**Imipramine** (im-ip-ra-meen)

- **Brand Names:** Impril, Tofranil, Tofranil PM
- **Classification:** Antidepressants
  - Pharmacologic: Tricyclic antidepressants
- **Pregnancy Category:** C

## Indications
Various forms of depression, Enuresis in children. **Unlabeled Use:** Adjunct in the management of chronic pain, incontinence (in adults), vascular headache prophylaxis, chronic headache, migraine.

## Action
Potentiates the effect of serotonin and norepinephrine. Has significant anticholinergic properties. **Therapeutic Effects:** Antidepressant action that develops slowly over several weeks.

## Pharmacokinetics
- **Absorption:** Well absorbed from the GI tract.
- **Distribution:** Widely distributed. Probably crosses the placenta and enters breast milk.
- **Protein Binding:** 89–95%.
- **Metabolism and Excretion:** Mostly metabolized by the liver (CYP2D6 isoenzyme) to desipramine; the CYP2D6 enzyme system exhibits genetic polymorphism; 7% of population may be poor metabolizers (PMs) and may have significantly higher imipramine concentrations and an increased risk of adverse effects.
- **Half-life:** 8–16 hr.

## Contraindications/Precautions
- Contraindicated in: Hypersensitivity; Cross-sensitivity with other antidepressants may occur; Angle-closure glaucoma; Recent MI, known history of QTc interval prolongation, heart failure.; Concurrent use of MAO inhibitors or MAO-like drugs (linezolid or methylene blue).
- Use Cautiously in: Pre-existing cardiovascular disease; Seizures or history of seizure disorder; May increase risk of suicide attempt/ideation especially during early treatment or dose adjustment; **Caution:** Drug is present in breast milk; discontinue or bottle feed; Geri: More susceptible to adverse reactions. Geriatric males with prostatic hyperplasia are more susceptible to urinary retention.

## Adverse Reactions/Side Effects
- **CNS:** Suicidal thoughts, drowsiness, agitation, confusion, hallucinations, insomnia.
- **EENT:** Blurred vision, dry eyes.
- **CV:** Arrhythmias, hypotension, ECG changes.
- **GI:** Constipation, dry mouth, nausea, paralytic ileus, weight gain.
- **GU:** Urinary retention, libido.
- **Derm:** Photosensitivity.
- **Endo:** Gynecomastia.
- **Hemat:** Blood dyscrasias.
- **Interactions**
  - **Drug-Drug:** Concurrent use with MAO inhibitors may result in serious potentially fatal reactions (MAO inhibitors should be stopped at least 14 days before imipramine therapy). Concurrent use with MAO-inhibitor like drugs, such as linezolid or methylene blue may result in serotonin syndrome; concurrent use contraindicated; do not start therapy in patients receiving linezolid or methylene blue; if linezolid or methylene blue need to be started in a patient receiving imipramine, immediately discontinue imipramine and monitor for signs/symptoms of serotonin syndrome for 2 wk or until 24 hr after last dose of linezolid or methylene blue, whichever comes first (may resume imipramine therapy 24 hr after last dose of linezolid or methylene blue). Concurrent use with SSRI antidepressants may result in toxicity and should be avoided; clonidine should be stopped 5 wk before. Hypertensive crisis may occur with clonidine. Imipramine is metabolized in the liver by the cytochrome P450 2D6 enzyme and its action may be affected by drugs that compete for metabolism by this enzyme including other antidepressants, phenothiazines, carbamazepine, class 1C antiarrhythmics (propafenone, flecainide), when used concurrently, dose reduction of one or the other or both may be necessary. Concurrent use of other drugs that inhibit the activity of the enzyme, including

## Time/Action Profile (Antidepressant Effect)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>PO</td>
<td>hours</td>
<td>2–6</td>
<td>weeks</td>
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This knowledge is intended for educational purposes only and is not a substitute for professional medical advice, diagnosis, or treatment. Always consult a qualified healthcare provider regarding any questions you may have.
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**Adrenergic effects.** Adrenergic effects with imipramine. Concurrent use with anticholinergic effects with SSRIs alter effects. Drugs that affect serotonergic neurotransmitter systems, including eldepryl and may cause toxicity. Having these properties:

- Obtain weight and BMI initially and regularly throughout therapy.
- Monitor plasma levels in treatment-resistant patients.
- Monitor BP and pulse rate prior to and during initial therapy.
- Assessment

**NURSING IMPLICATIONS**

-**PO (Adults):**
  - 25–50 mg 3–4 times daily (not to exceed 300 mg/day), total daily dose may be given at bedtime.

-**PO (Children >12 yr):**
  - Delayed release—25–50 mg/day in divided doses (not to exceed 100 mg/day).

-**PO (Children 6–12 yr):**
  - Delayed release—10–30 mg/day in divided doses.

-**PO (Children 6 yr):**
  - Enuresis—25 mg once daily 1 h before bedtime. If necessary by 25 mg at weekly intervals to 50 mg in children >12 yr, up to 75 mg in children >12 yr.

**Assessment**

- Monitor BP and pulse rate prior to and during initial therapy.
- Monitor plasma levels in treatment-resistant patients.
- Monitor weight and BMI initially and periodically throughout therapy.
- For overweight/obese individuals, obtain FBS and cholesterol levels. Refer as appropriate for nutrition/weight management and medical management.
- Obtain weight and BMI initially and regularly throughout therapy.
- Assess for suicidal tendencies, especially during early therapy. Restrict amount of drug available to patient. Risk may be increased in children, adolescents, and adults ≥18 yrs. After starting therapy, children, adolescents, and young adults should be seen by health care professional at least weekly for 1 wk, every 3 wk for next 4 wk, and on advice of health care professional thereafter.
- Pain: Assess location, duration, and severity of pain periodically during therapy. Use pain scale to monitor effectiveness of therapy.
- Lab Test Considerations: Assess leukocyte and differential blood counts and renal and hepatic functions prior to and periodically during prolonged or high-dose therapy.
- Toxicity and Overdose: Symptoms of acute overdose include disturbed concentration, confusion, restlessness, agitation, seizures, delirium, tremor, ataxia, hypothermia, coma, and respiratory and cardiac depression.

**Treatment of overdose includes gastric lavage, activated charcoal, and a stimulant cathartic. Maintain respiratory and cardiac function (monitor ECG for at least 5 days) and temperature. Medications may include digitalis for HF, antiarrhythmics, and anticonvulsants.**

**Potential Nursing Diagnoses**

- Ineffective coping (indications)
- Impaired urinary elimination (indications) (side effects)

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CONTINUED
Implementation

- Dose increases should be made at bedtime because of sedation. Dose titration is a slow process; may take weeks to months. May be given as a single dose at bedtime to minimize sedation during the day.
- Taper to avoid withdrawal effects. Reduce by 50% for 3 days, then reduce by 50% for 3 days, then discontinue.
- PO: Administer with food or immediately following meals to minimize gastric irritation.
- IM: May be slightly yellow or red in color. Crystals may develop if solution is cool; place ampule under warm running water for 5 min to dissolve.

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 because of side effects. Advise patient that drug effects may not be noticed for at least 2 wk. Abrupt discontinuation may cause nausea, vomiting, diarrhea, headache, tachycardia, or palpitations.
- May cause drowsiness and blurred vision. Caution patient to avoid driving and other activities requiring alertness until response to drug is known.
- Instruct patient to notify health care professional if visual changes occur. Inform patient that periodic glaucoma testing may be needed during long-term therapy.
- Caution patient to use sunscreen and protective clothing to prevent photosensitivity reactions.
- Inform patient of need to monitor urinary function and to limit fluid intake. Instruct patient to notify health care professional if urinary retention, 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.

Evaluation/Desired Outcomes

- Increased sense of well-being.
- Renewed interest in surroundings.
- Improved appetite.
- Improved energy level.
- Pain relief.
- Diminished incidence of enuresis.
- Improved sleep in patients treated for depression. Patient may require 2–6 wk of therapy before full therapeutic effects of medication are noticeable.
- Control of bedwetting in children 6 yr.
- Decrease in chronic neurogenic pain.

Why was this drug prescribed for your patient?