dimercaprol (dim-er-cap-role)

Classifications:
- Therapeutic: antidotes
- Pharmacologic: chelating agents

Pregnancy Category: C

Indications:
The treatment of acute poisoning with Mercury, Gold, Arsenic. Adjunct (with edetate calcium disodium) in the treatment of severe lead poisoning accompanied by encephalopathy or blood lead level > 100 mcg/dL.

Action:
Form a stable binary complex with heavy metals in a reversible complex so that they cannot bind to tissues and cause organ damage. Therapeutic Effects: Prevention of organ damage from mercury, gold, arsenic, or lead poisoning.

Pharmacokinetics:
- Absorption: Well absorbed following IM administration.
- Distribution: Widely distributed with high concentrations in liver and kidneys. Also penetrates brain.
- Metabolism and Excretion: 50% excreted as a complex with heavy metal by kidneys and in bile; 50% rapidly metabolized by the liver to inactive metabolites.
- Half-life: Unknown (metabolism and excretion are complete within 6–24 hr).

TIME/ACTION PROFILE (effect on blood levels of heavy metals)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM</td>
<td>30 min</td>
<td>0.5–1 hr</td>
<td>4 hr</td>
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</tbody>
</table>

Contraindications/Precautions:
- Contraindicated in: Hypersensitivity to peanut products (vehicle is peanut oil); Impaired liver function (unless due to arsenic poisoning).
- Use Cautiously in: Renal impairment (dosage reduction required); G6PD deficiency (use only in life-threatening situations); Pregnancy or lactation (safety not established).
-副作用

CNS:
- SEIZURES, headache, nervousness.
- EENT:
- blepharospasm.
- Resp:
- unpleasant breath odor.
- CV:
- increased BP, tachycardia.
- GI:
- abdominal pain, nausea, salivation, vomiting.
- GU:
- allergy,uria.

Hemat:
- hemolytic anemia.
- Local:
- pain at IM site, sterile abscesses at IM site.

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Misc:
- burning sensation in lips, mouth, throat, eyes, or penis, feeling of constrictions in throat, chest, or hands, fever (in children).

Interactions:

Drug-Drug:
- Forms a toxic complex with iron, cadmium, selenium, or uranium. Nephrotoxicity decreased by agents that alkalinize the urine.

Drug-Food:
- Nephrotoxicity decreased by foods that alkalinize the urine.

Route/Dosage:

**Lead Poisoning (with Edetate Ca Disodium)**

| IM (Adults and Children): | 4–5 mg/kg every 4 hr for 3–5 days. |

**Arsenic, Mercury, and Gold Poisoning**

| IM (Adults and Children): | 3 mg/kg every 4–6 hr for 2 days, then every 6–8 hr for 7–10 days. |

Nursing Implications:

- Determine time and amount of ingestion of heavy metal (arsenic, lead) or time and amount of ingestion of gold.
- Assess patient for symptoms of toxicity from ingested substance.
- Monitor BP and pulse throughout therapy. Systolic BP may rise, and tachycardia may occur 15–30 min after administration. BP usually returns to normal within 2 hr.
- Monitor intake and output and notify physician if significant discrepancies occur or if urine output decreases. Alkalinization of urine may be used to prevent nephrotoxicity.
- Monitor temperature throughout therapy. May cause fever in children after 2nd or 3rd dose, which persists until discontinuation of therapy.
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- Lab Test Considerations:
- May cause decreased values of 131I thyroid uptake if test is performed during or immediately following dimercaprol therapy.

Adverse Reactions/Side Effects:

CNS:
- headache, nervousness, EENT:
- blepharospasm, Resp:
- unpleasant breath odor, CV:
- allergy,uria.

Hemat:
- hemolytic anemia.

Local:
- pain at IM site, sterile abscesses at IM site.

Misc:
- burning sensation in lips, mouth, throat, eyes, or penis, feeling of constrictions in throat, chest, or hands, fever (in children).
Potential Nursing Diagnoses

Risk for poisoning (Indications)

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

Implementation

- Demonstrated to most effective when administered within 1–2 hr after ingestion.
- Administration of antihistamine may prevent or treat histamine-like side effects.
- Commonly used concurrently with edetate calcium disodium when used to treat lead poisoning.
- Contact of the solution with the skin may cause dermatitis. Wash hands immediately.
- IM: Administration only deep IM. Injection is painful and may cause sterile abscess.
- Solution is yellow and viscous with a pungent odor. May be turbid and contain sediment. This does not indicate deterioration of solution.
- If administered concurrently with edetate calcium disodium, use different sites for injections.

Patient/Family Teaching

- Explain purpose of therapy to patient or parents.
- Instruct patient that injection is painful and may cause an unpleasant garlic-like breath odor.
- Instruct patient to notify health care professional if headache, burning of lips, sweating, or tearing occurs.

Evaluation/Desired Outcomes

- Resolution of the symptoms of lead, arsenic, mercury, or gold toxicity.

Why was this drug prescribed for your patient?