**nortriptyline** (nor-tri-pil-lyne)

- **Generic Implication:**
  - **Indications:** Various forms of depression. **Unlabeled Use:** Management of chronic neuropathic pain.
  - **Action:** Promotes the effect of serotonin and norepinephrine. Has significant anticholinergic properties.
  - **Therapeutic Effects:** Antidepressant action that develops slowly over several weeks.

### Pharmacokinetics

- **Absorption:** Well absorbed after oral administration.
- **Distribution:** Widely distributed. Enters breast milk in small amounts; probably crosses the placenta.
- **Metabolism:** Mostly metabolized by the liver (CYP2D6 isoenzyme).
- **Excretion:** Urinary excretion.
- **Half-life:** 18–28 hr.

### Elimination

- **Protein Binding:** 92%.

### Pharmacodynamic Properties

- **TIME/ACTION PROFILE (antidepressant effect)**
  - ROUTE
    - Onset
    - Peak
    - Duration
  - PO
  - 2–3 wk
  - 6 wk
  - unknown

### Contraindications/Precautions

- **Contraindicated in:** Hypersensitivity, angle-closure glaucoma, alcohol intolerance (solution only).
- **Use Cautiously in:**
  - Pre-existing cardiovascular disease; History of seizures; Pre-existing urinary retention.
  - OB: Pregnancy Category D
  - Geri: More susceptible to adverse reactions; dose reduction during pregnancy if clearly needed and maternal benefits outweigh risk to fetus.
  - Lact: Safe to use during lactation.
  - Pedi: Safety not established in children.
  - Drug Interactions: Concurrent use with MAO inhibitors. Nortriptyline should be stopped at least 14 days before MAO inhibitor therapy.
  - Unlabeled Use: Management of chronic neurogenic pain.

### Interactions

- **Drug-Class Interactions:**
  - CNS depressants
  - Sedative/hypnotics
  - Anticholinergics
  - Adrenergic agents
  - Beta-blockers
  - Calcium channel blockers
  - Other antihypertensives
  - Other antipsychotics
  - Other antidepressants
  - Antithyroid agents
  - Hormonal contraceptives

### Adverse Reactions/Side Effects

- **CNS:** Sedation, tremor, fatigue, dizziness, headache, nervousness, hallucinations, insomnia, palpitations.
- **CV:** Palpitations, hypotension, tachycardia, bradycardia, arrhythmias, obstructive or atypical syndromes.
- **EENT:** Blurred vision, dry eyes
- **GI:** Nausea, vomiting, paralytic ileus, dry mouth, constipation, diarrhea, abdominal pain.
- **GU:** Urinary retention.
- **Hemat:** Platelet dysfunction.
- **Skin:** Photosensitivity, rash, pruritus, urticaria.
- **Miscellaneous:** Systemic lupus erythematosus, fever, rash, rash, pruritus, urticaria.

### Notes

- **Use Cautiously in:** Pre-existing cardiovascular disease; History of seizures; Pre-existing urinary retention.
- **Dose Adjustments:** Strikethrough the CYP2D6 enzyme system exhibits genetic polymorphism; some patients may be poor metabolizers (PMs) and may have significantly reduced plasma concentrations and an increased risk of adverse effects.

### Notes

- **CYP2D6 Enzyme System:**
  - Some patients may be poor metabolizers (PMs) and may have significantly reduced plasma concentrations and an increased risk of adverse effects.

### Drug-Drug Interactions

- **Drug-Agent Interactions:**
  - Concurrent use with MAO inhibitors or MAO-like drugs (linezolid or methylene blue). May prevent the therapeutic response to most other antidepressants.
  - Antidepressants: Concurrent use with MAO inhibitors can result in serious potentially fatal reactions (NMS). MAO inhibitors should be stopped at least 14 days before nortriptyline therapy. Nortriptyline should be stopped at least 14 days before MAO inhibitor therapy.

### Additional Information

- **Monitoring:** Monitor for signs/symptoms of serotonin syndrome for 2 wk or until 24 hr after last dose of linezolid or methylene blue; immediately discontinue nortriptyline and monitor for signs/symptoms of serotonin syndrome.
- **Patient Education:**
  - Do not stop nortriptyline therapy abruptly; taper gradually.
  - May result in serious potentially fatal reactions (NMS). MAO inhibitors should be stopped at least 14 days before nortriptyline therapy. Nortriptyline should be stopped at least 14 days before MAO inhibitor therapy.

### Drug-Drug Interactions

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### Additional Information

- **Monitoring:** Monitor for signs/symptoms of serotonin syndrome for 2 wk or until 24 hr after last dose of linezolid or methylene blue; immediately discontinue nortriptyline and monitor for signs/symptoms of serotonin syndrome.
Drug-Natural Products: Concomitant use of kava-kava, valerian, or chamomile can cause CNS depression. Use with St. John's wort of serotonin syndrome and anticholinergic effects with jimson weed and scopolia.

Route/Dosage
PO (Adults): 25 mg 3–4 times daily, up to 150 mg daily.
PO (Geriatric Patients or Adolescents): 30–50 mg/day in divided doses or as a single dose.

NURSING IMPLICATIONS
Assessment
- Monitor mental status (orientation, mood, behavior).
- Assess weight and BMI initially and throughout treatment. For overweight/obese individuals, monitor fasting blood glucose and cholesterol levels.
- Monitor BP and pulse rate before and during initial therapy. Report significant decreases in BP or a sudden increase in pulse rate.
- Monitor baseline and periodic ECGs in geriatric patients or patients with heart disease. May cause prolonged PR and QT intervals and may flatten T waves.
- Assess for suicidal tendencies, especially during early therapy. Restrict amount of drug available to patient. Risk may be increased in children, adolescents, and adults 65 yrs.
- After starting therapy, children, adolescents, and young adults should be seen by health care professional at least weekly for 4 wk, every 3 wk for next 4 wk, and on advice of health care professional thereafter.
- Pain: Assess type, location, and severity of pain before and periodically during therapy. Use pain scale to monitor effectiveness of medication.
- Lab Test Considerations: Assess leucocyte and differential blood counts, liver function, and serum glucose periodically. May cause renal insufficiency and alkalosis. May cause bone marrow depression. Serum glucose may be altered.
- Serum levels may be monitored in patients who fail to respond to usual therapeutic dose. Therapeutic plasma concentration range is 50–150 ng/mL.

Implementation
- Taper to avoid withdrawal effects. Reduce dose 50% for 3 days, then by 50% for 3 more days, then discontinue.
- PO: Administer medication with meals to minimize gastric irritation.
- May be given as a single dose at bedtime to minimize sedation during the day. Dose increases should be made at bedtime because of sedation.

Patient/Family Teaching
- Instruct patient to take medication as directed. Take missed doses as soon as possible unless almost time for next dose; if regimen is a single dose at bedtime, do not take in the morning before starting medication.
- Advise patient that drug effects may not be noticed for at least 2 wk; sleep disturbances may occur. Monitor patient if sleep disturbances occur. Notify health care professional if periodic glaucoma testing may be required during long-term therapy.
- Advise patient to make position changes slowly to minimize orthostatic hypotension.
- Advise patient to look for suicidality, especially during early therapy or dose changes. Notify health care professional immediately if thoughts about suicide or dying, attempts to commit suicide, new or worse depression or anxiety, agitation or restlessness, panic attacks, insomnia, new or worse irritability, aggressiveness, acting on dangerous impulses, mania, or other changes in mood or behavior or any of symptoms of serotonin syndrome occur.

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- Advise patient to avoid alcohol or other CNS depressant drugs during therapy and for at least 3–7 days after therapy has been discontinued.
- Instruct patient to notify health care professional if symptoms of urinary retention occur or if dry mouth or constipation persists. Sugarless candy or gum may diminish dry mouth, and an increase in fluid intake or bulk may prevent constipation. If symptoms persist, dose reduction or discontinuation may be necessary. Consult health care professional if dry mouth persists for more than 2 wk.
- Caution patient to use sunscreen and protective clothing to prevent photosensitivity reactions.
- Alert patient that urine may turn blue-green in color.
- Instruct patient to monitor dietary intake. Increased appetite may lead to undesired weight gain. Refer as appropriate for nutritional, weight, or medical management.
- May have teratogenic effects. Instruct patient to notify health care professional immediately if pregnancy is planned or suspected.
- Advise patients to notify health care professional of medication regimen before treatment or surgery.

Evaluation/Desired Outcomes

- Increased sense of well-being.
- Renewed interest in surroundings.
- Increased appetite.
- Improved energy levels.
- Improved sleep.
- Decrease in severity of chronic neurogenic pain. Patients may require 2–6 wk of therapy before full therapeutic effects of medication are seen.

Why was this drug prescribed for your patient?

- Cautions: drug name
- Genetic Implication: CAPI TALS indicate if life-threatening, underline indicate most frequent. Strikethrough indicate discontinued.