methimazole (meth-**im**-a-zole)

Tapazole

Classification

Therapeutic: antithyroid agents

Pregnancy Category D

Indications

Palliative treatment of hyperthyroidism. Used as an adjunct to control hyperthyroidism in preparation for thyroidectomy or radioactive iodine therapy.

Action

Inhibits the synthesis of thyroid hormones. **Therapeutic Effects:** Decreased signs and symptoms of hyperthyroidism.

Pharmacokinetics

Absorption: Rapidly absorbed following oral administration.
Distribution: Crosses the placenta and enters breast milk in high concentrations.
Metabolism and Excretion: Mostly metabolized by the liver; <10% eliminated unchanged by the kidneys.
Half-life: 3–5 hr.

TIME/ACTION PROFILE (effect on thyroid function)

ROUTE	ONSET	PEAK	DURATION
PO	1 wk	4–10 wk	wk

Contraindications/Precautions

Contraindicated in: Hypersensitivity; ***Lactation:*** Lactation.
Use Cautiously in: Patients with ↓ bone marrow reserve; Patients >40 yr (↑ risk of agranulocytosis); ***OB:*** May be used cautiously; however, thyroid problems may occur in the fetus.

Adverse Reactions/Side Effects

CNS: drowsiness, headache, vertigo. **GI:** diarrhea, hepatotoxicity, loss of taste, nausea, parotitis, vomiting. **Derm:** rash, skin discoloration, urticaria. **Hemat:** AGRANULOCYTOSIS, anemia, leukopenia, thrombocytopenia. **MS:** arthralgia. **Misc:** fever, lymphadenopathy.

Interactions

Drug-Drug: Additive bone marrow depression with **antineoplastics** or **radiation therapy**. Antithyroid effect may be ↓ by **potassium iodide** or **amiodarone**. ↑ risk of agranulocytosis with **phenothiazines**. May alter response to **warfarin** and **digoxin**.

Route/Dosage

PO (Adults): *Thyrotoxic crisis*—15–20 mg q 4 hr during the first 24 hr (with other interventions). *Hyperthyroidism*—15–60 mg/day as a single dose or divided doses for 6–8 wk. *Maintenance*—5–30 mg/kg as a single dose or 2 divided doses.
PO (Children): *Initial*—400 mcg (0.4 mg)/kg/day in single dose or 2 divided doses. *Maintenance*—200 mcg/kg/day in single dose or 2 divided doses.

NURSING IMPLICATIONS

Assessment

- Monitor response for symptoms of hyperthyroidism or thyrotoxicosis (tachycardia, palpitations, nervousness, insomnia, fever, diaphoresis, heat intolerance, tremors, weight loss, diarrhea).
- Assess for development of hypothyroidism (intolerance to cold, constipation, dry skin, headache, listlessness, tiredness, or weakness). Dose adjustment may be required.
- Assess for skin rash or swelling of cervical lymph nodes. Treatment may be discontinued if this occurs.
- ***Lab Test Considerations:*** Monitor thyroid function studies prior to therapy, monthly during initial therapy, and every 2–3 mo during therapy.
- **Monitor WBC and differential counts periodically during therapy. Agranulocytosis may develop rapidly; usually occurs during the first 2 mo and is more common in patients over 40 yr and those receiving >40 mg/day. This necessitates discontinuation of therapy.**
- May cause ↑ AST, ALT, LDH, alkaline phosphatase, serum bilirubin, and prothrombin time.

Potential Nursing Diagnoses

Noncompliance (Patient/Family Teaching)

Implementation

- **Do not confuse methimazole with metolazone.**
- **PO:** Administer at same time in relation to meals every day. Food may either increase or decrease absorption.

Patient/Family Teaching

- Instruct patient to take medication as directed, around the clock. Take missed doses as soon as remembered; take both doses together if almost time for next dose; check with health care professional if more than 1 dose is missed. Consult health care professional prior to discontinuing medication.
- Instruct patient to monitor weight 2–3 times weekly. Notify health care professional of significant changes.
- May cause drowsiness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.
- Advise patient to consult health care professional regarding dietary sources of iodine (iodized salt, shellfish).
- **Advise patient to report sore throat, fever, chills, headache, malaise, weakness, yellowing of eyes or skin, unusual bleeding or bruising, rash, or symptoms of hyperthyroidism or hypothyroidism promptly.**
- Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult with health care professional before taking other medications.
- Advise patient to carry identification describing medication regimen at all times.
- Advise patient to notify health care professional of medication regimen prior to treatment or surgery.
- Emphasize the importance of routine exams to monitor progress and to check for side effects.

Evaluation/Desired Outcomes

- Decrease in severity of symptoms of hyperthyroidism (lowered pulse rate and weight gain).
- Return of thyroid function studies to normal.
- May be used as short-term adjunctive therapy to prepare patient for thyroidectomy or radiation therapy or may be used in treatment of hyperthyroidism. Treatment from 6 mo to several yr may be necessary, usually averaging 1 yr.

Why was this drug prescribed for your patient?