Brand Names: Neurontin®

Pharmacologic Category
- Anticonvulsant
- GABA Analog

Dosage Forms:
- Capsule, oral: 100 mg, 300 mg, 400 mg
- Tablet, oral: 600 mg, 800 mg
- Solution, oral: 250 mg/5 mL
- Neurontin®: 100 mg, 300 mg, 400 mg
- Neurontin®: 250 mg/5 mL
- Neurontin®: 600 mg, 800 mg

Mechanism of Action
- Gabapentin is structurally related to GABA, however, it does not bind to GABA_A or GABA_B receptors, and it does not appear to influence synthesis or uptake of GABA.

Pharmacodynamics/Kinetics
- Absorption: 50% to 60% from proximal small bowel
- Half-life elimination: 5-7 hours; anuria 132 hours
- Excretion: Proportional to renal function

Dosing:
- Anticonvulsant:
  - Initial: 300 mg 3 times/day
  - Maintenance: 900-1800 mg/day administered in 3 divided doses up to 3600 mg/day has been tolerated in short-term studies
- Chronic pain (Open label): Oral: 300-1800 mg/day given in 3 divided doses has been the most common dosage range
- Diabetic neuropathy (Open label): 900-3600 mg/day
- Postherpetic neuralgia:
  - Day 1: 300 mg, Day 2: 300 mg twice daily, Day 3: 300 mg 3 times/day; (range: 1800-3600 mg/day)
- Restless legs syndrome (RLS) (Open label):
  - Initial: 300 mg once daily 2 hours before bedtime. Doses ≥600 mg/day have been given in 2 divided doses (late afternoon and 2 hours before bedtime).
  - Maintenance dose: One-third of total daily dose given at 12 pm, remaining two-thirds total daily dose given at 8 pm.
- Vasomotor symptoms associated with menopause (unlabeled use; Butt, 2008): 300 mg 3 times/day

Contraindications: Hypersensitivity to gabapentin or any component of the formulation

Warnings/Precautions
Concerns related to adverse effects:
- CNS depression and impaired physical or mental abilities
- Suicidal ideation, risk observed as early as 1 week after initiation and continued through duration of trials (most trials ≤24 weeks).
Concurrent drug therapy issues:
- Sedatives: Effects with other sedative drugs or ethanol may be potentiated.

Geriatric Considerations
- decrease in clearance as age increases
- calculations of Clcr recommended since dose reductions may be needed.

Pregnancy Risk Factor: C

Lactation
- Enters breast milk/use caution

Breast-Feeding Considerations
- Gabapentin is excreted in human breast milk.
- Use in breast-feeding women only if the benefits to the mother outweigh the potential risk to the infant.

Adverse Reactions
- Central nervous system:
  - Dizziness 17% to 28%
  - somnolence 20%
  - ataxia 13%
  - fatigue 11%
- Cardiovascular:
  - Peripheral edema (2% to 8%)
  - vasodilatation (1%)
- Central nervous system:
  - headache (3%)
  - ataxia (3%)
  - amnesia (2%)
  - depression (2%)
  - dysarthria (2%)
- Dermatologic:
  - Pruritus (1%), rash (1%)
- Endocrine & metabolic: Hyperglycemia (1%)
- Gastrointestinal:
  - Diarrhea (6%)
  - Nausea/vomiting (3% to 4%)
  - Abdominal pain (3%)
  - Xerostomia (2% to 5%)
  - Constipation (2% to 4%)
- Genitourinary: Impotence (2%)
- Hematologic: Leukopenia (1%), WBC decreased (1%)
- Neuromuscular & skeletal:
  - Tremor (7%)
  - Weakness (6%)
  - Hyperkinesia (children 3%)
  - Abnormal gait (2%), back pain (2%), myalgia (2%), fracture (1%)
- Ocular:
  - Nystagmus (8%)
  - Diplopia (1% to 6%)
  - Blurred vision (3% to 4%)
  - Conjunctivitis (1%)
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- Otic: Otitis media (1%)
- Respiratory:
  - Rhinitis (4%)
  - Bronchitis (children 3%)
  - Respiratory infection (children 3%)
  - Pharyngitis (1% to 3%), cough (2%)
- Miscellaneous: Infection (5%)

Allergy and Idiosyncratic Reactions
- GABA Analog Allergy

Drug Interactions
- Alcohol (Ethyl): CNS Depressants may enhance the CNS depressant effect of Alcohol (Ethyl).
- Antacids: May decrease the serum concentration of Gabapentin. Administer gabapentin at least 2 hours after antacid administration.
- CNS Depressants: May enhance the adverse/toxic effect of other CNS Depressants.
- Droperidol: May enhance the CNS depressant effect of CNS Depressants. Management: Consider dose reductions of droperidol or of other CNS agents (e.g., opioids, barbiturates) with concomitant use.
- Ketorolac: May diminish the therapeutic effect of Anticonvulsants.
- Mefloquine: may decrease the serum concentration of Anticonvulsants. Mefloquine is contraindicated for malaria prophylaxis in persons with a history of convulsions.
- Methotrimeprazine: may enhance the CNS depressant effect of CNS Depressants.
- Selective Serotonin Reuptake Inhibitors: CNS Depressants may enhance the adverse/toxic effect of Selective Serotonin Reuptake Inhibitors.
- Ethanol: May increase CNS depression
- Herb/Nutraceutical:
  - Avoid evening primrose (seizure threshold decreased).
  - Avoid valerian, St John's wort, kava kava, gotu kola (may increase CNS depression).

Patient Education
- It may take 2-3 weeks to achieve desired results.
- If prescribed once-a-day, take dose at bedtime.
- Do not stop medication abruptly, may lead to increased seizure activity.
- Avoid alcohol.
- Maintain adequate hydration, unless instructed to restrict fluid intake.

Mental Health Comment
- Double-blind studies have failed to differentiate this drug from placebo when used as an adjunctive treatment for bipolar disorder. Gabapentin may be useful for some of the anxiety disorders.

Note:
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References