spitting out tablets



ADVANTAGES OF THE RECTAL ROUTE

- Avoiding painful injections
- Administration of drugs that don't have a SUBCUT/IM/IV dosage form
- Ability to continue treatment with medications essential to comfort

LIMITATIONS OF THE RECTAL ROUTE

- Not all drugs are absorbed rectally⁴
- Tablets and capsules administered rectally may vary in how they dissolve. It depends on presence of stool in the rectum and hydration status.
- Suppositories may be expelled prematurely and not provide the total drug dose
- The patient and family/caregiver may have concerns regarding the patient's privacy or feel embarrassed by rectal administration

RECTAL ABSORPTION: SUPPORTING LITERATURE OR LACK THEREOF

The diazepam gel preparation (Diasat[®]) is the only commercially available rectal formulation approved for seizures. Several studies found effective the use of diazepam solution for injection and compounded diazepam suppositories administered rectally.⁵⁻¹²

There is evidence of feasibility of short-term substitution per rectum (PR) for:

- Carbamazepine (Tegretol[®])¹³⁻¹⁸
- Lamotrigine (Lamictal[®])^{19,20}
- Levetiracetam (Keppra[®])^{21,22}
- Phenobarbital²³⁻²⁹
- Topiramate (Topamax[®])³⁰
- Valproic acid (Depakene[®])³¹⁻⁴²

Limited evidence suggests PR is not an effective route for:

- Clonazepam (Klonopin[®])⁴³⁻⁴⁸
- Felbamate (Felbatol[®])⁴⁹
- Gabapentin (Neurontin[®])⁵⁰
- Lorazepam (Ativan[®])⁵⁰⁻⁵²
- Midazolam (Versed[®])^{50,53-62}
- Oxcarbazepine (Trileptal[®])⁶³⁻⁶⁶
- Phenytoin (Dilantin[®])^{50,67-70}

No evidence exists to support nor refute the PR route for:

- Brivaracetam (Briviact®)
- Divalproex (Depakote®)
- Eslicarbazepine (Aptiom®)
- Ethosuximide (Zarontin®)
- Ezogabine (Potiga®)
- Lacosamide (Vimpat®)
- Perampanel (Fycompa®)
- Pregabalin (Lyrica®)
- Primidone (Mysoline®)
- Rufinamide (Banzel®)
- Tiagabine (Gabitril®)
- Vigabatrin (Sabril®)
- Zonisamide (Zonegran®)

In patients receiving anticonvulsants for managing seizure disorders, maintaining therapeutic concentrations of the drug is necessary for optimal seizure control.⁴ When literature does not support rectal administration in humans, or literature does not exist, consider using an alternative route of administration or a medication with more supporting evidence. However, in the absence of literature, one can consider trying rectal administration of a drug based on the following properties:⁴

- Surface area of absorption
- Rectal retention time
- Absorption rate, considering lipid solubility of drug and the amount of nonionized drug at site
- Time available for rectal drug release/drug dissolution

For additional guidance on the use of the rectal route in palliative care, access this open access article:

Samala RV, Davis M. PCNOW Fast Facts and Concepts #229: Palliative Care Per Rectum. November 2015.

[Article link](#)

Consider reviewing the following past cases as topic refreshers and supplements:

[Rectal Administration and the Macy Catheter](#)

[Acute Seizure Management](#)

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