gabapentin (ga-ba-**pen**-tin)

Gralise, Horizant, Neurontin

Classification

Therapeutic: analgesic adjuncts, therapeutic, anticonvulsants, mood stabilizers

Pregnancy Category C

Indications

Partial seizures (adjunct treatment) (immediate-release only). Post-herpetic neuralgia. Restless legs syndrome (Horizant only). **Unlabeled Use:** Neuropathic pain. Prevention of migraine headache. Bipolar disorder. Anxiety. Diabetic peripheral neuropathy.

Action

Mechanism of action is not known. May affect transport of amino acids across and stabilize neuronal membranes. **Therapeutic Effects:** Decreased incidence of seizures. Decreased post-herpetic pain. Decreased leg restlessness.

Pharmacokinetics

Absorption: Well absorbed after oral administration by active transport. At larger doses, transport becomes saturated and absorption ↓ (bioavailability ranges from 60% for a 300-mg dose to 35% for a 1600-mg dose).

Distribution: Crosses blood-brain barrier; enters breast milk.

Metabolism and Excretion: Eliminated mostly by renal excretion of unchanged drug.

Half-life: *Adults*—5–7 hr (normal renal function); up to 132 hr in anuria; *Children*—4.7 hr.

TIME/ACTION PROFILE (blood levels)

ROUTE	ONSET	PEAK	DURATION
PO-IR	rapid	2–4 hr	8 hr
PO-SR	unknown	5–8 hr	24 hr

Contraindications/Precautions

Contraindicated in: Hypersensitivity.

Use Cautiously in: All patients (may ↑ risk of suicidal thoughts/behaviors); Renal insufficiency (↓ dose and/or ↑ dosing interval if CCr ≤60 mL/min); ***OB:*** Pregnancy; ***Pedi:*** Children <18 yr (sustained-/extended-release) or <3 yr (immediate-release) (safety not established); ***Lactation:*** Discontinue drug or bottle-feed; ***Geri:*** May be more susceptible to toxicity due to age-related ↓ in renal function.

Adverse Reactions/Side Effects

CNS: SUICIDAL THOUGHTS, confusion, depression, dizziness, drowsiness, sedation, anxiety, concentration difficulties (children), emotional lability (children), hostility, hyperkinesia (children), malaise, vertigo, weakness. **EENT:** abnormal vision, nystagmus. **CV:** hypertension. **GI:** weight gain, anorexia, flatulence, gingivitis. **MS:** RHABDOMYOLYSIS, arthralgia, ↑ creatine kinase. **Neuro:** ataxia, altered reflexes, hyperkinesia, paresthesia. **Misc:** MULTI-ORGAN HYPERSENSITIVITY REACTIONS, facial edema.

Interactions

Drug-Drug: Antacids may ↓ absorption of gabapentin. ↑ risk of CNS depression with other **CNS depressants**, including **alcohol**, **antihistamines**, **opioids**, and **sedative/hypnotics**. **Morphine** ↑ gabapentin levels and may ↑ risk of toxicity, dosage adjustments may be required.

Drug-Natural Products: Kava-kava, **valerian**, or **chamomile** can ↑ CNS depression.

Route/Dosage

The sustained/extended-release formulations should not be interchanged with the immediate-release products.

Epilepsy

PO (Adults and Children >12 yr): 300 mg 3 times daily initially. Titration may be continued until desired (range is 900–1800 mg/day in 3 divided doses; doses should not be more than 12 hr apart). Doses up to 2400–3600 mg/day have been well tolerated.

PO (Children ≥5–12 yr): 10–15 mg/kg/day in 3 divided doses initially titrated upward over 3 days to 25–35 mg/kg/day in 3 divided doses; dosage interval should not exceed 12 hr (doses up to 50 mg/kg/day have been used).

PO (Children 3–4 yrs): 10–15 mg/kg/day in 3 divided doses initially titrated upward over 3 days to 40 mg/kg/day in 3 divided doses; dosage interval should not exceed 12 hr (doses up to 50 mg/kg/day have been used).

Renal Impairment

PO (Adults and Children >12 yr): *CCr 30–59 mL/min*—200–700 mg twice daily; *CCr 15–29 mL/min*—200–700 mg once daily; *CCr 15 mL/min*—100–300 mg once daily; *CCr <15 mL/min*—Reduce daily dose in proportion to CCr.

Post-Herpetic Neuralgia

PO (Adults): *Immediate-release*—300 mg once daily on first day, then 300 mg 2 times daily on second day, then 300 mg 3 times/day on day 3, may then be titrated upward as needed up to 600 mg 3 times/day; *Sustained-release (Gralise)*—300 mg once daily on first day, then 600 mg once daily on second day, then 900 mg once daily on days 3–6, then 1200 mg once daily on days 7–10, then 1500 mg once daily on days 11–14, then 1800 mg once daily thereafter; *Extended-release (Horizant)*—600 mg once daily in the morning on days 1–3, then 600 mg twice daily thereafter.

Renal Impairment

PO (Adults): *CCr 30–59 mL/min*—200–700 mg twice daily (immediate-release); 600–1800 mg once daily (sustained-release [Gralise]); 300 mg once daily in the morning on days 1–3, then 300 mg twice daily thereafter (may ↑ to 600 mg twice daily, as needed) (extended-release [Horizant]); *CCr 15–29 mL/min*—200–700 mg once daily (immediate-release); sustained release [Gralise] not recommended; 300 mg in the morning on days 1 and 3, then 300 mg once daily in the morning thereafter (may ↑ to 300 mg twice daily, as needed) (extended-release [Horizant]); *CCr 15 mL/min*—100–300 mg once daily (immediate-release); sustained release [Gralise] not recommended; *CCr <15 mL/min*—↓ daily dose in proportion to CCr (immediate release); sustained release [Gralise] not recommended; 300 mg every other day in the morning (may ↑ to 300 mg once daily in the morning, as needed) (extended-release [Horizant]); *CCr <15 mL/min (on hemodialysis)*—300 mg after each dialysis session (may ↑ to 600 mg after each dialysis sessions, as needed) (extended-release [Horizant]).

Restless Legs Syndrome

PO (Adults): *Extended-release (Horizant)*—600 mg once daily at 5 pm.

Renal Impairment

(Adults): *CCr 30–59 mL/min*—300 mg once daily at 5 pm; may ↑ to 600 mg once daily at 5 pm as needed ; *CCr 15–29 mL/min*—300 mg once daily at 5 pm; *CCr <15 mL/min*—300 mg every other day; *CCr <15 mL/min (on hemodialysis)*—Not recommended.

Neuropathic Pain (unlabeled use)

PO (Adults): 100 mg 3 times daily initially. Titrate weekly by 300 mg/day up to 900–2400 mg/day (maximum: 3600 mg/day).

PO (Children): 5 mg/kg/dose at bedtime initially then ↑ to 5 mg/kg BID on day 2 and 5 mg/kg TID on day 3. Titrate to effect up to 8–35 mg/kg/day in 3 divided doses.

NURSING IMPLICATIONS

Assessment

- **Monitor closely for notable changes in behavior that could indicate the emergence or worsening of suicidal thoughts or behavior or depression.**
- **Seizures:** Assess location, duration, and characteristics of seizure activity.
- **Post-herpetic Neuralgia & Neuropathic Pain:** Assess location, characteristics, and intensity of pain periodically during therapy.
- **Migraine Prophylaxis:** Monitor frequency and intensity of pain on pain scale.
- **Restless Leg Syndrome**: Assess frequency and intensity of restless leg syndrome prior to and periodically during therapy.
- ***Lab Test Considerations:*** May cause false-positive readings when testing for urinary protein with *Ames N-Multistix SG* dipstick test; use sulfosalicylic acid precipitation procedure.
- May cause leukopenia.

Potential Nursing Diagnoses

Risk for injury (Side Effects)
Chronic pain (Indications)
Ineffective coping (Indications)

Implementation

- **Do not confuse Neurontin with Noroxin (norfloxacin).**
- Doses of *Gralise* and *Horizant* are not interchangeable with other dose forms of gabapentin.
- **PO:** May be administered without regard to meals.
- 600 mg and 800 mg tablets are scored and can be broken to administer a half-tablet. If half-tablet is used, administer other half at the next dose. Discard half-tablets not used within several days.
- Administer *Gralise* with evening meal. Swallow tablet whole, do not crush, break, or chew.
- Administer *Horizant for Restless Leg Syndrome* with evening meal at 5 pm. *Horizant for Post-Herpetic Neuralgia* is administered twice daily. Swallow tablet whole, do not crush, break, or chew.
- Gabapentin should be discontinued gradually over at least 1 wk. If dose is 600 mg/day, may discontinue without tapering. If >600 mg/day, titrate daily to 600 mg for

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1 week, then discontinue. If patient is taking 600 mg twice daily, taper to once daily before discontinuing. Abrupt discontinuation may cause increase in seizure frequency.

Patient/Family Teaching

- Instruct patient to take medication exactly as directed. Patients on tid dosing should not exceed 12 hr between doses. Take missed doses as soon as possible; if less than 2 hr until next dose, take dose immediately and take next dose 1–2 hr later, then resume regular dosing schedule. Do not double dose. Do not discontinue abruptly; may cause increase in frequency of seizures. Instruct patient to read the *Medication Guide* before starting and with each Rx refill, changes may occur.
- Advise patient not to take gabapentin within 2 hr of an antacid.
- Gabapentin may cause dizziness and drowsiness. Caution patient to avoid driving or activities requiring alertness until response to medication is known. Seizure patients should not resume driving until physician gives clearance based on control of seizure disorder.
- **Advise patient and family to notify health care professional if thoughts about suicide or dying, attempts to commit suicide; new or worse depression; new or worse anxiety; feeling very agitated or restless; panic attacks; trouble sleeping; new or worse irritability; acting aggressive; being angry or violent; acting on dangerous impulses; an extreme increase in activity and talking, other unusual changes in behavior or mood occur.**
- Instruct patient to notify health care professional of medication regimen before treatment or surgery.
- Advise female patient to notify health care professional if pregnancy is planned or suspected or if breast feeding.
- Advise patient to carry identification describing disease process and medication regimen at all times.

Evaluation/Desired Outcomes

- Decreased frequency of or cessation of seizures.
- Decreased post-herpetic neuralgia pain.
- Decreased intensity of neuropathic pain.
- Decreased frequency of migraine headaches.
- Increased mood stability.
- Decrease effects of restless leg syndrome.

Why was this drug prescribed for your patient?