chlorproPAMIDE (klor-proe-pa-mide)

Classifications

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. Unlabeled Use: Management of neurogenic diabetes insipidus.

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 after oral administration.

Distribution: 0.13–0.23 L/kg; enters breast milk.

Metabolism and Excretion: Mostly metabolized by the liver; 10–30% excreted in urine as unchanged drug.

Protein Binding: 60–90%.

Half-life: 36 hr.

TIME/ACTION PROFILE (hypoglycemic activity)

<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>3–6 hr</td>
<td>24 hr</td>
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Contraindications/Precautions

Contraindicated in: Hypersensitivity. Cross-sensitivity with sulfonylureas (including glimepiride) may occur. Type 1 diabetes, Diabetic coma or ketoacidosis, Severe renal or hepatic disease, Uncontrolled infection, Serious burns, or trauma.

Use Cautiously in:

- Severe cardiovascular disease
- Glucose 6-phosphate dehydrogenase deficiency
- Type 1 diabetes mellitus
- Diabetic coma or ketoacidosis
- Severe renal or hepatic disease
- Uncontrolled infection, serious burns, or trauma
- OB: Safety not established during pregnancy; insulin recommended during pregnancy
- Geri: Prolonged half-life may cause hypoglycemia; dose may be required

Adverse Reactions/Side Effects

CNS: Anorexia, Dizziness, Headache.

GI: Constipation, Diarrhea.

Derm: Photosensitivity, Rash, Pruritis, Urticaria.

Endo: Hypoglycemia, Syndrome of Inappropriate Antidiuretic Hormone (SIADH) secretion.

F and E: Hyponatremia.

Hemat: Aplastic anemia, Agranulocytosis, Eosinophilia, Hemolytic anemia, Leukopenia, Pancytopenia, Thrombocytopenia.

Miscellaneous: Disulfiram-like reaction.

Interactions

Drug-Drug: Ingestion of alcohol may result in disulfiram-like reaction. Effectiveness may be decreased by concurrent use of diuretics, calcium channel blockers, corticosteroids, phenothiazines, hormonal contraceptives, estrogens, Propecia, phenytoin, nicotinic acid, adrenergic agents, and warfarin. Alcohol, anabolic steroids (testosterone), chloramphenicol, fluoroquinolones, 50 mg inhibitors (inhibitors of platelet aggregation), phenytoin, antipsychotic agents, and thyroid agents may increase the risk of hypoglycemia. Concurrent use with warfarin may alter the response to both agents (may affect the anticoagulant effect of either; close monitoring recommended during any changes in dose). Beta blockers may alter the response to oral hypoglycemic agents (may alter requirements, nonselective agents may cause prolonged hypoglycemia).

Drug-Natural Products: Glucosamine may worsen hypoglycemia. Fenugeek, chromium, and coenzyme Q-10 may produce additive hypoglycemic effects.

Route/Dosage

PO (Adults): 250 mg once daily, initially; may be increased by 50–125 mg/day at 3–5 day intervals. Maximum daily dose is 750 mg.

PO (Pediatric): 100–250 mg/day.
Hepatic Impairment  
PO (Adults): Initiate therapy with 100–125 mg/day.

Renal Impairment  
PO (Adults CCr ≥ 50 mL/min): Initiate therapy with 100–125 mg once daily.

NURSING IMPLICATIONS

Assessment

- Observe patient for signs and symptoms of hypoglycemic reactions (sweating, hunger, weakness, dizziness, tremor, tachycardia, anxiety). Long half-life of chlorpropamide increases the risk of recurrent hypoglycemia. Monitor patients who experience a hypoglycemic episode closely for 3–5 days.

- Assess patient for allergy to sulfonamides.

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

- Monitor CBC periodically during therapy. Notify health care professional promptly if p in blood counts occurs.

- IL  and AST may cause an increase in AST and LDH.

- Monitor urine periodically for glucose, ketones, and protein.

- Monitor serum sodium levels and plasma osmolarity periodically during therapy in patients.

- 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 a rate sufficient to keep serum glucose at approximately 100 mg/dL.

Potential Nursing Diagnoses

- Imbalanced nutrition: more than body requirements (Indications)

- Deficient knowledge, related to medication regimen (Patient/Family Teaching)

- 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 is diabetic.

- High alert: Do not confuse Diabinese with Diamox.

- Patients stabilized on a diabetic regimen who are exposed to stress, fever, trauma, or surgery may require administration of insulin.

- Patients previously maintained on an insulin dose of less than 40 units/day may be started on chlorpropamide. Insulin should be immediately discontinued. Patients taking greater than 40 units/day of insulin should have their insulin doses reduced by 50% for the first few days, then gradually reduced further, as necessary. 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 (especially if patient experiences GI distress). 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

- Urge 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 long-term.

- Monitor signs of hypoglycemia and hypothyroidism with patient. If hypoglycemia occurs, advise patient to take a glass of orange juice or 2–5 tsp of sugar, honey, or corn syrup dissolved in water and to notify health care professional.

- Encourage patient to follow prescribed diet, medication, and

- Concurrent use of alcohol may cause a disulfiram-like reaction (abdominal cramps, nausea, flushing, headache, and hypoglycemia).

- May occasionally cause dizziness. 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.

- Insulin is the preferred method of controlling blood sugar during pregnancy. Counsel female patients to use a form of contraception other than oral contraceptive.
Continued

Chlorpropamide

Treat and to notify health care professional promptly if pregnancy is planned or suspected.

- Caution patient to use sunscreen and protective clothing to prevent photosensitivity reactions.
- Advise patient to inform health care professional of medication regimen before treatment or surgery.
- Advise patient to carry a form of sugar (sugar packets, candy) and identification describing disease process and medication regimen at all times.
- Advise patient to notify health care professional promptly if unusual weight gain, weakness, sore throat, rash, or unusual bleeding or bruising occurs.
- Emphasize the importance of routine follow-up examinations.

Evaluation/Desired Outcomes

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

Why was this drug prescribed for your patient?