Levetiracetam Intravenous for Adults

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- Consider **IV to oral switch** as soon as possible as excellent oral bioavailability (100%)
- There is no experience with administration of intravenous levetiracetam for periods greater than four days
- Avoid sudden withdrawal - suggest reduce at same rate as for dose increases
- See under 'Dose' for adjustments required in **renal** impairment (maintenance doses only)
- See local guidelines for Status Epilepticus

Available preparations

Keppra 500mg per 5mL vial

Levetiracetam 500mg per 5mL ampoule

Reconstitution

Already in solution

Draw up using a 5 micron filter needle (ampoule)

Dilute further prior to administration

Infusion fluids

Sodium chloride 0.9% or Glucose 5%

Methods of intravenous administration

Intermittent intravenous infusion

- Add required dose to 100mL of infusion fluid
- Administer over 15 minutes (but see below re rate in status epilepticus)

Dose in adults

Status Epilepticus **(unlicensed r**ef 2,3)

Loading dose (Status Epilepticus)

- Give 60 mg/kg IV (to a maximum 4500 mg) infused over 10 minutes - see table below
- Flush the giving set with 25mL of infusion fluid at the same rate after the dose to ensure the full dose is administered

Status epilepticus: Loading doses

Body weight (kg)	Dose
40 kg	2,400mg
50 kg	3,000mg
60 kg	3,600mg
70 kg	4,200mg
75 kg plus	4,500mg

Maintenance dose after loading doses (Status Epilepticus)

- Commence maintenance dose 10 to 14 hours after the loading dose
- If CrCl 50mL/min/1.73m^2 or more: Give 1000mg twice daily
  - (max 1500mg twice daily, higher doses of up to 30mg/kg twice daily may be used on ONGOING advice of neurologist)
- if CrCl less than 50mL/min/1.73m^2 -See Renal dosage table below

Other Indications

Note: the doses below are as per SPC- this differs from the BNF in some cases

- **Initial therapeutic dose:**
  - Give 500mg twice daily
  - A lower initial dose of 250mg twice daily may be given based on an assessment of seizure reduction vs potential adverse effects. This can be increased to 500mg twice daily after two weeks
  - Depending on the clinical response and tolerability, the daily dose can be increased up to 1500mg twice daily
  - Dose changes can be made in 250mg or 500mg twice daily increases/decreases every two to four weeks
  - **Maximum dose:** 1,500mg twice daily (but see also under Status epilepticus above)

Conversion from oral to IV therapy (for example if patient nil po)(ref 1)

- Maintain the same total daily dose and frequency of administration
- For example: 500mg twice daily orally, can be switched to 500mg twice daily by intravenous infusion.

Renal impairment in adult patients (maintenance doses)

CrCl (mL/min/1.73m^2)	Dose	Frequency
50 to 79	500 to 1000mg	every 12 hours
30 to 49	250 to 750mg	every 12 hours
less than 30	250 to 500mg	every 12 hours

Renal replacement therapy consult pharmacy or specialist text

Hepatic impairment

- Give 50% dose reduction of the daily maintenance dose in severe hepatic impairment if the CrCl is less than 60ml/minute/1.73m^2

Storage

Â Store below 25^0C

References

Keppra SPC February 2023

1: Injectable medicines guide, downloaded from Medusa 6th March 2024

2: Status epilepticus guideline, Walton Centre, NHS foundation trust, May 2020

3: GUH Status epilepticus guideline

Therapeutic classification

Antiepileptic