

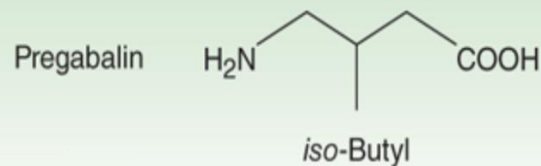
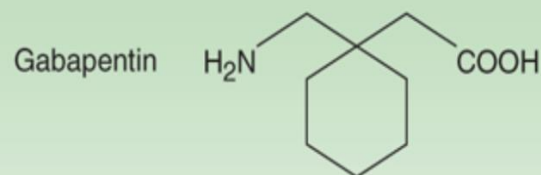
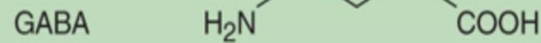
GABAPENTIN


(1-(aminomethyl)cyclohexane acetic acid)

Neurontin[®], Gralise[®], Horizant[®]

MOA

- Structural analog of GABA but no direct GABAergic action
- Proposed MOA: antagonism of N-type Ca channels, NMDA antagonism, enhanced inhibitory input of GABA-mediated pathway, amongst others^{1, 2}



 Pregabalin (Lyrics[®]), similarly, is a GABA analog lacking direct GABAergic action²

Clinical Indications

FDA approved

- Refractory partial seizures
- Post herpetic neuralgia


Off label (not comprehensive)

- Neuropathic pain
- Postoperative pain
- Acute stage herpes zoster
- Migraine prophylaxis
- Anxiety, mood disorders

Dosing


- Varies based on indication
- Post-operative pain: 300 mg to 1.2 g as a single dose given 1-2 hours prior to surgery or immediately following surgery^{2, 3, 4, 5}
- Peri-operative Pregabalin dose: 75 mg – 300 mg²

 Creatinine clearance-based dosing in renal impairment (300 mg for CrCl < 15 ml/min)

 Abrupt discontinuation of chronic therapy can cause seizures
Use with caution in elderly patients at high risk of delirium

Pharmacokinetics

- Only available as oral formulation
- Carrier dependent transport from gut is saturable so bio-availability is dose dependent: 300 mg (~60%), 600 mg (~40%), ~35% for higher doses⁶
- Peak plasma concentrations 3-3.2 hours
- Half-life 4.8-8.7 hours⁶
- Excretion: unmetabolized, first order renal elimination

 Removed by hemodialysis

Perioperative Use

- Perioperative use improves postop opioid cessation in surgical cohort³
- Multimodal analgesia including perioperative gabapentin significantly reduced postoperative opioid use⁴ and pain scores⁵
- Strong recommendation (moderate-quality evidence) for postoperative pain control by American Pain Society⁷

References

1. Cheng and Chiou, *J Pharmacol Sci.* 2006
2. Clarke et al., *Pain Medicine.* 2012
3. Hah et al., *JAMA Surgery.* 2018
4. Mujukian et al., *J Gastrointest Surg.* 2019
5. Ho et al., *Pain.* 2006
6. Rose and Kam, *Anesthesia.* 2002
7. Chou et al., *Journal of Pain.* 2016