

Drug Name: **Levetiracetam**
Trade Name: **Keppra**

REVISED: **November 1, 2018**

Class:

- Anti-epileptic

Mechanism of Action:

- The exact mechanism by which levetiracetam acts to treat epilepsy is unknown.
- Levetiracetam may selectively prevent hypersynchronization of epileptiform burst firing and propagation of seizure activity. The drug binds to SV2A, a synaptic vesicle glycoprotein, and inhibits presynaptic calcium channels, reducing neurotransmitter release and acting as a neuromodulator. This is believed to impede impulse conduction across synapses.

Indications:

- Seizure control
- Seizure prophylaxis in setting of increased intracranial pressure and subarachnoid hemorrhage (traumatic and spontaneous)

Contraindications:

- Hypersensitivity

Precautions:

- Pregnancy category C

Dosage:

Doses are highly variable and based on institutional guidelines and patient laboratory values. Double check orders with transferring physician.

- **IV/IO Infusion: 500-2000 mg IV infusion over 15 minutes.**

OR

- **IV/IO Infusion: 20 mg/kg over 15 minutes, max of 2000 mg.**

Onset:

- IV/IO: Onset: (IV) Immediate

Duration:

- Based on infusion duration

Side Effects:

- Behavior abnormalities (aggression, agitation, anxiety)
- Hyperkinesia, irritability
- Somnolence, Fatigue
- Hypertension
- Rash, Stephen-Johnson Syndrome, Toxic Epidermal necrolysis (rare)
- Depressed respiratory rate

IFT

REFERENCE ONLY

This document is for **reference only**. Please refer to Physician Order's for specific indications, dosages, and applications

IFT DRUG: Levetiracetam

Interactions:

- May increase the risk of toxic side effects with various amphetamines, including methamphetamine and MDMA.

PEARLS:

Discontinue at first sign of rash or dermatological response. This may be early signs of Stevens-Johnson Syndrome (SJS) or Toxic Epidermal Necrolysis (TEN).

- KEPPRA injection contains 100 mg of levetiracetam per mL. It is supplied in single-use 5 mL vials containing 500 mg levetiracetam. It must be diluted prior to infusion.
 - It is typically diluted to **at least** 100 cc.
 - Keppra may be mixed in a wide variety of crystalloid solutions, including Sodium chloride (0.9%) injection, Lactated Ringer's, and Dextrose 5% injection.
- Levetiracetam is eliminated from the body primarily by the kidneys with about 66 percent of the original drug passed unchanged into urine. The plasma half-life of levetiracetam in adults is about 6 to 8 hours.
 - **Keppra infusions may be adjusted for hepatic and renal impairment.**
- Keppra may often be co-administered with benzodiazepines and Depakote.
- The side effect of hypertension most commonly occurred in children under 4 years of age. Hypertension in older patients should be concerning for other etiologies.

REFERENCE ONLY