**TOLAZamide** (tol-a-za-mide)

**Classification**
Therapeutic: antidiabetics
Pharmacologic: sulfonylureas

**Pregnancy Category C**

**Indications**
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.
- **Distribution:** Unknown.
- **Protein Binding:** 94%.
- **Metabolism and Excretion:** Mostly metabolized by the liver; some conversion to metabolites with hypoglycemic activity.
- **Half-life:** 5 hr.

**Pharmacodynamics**

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>60 min</td>
<td>3–4 hr</td>
<td>10–20 hr</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**

- **Contraindicated in:** Hypersensitivity; Hypersensitivity to sulfonamides (cross-sensitivity may occur); Type 1 diabetes (as monotherapy); Diabetic coma or ketoacidosis; Severe renal, hepatic, thyroid, or other endocrine disease; Uncontrolled infection, serious burns, or trauma.
- **Use Cautiously in:** Severe cardiovascular disease; Heart failure; Renal impairment (1% of hypoglycemic effects).

**Adverse Reactions/Side Effects**

- **CNS:** Dizziness, drowsiness, headache, weakness.
- **GI:** Constipation, cramps, diarrhea, drug-induced hepatitis, dyspepsia, anorexia, vomiting.
- **Derm:** Photosensitivity, rashes.
- **Endo:** Hypoglycemia.
- **F and E:** Hyponatremia.
- **Hemat:** Aplastic anemia, agranulocytosis, leukopenia, pancytopenia, thrombocytopenia.

**Interactions**

- **Drug Drug:** Ingestion of alcohol may result in disulfiram-like reaction. Effectiveness may be impaired by concurrent use of diuretics, corticosteroids, phenothiazines, hormonal contraceptives, estrogen, oral contraceptives, tetracycline, nicotine, salicylates, sulfonamides, and warfarin. May increase the risk of hypoglycemia. Concurrent use with warfarin may alter the response to both agents (1% changes in dosage). Beta blockers may mask the signs and symptoms of hypoglycemia.
- **Drug-Natural Products:** Glucosamine may worsen blood glucose control. Fenugreek, chromium, and coenzyme Q-10 may produce additive hypoglycemic effects.

**Route/Dosage**

- **PO (Adults):** 100–250 mg/day (range 100–1000 mg/day; doses >500 mg/day should be given as divided doses).

**Nursing Implications**

**Assessment**
- Monitor for signs and symptoms of hypoglycemia.

**High Alert**

- **Special Populations:** Pregnancy Category C, breast-feeding, children.
Assess patient for allergy to sulfonamides.

Monitor intake and output ratios and daily weight. Notify health care professional promptly if peripheral edema, rales/crackles, or a significant discrepancy in totals develops.

Lab Test Considerations: Monitor serum glucose and glycosylated hemoglobin periodically throughout therapy to evaluate effectiveness.

Mild hypoglycemia may be treated with administration of oral glucose. Severe hypoglycemia should be treated with IV D50W followed by continuous IV infusion of 5% dextrose at a rate sufficient to keep serum glucose at approximately 100 mg/dL.

Lab Test Considerations:
- Monitor serum glucose and glycosylated hemoglobin periodically during therapy to evaluate effectiveness.
- Monitor CBC periodically throughout therapy. Notify health care professional promptly if infection occurs.

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 tolazamide with tolbutamide.
- 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 or insulin dosage of 20 units/day, change can be made without gradual dose adjustment. Patients taking 20–40 units/day should convert gradually by receiving oral hypoglycemic agent and a 25–50% reduction in insulin dosage the 1st day, with gradual insulin dose reduction as tolerated. Patients taking 10 units/day should use a 20–50% reduction in insulin dosage the 1st day, with gradual insulin dose adjustment as tolerated. Monitor serum glucose and urine 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 minimize gastric irritation. Do not administer after last meal of the day.

Tablets may be crushed and taken with fluids if patient has difficulty swallowing.

Patient/Family Teaching
- Instruct patient to take medication at same time each day. If a dose is missed, take 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 long-term.
- Review signs of hypoglycemia and hyperglycemia with patient. If hypoglycemia occurs, advise patient to drink a glass of orange juice or ingest 2–5 tsp of sugar, honey, or corn syrup dissolved in water or an appropriate number of glucose tablets and notify health care professional.

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 tolazamide with tolbutamide.
- 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 or insulin dosage of 20 units/day, change can be made without gradual dose adjustment. Patients taking 20–40 units/day should convert gradually by receiving oral hypoglycemic agent and a 25–50% reduction in insulin dosage the 1st day, with gradual insulin dose reduction as tolerated. Patients taking 10 units/day should use a 20–50% reduction in insulin dosage the 1st day, with gradual insulin dose adjustment as tolerated. Monitor serum glucose and urine 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 minimize gastric irritation. Do not administer after last meal of the day.

Tablets may be crushed and taken with fluids if patient has difficulty swallowing.

Patient/Family Teaching
- Instruct patient to take medication at same time each day. If a dose is missed, take 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 long-term.
- Review signs of hypoglycemia and hyperglycemia with patient. If hypoglycemia occurs, advise patient to drink a glass of orange juice or ingest 2–5 tsp of sugar, honey, or corn syrup dissolved in water or an appropriate number of glucose tablets and notify health care professional.

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 tolazamide with tolbutamide.
- 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 or insulin dosage of 20 units/day, change can be made without gradual dose adjustment. Patients taking 20–40 units/day should convert gradually by receiving oral hypoglycemic agent and a 25–50% reduction in insulin dosage the 1st day, with gradual insulin dose reduction as tolerated. Patients taking 10 units/day should use a 20–50% reduction in insulin dosage the 1st day, with gradual insulin dose adjustment as tolerated. Monitor serum glucose and urine 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 minimize gastric irritation. Do not administer after last meal of the day.

Tablets may be crushed and taken with fluids if patient has difficulty swallowing.

Patient/Family Teaching
- Instruct patient to take medication at same time each day. If a dose is missed, take 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 long-term.
- Review signs of hypoglycemia and hyperglycemia with patient. If hypoglycemia occurs, advise patient to drink a glass of orange juice or ingest 2–5 tsp of sugar, honey, or corn syrup dissolved in water or an appropriate number of glucose tablets and notify health care professional.

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 tolazamide with tolbutamide.
- 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 or insulin dosage of 20 units/day, change can be made without gradual dose adjustment. Patients taking 20–40 units/day should convert gradually by receiving oral hypoglycemic agent and a 25–50% reduction in insulin dosage the 1st day, with gradual insulin dose reduction as tolerated. Patients taking 10 units/day should use a 20–50% reduction in insulin dosage the 1st day, with gradual insulin dose adjustment as tolerated. Monitor serum glucose and urine 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 minimize gastric irritation. Do not administer after last meal of the day.

Tablets may be crushed and taken with fluids if patient has difficulty swallowing.

Patient/Family Teaching
- Instruct patient to take medication at same time each day. If a dose is missed, take 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 long-term.
- Review signs of hypoglycemia and hyperglycemia with patient. If hypoglycemia occurs, advise patient to drink a glass of orange juice or ingest 2–5 tsp of sugar, honey, or corn syrup dissolved in water or an appropriate number of glucose tablets and notify health care professional.
CONTINUED

TOLAZamide

- Advise patient to notify health care professional promptly if unusual weight gain, swelling of ankles, dizziness, shortness of breath, muscle cramps, weakness, sore throat, rash, or unusual bleeding or bruising occurs.
- Emphasize the importance of routine follow-up exams.

Evaluation/Desired Outcomes

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

Why was this drug prescribed for your patient?