methimazole (meth-im-a-zole)

Topical

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)

<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>1 wk</td>
<td>4–10 wk</td>
<td>wk</td>
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Contraindications/Precautions
Contraindicated in: Hypersensitivity; Lactation.

Use Cautiously in: Patients with bone marrow reserve; Patients 40 yr; 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, 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 4–8 wk. Maintenance—5–30 mg/day 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 hypothyroidism (achyactic, palpitations, nervousness, insomnia, fever, diaphoresis, heat intolerance, tachycardia, weight loss, diarrhea).
- Assess for development of hypothyroidism (intolerance to cold, constipation, dry skin, headache, lethargy, tenderness, 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 WBC and differential counts periodically during therapy. Agranulocytosis may develop rapidly; usually occurs during the first 2 mon and is more common in patients over 40 yr and those receiving > 40 mg/day. This necessitates discontinuation of therapy.
- Monitor TSH, AST, ALT, alkaline phosphatase, serum bilirubin, and prothrombin time.

Potential Nursing Diagnoses
Noncompliance (Patient/Family Teaching)

Potential Complications
Discontinued
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

- Do not confuse methimazole with metolazone.
- PO: Administer at same time in relation to meals every day. Food may either increase or decrease absorption.
- 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 measure 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 (iodine 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 any other medications.
- 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 mos to several yr may be necessary, usually averaging 1 yr.

Why was this drug prescribed for your patient?