SESLHDMG/132

Medicine Guideline

Subcutaneous levetiracetam for seizure management in Palliative Care Patients

Health
South Eastern Sydney
Local Health District

Areas where Protocol/Guideline applicable	SESLHD inpatient settings (including Calvary hospital)
Authorised Prescribers:	Specialist Palliative Care Service
Indication for use	To maintain control of seizures in a deteriorating and dying patient where no reduction in levels of consciousness is desired, and where the patient is unable to swallow oral medications and IV access is not possible or not desired
Clinical condition	Seizures related to primary palliative diagnosis (all cause).
Proposed Place in Therapy	To be used to prevent or control seizures where the patient is unable to use oral medications and requires symptom control with sub-cutaneous anti-epileptic treatment. May also be used in conjunction with benzodiazepines where appropriate as intermittent or regular dosing.
Adjunctive Therapy If part of combination therapy, list other drugs	May be used in conjunction with regular or as required benzodiazepines for seizure control: Midazolam Clonazepam
Contra-indications	Allergy or hypersensitivity to levetiracetam
Precautions	• Mood disturbance and mental health disorder (may increase risk of suicidal thoughts or behaviours) • Psychotic symptoms • Requires dose reduction in kidney disease. • Seek specialist advice if patient pregnant or breast feeding.
Important Drug Interactions	Caution is advised with concurrent administration of carbamazepine, methotrexate or phenytoin because of isolated reports of toxicity
Dosage	The usual **starting dose** is 500 to 1000mg over 24 hours via continuous subcutaneous infusion (CSCI) titrated to effect. ***Hepatic Impairment*** No dose adjustment is required with mild to moderate hepatic impairment. Care with hepatorenal syndrome - dose based on renal function (see below) ***Renal Impairment dosage adjustment***

Creatinine Clearance (mL/min)	Usual Maintenance Dose
>80	1000 to 3000mg over 24 hours
50 to 79	1000 to 2000mg over 24 hours
30 to 49	500 to 1500mg over 24 hours
<30	500 to 1000mg over 24 hours

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Dose conversion for oral to subcutaneous (subcut) route	A ratio of 1:1 between oral and subcutaneous routes should be used
Duration of therapy	If patients can be safely transitioned to equivalent oral levetiracetam, this should be attempted where appropriate. In palliative patients and patients at end of life where oral treatment is not feasible, subcutaneous infusions should continue until death.
Prescribing Instructions	Subcutaneous Levetiracetam must be prescribed on the eMM system. In the absence of eMM systems, the appropriate paper medication chart may be used.
Administration Instructions	Levetiracetam should be diluted as much as is practical to avoid infusion site irritation. Maximum 1600mg in 20mL syringe. Maximum 2400mg in 30mL syringe. (30mL syringes available via Palliative Care Team). If higher doses are required (**maximum 3000mg**) administer in 100mL sodium chloride 0.9% via an infusion pump. Contact Palliative Care Team for advice. Dilute with water for injection for administration via syringe driver. Doses >2400mg must be diluted in 100mL sodium chloride 0.9%.
Drug Compatibility	Levetiracetam **should not be mixed with any other medication** due to lack of robust compatibility data.
Adverse effects	**Very common (>10%):** fatigue, drowsiness, headache, injection site irritation **Common (1%):** ataxia, hyperkinesis, tremor, dizziness, diplopia, blurred vision, amnesia, behavioural disturbances, depression, insomnia, anorexia, abdominal pain, diarrhoea, dyspepsia, nausea, vomiting, myalgia, rash, pruritus, thrombocytopenia. Further information can be sought in the Levetiracetam Product Information via MIMS.
Monitoring requirements	Monitor seizure activity and titrate dose accordingly. Monitor for injection site reactions. Perform 4 hourly infusion site checks as per Subcutaneous Syringe Driver inpatient management form SES130.021.
Management of Complications	Any seizure activity seen during subcutaneous levetiracetam infusion should be managed with benzodiazepines, then specialist advice sought.

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Practice Points	Administer alone in a separate syringe driver or infusion pump. Ensure dose adjustment is made for renal impairment. Benzodiazepines remain the first line management for prolonged seizure or status epilepticus. Seizure control should be achievable with appropriate dose adjustment, but if a seizure cannot be controlled or status epilepticus develops seek specialist advice. Additional antiepileptic or anaesthetic agents may be needed. Refer to eTG Palliative Care: 'Seizures in palliative care: overview for more information
Basis of Protocol/Guideline:	Palliative Care Formulary online. In Medicines Complete. Pharmaceutical Press. Available via CIAP. Palliative Care (December 2024) In Therapeutic Guidelines. Melbourne. Therapeutic Guidelines Ltd. Available via CIAP. Dickman A, Schneider J. The syringe driver: continuous subcutaneous in palliative care. Oxford University Press; 2016 Our Lady's Hospice & Care Service, Harold Cross, Dublin Ireland, 2016: Our Lady's Hospice & Care Services (OLH&CS)
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GOVERNANCE	
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