**High Alert**

glyBURIDE (gly-byoo-ride)

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

**Action**
Lowers 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.

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

**Pharmacokinetics**
- **Absorption:** Well absorbed following oral administration; micronized forms have better absorption.
- **Distribution:** Reaches high concentrations in bile and crosses the placenta.
- **Metabolism and Excretion:** Mostly metabolized by the liver (primarily by CYP2C9).
- **Half-life:** 10 hr.

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

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<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tr>
<td>PO</td>
<td>45–60 min</td>
<td>1.5–3 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; Concurrent use of bosentan.
- **Use Cautiously in:** Severe cardiovascular or hepatic disease; Glucose 6-phosphate dehydrogenase deficiency (↑ risk of hemolytic anemia); Geri: ↓ sensitivity; Severe renal disease (↑ risk of hypoglycemia); Infection, stress, or changes in diet may alter requirements for control of blood sugar; Impaired renal, liver, or adrenal function; Malnutrition, high fever, prolonged nausea, or vomiting; OB: lactation—Safety not established; insulin recommended during pregnancy.

**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:** Aplastic anemia, agranulocytosis, hemolytic anemia, leukopenia, pancytopenia, thrombocytopenia.

**Interactions**
- **Drug-Drug:** ↑ risk of elevated liver enzymes when used with bosentan (avoid concurrent use). Ingestion of alcohol may result in disulfiram-like reaction. Effectiveness may be ↓ by concurrent use of diuretics, corticosteroids, phenothiazines, oral contraceptives, estrogens, thyroid preparations, phenytoin, nicotinic acid, sympathomimetics, rifampin, isoniazid, alcohol, antidiuretics (osmotic diuretics), chloramphenicol, ACE inhibitors, disopyramide, disulfiram, clindamycin, fluoroquinolones, MAO inhibitors, NSAIDs (except diclofenac), salicylates, sulfonamides, warfarin may ↑ the risk of hypoglycemia. Concurrent use with warfarin may alter the response to both agents (↑ effects of both initially, then ↓ activity); close monitoring recommended during any changes in dose. Beta-adrenergic blockers may mask the signs and symptoms of hypoglycemia. May ↑ cyclosporine levels. Cessation may ↓ effects, administer glyburide as ↓ as 4 hr before cyclosporine.

**Route/Dosage**
The nonmicronized formulation (Diabeta) cannot be used interchangeably with the micronized formulation (Glynase PresTab).

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<th>ROUTE</th>
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<tr>
<td>PO</td>
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<tr>
<td></td>
<td>DiaBeta (nonmicronized) — 2.5–5 mg once daily initially (range 1.25–20 mg/day). Glynase PresTab (micronized) — 1.5–3 mg/day initially; may be ↑ by 1.5 mg/day weekly.</td>
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<td>Geriatric Patients: DiaBeta (nonmicronized) — 1.25–2.5 mg/day initially; may be ↑ by 0.5 mg/day weekly. Glynase PresTab (micronized) — 0.75–1.5 mg/day; may be ↑ by 0.5 mg/day weekly.</td>
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**Overdosage**
- **PO:** Symptomatic and supportive; glucose should be given as 5% to 10% dextrose; hypoglycemia may be treated with glucagon (0.5–1 mg im/slow inj) or 50% glucose (10–20 ml); if seizures occur, use diazepam (10 mg im/iv).
NURSING IMPLICATIONS

Assessment
- Observe 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 and symptoms of hypoglycemia.
- Assess patient for ability to swallowed solids.
- Lab Test Considerations: Monitor serum glucose and glycosylated hemoglobin periodically during therapy to evaluate effectiveness.
- Systolic BP > 100, HR > 100, and severe reactions.
- Toxicity and Overdose: Overdose is manifested by symptoms of hypoglycemia. Mild hypoglycemia may be treated with administration of oral glucose. Severe hypoglycemia should be treated with IV D50W followed by continuous IV infusion of more dilute dextrose solution at 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-dose: Accidental administration of oral hypoglycemic agents to non-diabetic adults or children has resulted in serious harm or death.
- Do not confuse Diabeta with Zebeta.
- 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. For insulin dose of less than 20 units/day, change to glyburide can be made without gradual dose adjustment. Patients taking 20 or more units/day should convert gradually by receiving glyburide and a 25–30% reduction in insulin dose every day or every 2nd day with gradual insulin dose reduction as tolerated. Monitor serum or glucose and ketones at least 3 times/day during conversion.
- PO: May be administered once in the morning or divided into 2 doses. Administer with meals to ensure best diabetic control and to minimize gastric irritation. Do not administer after last meal of the day.

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.
- Concurrent use of alcohol may cause a disulfiram-like reaction (abdominal cramps, nausea, flushing, headaches, and hypoglycemia).
- Encourage patient to follow prescribed diet, medication, and exercise regimen to prevent hypoglycemia or hyperglycemia episodes.
- Instruct patient to report symptoms of hypoglycemia and hyperglycemia. These tests should be closely monitored during periods of stress or illness and health care professional consulted if significant changes occur.
- Monitor patient to avoid driving or other activities requiring alertness until response to medication is known.
- Caution patient to avoid aspirin and alcohol while on this therapy without consulting health care professional.
- Caution patient to increase intake of fluids and potassium while on this therapy for prevention of potassium deficiency.
CONTINUED

glyBURIDE

Evaluation/Desired Outcomes

- Control of blood glucose levels without the appearance of hypoglycemic or hyperglycemic episodes.

Why was this drug prescribed for your patient?