Diazoxide (dye-az-ox-ide)

Hyperstat, Proglycem

**Classification**
Therapeutic: antihypertensives, hyperglycemic
Pharmacologic: vasodilators

**Pregnancy Category C**

**Indications**
IV: Treatment of hypertensive emergencies. PO: Treatment of hyperglycemia associated with hyperinsulinemia due to islet cell carcinoma or other causes.

**Action**
Directly relaxes vascular smooth muscle in peripheral arterioles. Produces a fall in BP, reflex tachycardia and increased cardiac output. Inhibits insulin release from the pancreas and decreases peripheral utilization of glucose.

**Therapeutic Effects:**
Lowering of BP. Increased blood glucose.

**Pharmacokinetics**

**Absorption:** Well absorbed following oral administration.

**Distribution:** Crosses the blood-brain barrier and placenta.

**Protein Binding:** 90%.

**Metabolism and Excretion:** 50% metabolized by the liver; 50% excreted unchanged by the kidneys.

**Half-life:** 20–36 hr (prolonged in renal impairment).

**TIME/ACTION PROFILE**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO†</td>
<td>1 hr</td>
<td>8–12 hr</td>
<td>8 hr</td>
</tr>
<tr>
<td>IV‡</td>
<td>immediate</td>
<td>5 min</td>
<td>3–12 hr</td>
</tr>
</tbody>
</table>

†Blood sugar
‡BP

**Contraindications/Precautions**

**Contraindicated in:** Hypersensitivity to sulfonamide drugs.

**Use Cautiously in:**

- Diabetics (hyperglycemia accompanies use); Cardiovascular disease, Renal or hepatic impairment; OB, Lactation: Pregnancy and lactation (safety not established; may inhibit labor).

**Adverse Reactions/Side Effects**

**CNS:** dizziness, headache.

**CV:** hypotension, tachycardia, angina, edema, flushing.

**Derm:** hirsutism.

**Endo:** hyperglycemia, hyperuricemia.

**F and E:** sodium and water retention.

**GI:** nausea, vomiting, constipation.

**Local:** phlebitis at IV site.

**MS:** weakness.

**Drug Interactions**

**Drug-Drug:** Concurrent diuretic therapy may potentiate hyperglycemic, hyperuricemic, and hypotensive effects. May inhibit metabolism and effectiveness of phenytoin. Corticosteroids may increase hyperglycemia. May increase effects of warfarin. May alter the effects of insulin or oral hypoglycemic agents.

**Drug-Natural Products:** Glucosamine may worsen hyperglycemia. Fennel, chromium, and coenzyme Q-10 may produce additive hypoglycemic effects.

**Route/Dosage**

**Hypertension**

IV (Adults and Children): 1–3 mg/kg (not to exceed 150 mg/dose); may repeat dose in 5–15 min until BP is lowered to desired level, repeat administration every 2–4 hr to maintain BP until oral antihypertensives are started.

**Hyperinsulinemic Hypoglycemia**

PO (Adults and Children): 1 mg/kg q 8 hr initially, further adjustments made on the basis of response. Usual maintenance dose is 3–8 mg/kg/day given in divided doses every 8–12 hr.

PO (Infants and Newborns): 2.7 mg/kg q 8 hr initially, further adjustments made on the basis of response. Usual maintenance dose is 6–15 mg/kg/day in divided doses every 8–12 hr.

**NURSING IMPLICATIONS**

**Assessment**

- Assess for allergy to sulfonamide drugs.
- Assess patient routinely for signs and symptoms of HF (peripheral edema, dyspnea, rales/crackles, fatigue, weight gain, jugular venous distention). Notify health care professional if these occur.
**Hypertension:** Monitor BP and pulse every 5 min until stable and then hourly. Report significant changes immediately.

**Hypoglycemia:** Focus patient on signs of hypoglycemia (dizziness, fruity breath, increased urination, unusual thirst). Monitor blood glucose on diabetic patients requiring frequent parental doses.

**Lab Test Considerations:** May cause increased serum glucose, BUN, alkaline phosphatase, AST, sodium, and uric acid levels.

**Dextrose, dextran, dopamine, dobutamine, doxycycline, endotoxin, epinephrine, furosemide, heparin, hydrocortisone, isoproterenol, lidocaine, magnesium sulfate, mannitol, methyldopa, methylphenidate, metoclopramide, midazolam, morphine, nalbuphine, nitroglycerin, nitroprusside, norepinephrine, palonosetron, pentazocine, phenobarbital, phenylephrine, phenytoin, phytonadione, potassium chloride, promethazine, procainamide, probenecid, pyridoxine, ranitidine, sodium bicarbonate, succinylcholine, theophylline, trofamin, vancomycin, vasopressin.

**Patient/Family Teaching**

**Hypoglycemia:** Instruct patient to take medication as directed, at the same time each day.

**Encourage patient to follow prescribed diet, medication, and exercise regimen to prevent hypoglycemic or hyperglycemic episodes.**

**Review signs of hypoglycemia and hyperglycemia with patient.**

**Advise patient not to switch from capsule to oral suspension form without consulting health care professional, because oral suspension produces higher blood concentrations.**

**Advise patient to inform health care professional of medication regimen prior to treatment or surgery.**

**Hypertension:** Instruct patient to change positions slowly to minimize orthostatic hypotension.

**Caution patient to avoid taking other Rx, OTC, or herbal products, especially cold products and NSAIDs, without consulting health care professional.**

**Emphasize the importance of routine follow-up exams, especially during the first few weeks of therapy.**

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diazoxide

Evaluation/Desired Outcomes

● Decrease in BP without the appearance of side effects. This drug is utilized in short-term treatment of hypertension. Oral antihypertensives should be introduced as soon as the hypertensive crisis is controlled.

● Management of hyperglycemia and return to normal serum glucose concentrations. If diazoxide is not effective within 2–3 wk, therapy should be re-evaluated.

Why was this drug prescribed for your patient?