### glimepiride (gly-ee-me-pye-ride)

**High Alert**

**Classification**
- Therapeutic: antidiabetics
- Pharmacologic: sulfonylureas

**Pregnancy Category:** C

### Indications
PO: Control of blood sugar in type 2 diabetes mellitus when diet therapy fails. Requires some pancreatic function.

### Action
Lower blood sugar by stimulating the release of insulin from the pancreas and increasing the sensitivity to insulin at receptor sites. May also decrease hepatic glucose production. May be used concurrently with metformin when the combination of diet, exercise, and either drug alone fails to produce glycemic control.

### Therapeutic Effects:
Lowering of blood sugar in diabetic patients.

### Pharmacokinetics
- **Absorption:** Well absorbed following oral administration.
- **Distribution:** Unknown.
- **Protein Binding:** 99.5%.
- **Metabolism and Excretion:** Mostly metabolized by the liver; one metabolite has hypoglycemic activity.
- **Half-life:** 5–9.2 hr.

**TIME/ACTION PROFILE (hypoglycemic activity)**

<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>unknown</td>
<td>2–3 hr</td>
<td>24 hr</td>
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### Contraindications/Precautions
- **Contraindicated in:** Hypersensitivity; Hypersensitivity to sulfonamides (cross-sensitivity may occur); Type 1 diabetes; Diabetic coma or ketoacidosis; Severe renal, hepatic, thyroid, or other endocrine disease; Uncontrolled infection, severe burns, or trauma.

### Adverse Reactions/Side Effects
- **CNS:** Dizziness, drowsiness, headache, weakness.
- **GI:** Constipation, cramps, diarrhea, drug-induced hepatitis, dyspepsia, appetite, nausea, vomiting.
- **Derm:** Photosensitivity, rashes.
- **Endo:** Hypoglycemia.
- **F and E:** Hyponatremia.
- **Hemat:** Hemolytic anemia, thrombocytopenia.

### Interactions
- **Drug-Drug:** Ingestion of alcohol may result in disulfiram-like reactions. Effectiveness may be impaired by concurrent use of diuretics, corticosteroids, phenothiazines, oral contraceptives, estrogen, thyroid preparations, niacin, and phenytoin. Alcohol androgens (testosterone), chloramphenicol, clarithromycin, disopyramide, fluoroquinolones, fluoxetine MAO inhibitors, NSAIDs (except diclofenac), salicylates, sulfonamides, and warfarin may raise risk of hypoglycemia. Close monitoring is recommended during any changes in dose. Beta-adrenergic blockers may mask the signs and symptoms of hypoglycemia. May lower cyclosporine levels.

### Route/Dosage
**PO (Adults):**
- 1–2 mg once daily initially; may be increased q1–2 wk up to 8 mg/day (usual range 1–4 mg/day).

### Nursing Implications
- **Assessment:**
  - Observe caution for signs and symptoms of hypoglycemic reactions (sweating, hunger, weakness, dizziness, tremor, tachycardia, anxiety). Patients on concurrent beta-blocker therapy may have very subtle signs of hypoglycemia.
  - Assess patient for ability to swallow tablets.
- **Lab Test Considerations:** Monitor serum glucose and glycosylated hemoglobin periodically during therapy to evaluate effectiveness.

May cause an increase in AST, ALT, LDH, BUN, and serum creatinine.

Hypoglycemia may be treated with administration of oral glucose. Severe hypoglycemia should be treated with 0.5–1.0 g/kg followed by continuous IV infusion of 10% glucose solution at a rate sufficient to keep serum glucose at approximately 100 mg/dL.

Potential Nursing Diagnoses
- Imbalanced nutrition: more than body requirements (Indications)
- Noncompliance (Patient/Family Teaching)

Implementation
- High Alert: Accidental administration of oral hypoglycemic agents to non-diabetic adults and children has resulted in serious harm or death. Before administering, confirm that patient has Type 2 diabetes.
- Do not confuse Amaryl with Reminyl.
- Patients stabilized on a diabetic regimen who are exposed to stress, fever, trauma, infection, or surgery may require administration of insulin.
- To convert from other oral hypoglycemic agents, gradual conversion is not required.
- PO: May be administered once in the morning with breakfast or the main meal.

Patient/Family Teaching
- Instruct patient to take medication at same time each day. Take missed doses as soon as remembered unless almost time for next dose. Do not take if unable to eat.
- Explain to patient that this medication controls hyperglycemia but does not cure diabetes. Therapy is lifelong.
- Review signs of hyperglycemia and hypoglycemia with patient. If hyperglycemia occurs, advise patient to drink a glass of orange juice or 1 oz of any usual sweetened beverage.
- Encourage patient to follow prescribed diet, medication, and exercise regimen to prevent hypoglycemic or hyperglycemic episodes.
- Instruct patient to report signs of hypoglycemia and hyperglycemia. These tests should be closely monitored during periods of stress or illness and health care professional notified if significant changes occur.
- Concurrent use of alcohol may cause a disulfiram-like reaction (abdominal cramps, nausea, flushing, headache, and hypoglycemia).
- May occasionally cause dizziness or drowsiness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.
- Caution patient to avoid other medications, especially aspirin and alcohol, while on this therapy without consulting health care professional.
- Caution patient to use sunscreen and protective clothing to prevent photosensitivity reactions.
- Advise patient to inform health care professional of medication regimen prior to treatment or surgery.
- Advise patient to notify health care professional promptly if unusual weight gain, swelling of ankles, shortness of breath, muscle cramps, weakness, sore throat, rash, or unusual bleeding or bruising occurs.
- Follow the recommended method of controlling blood sugar during pregnancy.
- Caution female patients to use a form of contraception other than oral contraceptives and to notify health care professional promptly if pregnancy is planned or suspected.
- Advise patient to carry a form of sugar (sugar packets, candy) and identification describing disease process and medication regimen at all times.

Evaluation/Desired Outcomes
- Control of blood glucose levels without the appearance of hypoglycemic or hyperglycemic episodes.

Why was this drug prescribed for your patient?