Rasburicase (ras-byoor-i-case)

**Drug Class:** Antigout agents, antihyperuricemics

**Pharmacologic Class:** Enzymes

**Pregnancy Category:** C

**Indications**
Initial management of increased uric acid levels in patients with leukemia, lymphoma, or other malignancies who are being treated with antineoplastics which are expected to produce hyperuricemia.

**Action**
An enzyme which promotes the conversion of uric acid to allantoin, an inactive, water-soluble compound. Produced by recombinant DNA technology. Therapeutic Effects: Decreased sequelae of hyperuricemia (nephropathy, arthropathy).

**Pharmacokinetics**
- **Absorption:** IV administration results in complete bioavailability.
- **Distribution:** Unknown.
- **Metabolism and Excretion:** Unknown.
- **Half-life:** 18 hr.

**TIME/ACTION PROFILE (in uric acid)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>rapid</td>
<td>unknown</td>
<td>4–24 hr</td>
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</table>

**Contraindications/Precautions**
- Contraindicated in: G6PD deficiency (risk of severe hemolysis); Previous allergic reaction, hemolysis or methemoglobinemia from rasburicase; Lactation.
- Use Cautiously in: OB: Pregnancy (use only if clearly needed).

**Adverse Reactions/Side Effects**
- **CNS:** Headache.
- **Resp:** Respiratory distress.
- **GI:** Abdominal pain, constipation, diarrhea, nausea, vomiting, mucositis.
- **Derm:** Rash.
- **Hemat:** Hemolysis, methemoglobinemia, neutropenia.
- **Misc:** Hypersensitivity reactions including anaphylaxis, fever, sepsis.

**Interactions**

**Drug-Drug:** None known.

**Route/Dosage**

**IV (Adults and Children):** 0.2 mg/kg daily as a single dose for 5 days.

**NURSING IMPLICATIONS**

**Assessment**
- Monitor patients for signs of allergic reactions and anaphylaxis (chest pain, dyspnea, hypotension, urticaria). If these signs occur, rasburicase should be immediately and permanently discontinued.
- **Lab Test Considerations:** Monitor patients for hemolysis. Screen patients at higher risk for G6PD deficiency (patients of African American or Mediterranean ancestry) prior to therapy. If hemolysis occurs, discontinue and do not restart rasburicase.
- Monitor patients for methemoglobinemia. Discontinue rasburicase and do not restart in patients who develop methemoglobinemia.
- May cause spuriously low uric acid levels in blood samples left at room temperature. Collect blood in sterile acidified tubes containing heparin and immediately remove and maintain in an ice-water bath. Uric acid must be analyzed promptly. Plasma samples must be assayed within 1 hr of collection.

**Potential Nursing Diagnoses**
Deficient knowledge, related to medication regimen (Patient/Family Teaching)

**Implementation**

**Chemotherapy:** Initiated 4–24 hr after first dose of rasburicase.

**IV Administration**

**pH:** No Data.

**Intermittent Infusion:** Determine number of vials of rasburicase needed based on patient’s weight and dose/kg. Reconstitute in diluent provided. Add 1 mL of diluent provided to each vial and mix by swirling very gently. Do not shake or vortex. Solution should be clear and colorless. Do not use solutions that are discolored or contain particulate matter. **Diluent:** Remove dose from reconstituted
Vials and inject into infusion bag of 0.9% NaCl for a final total volume of 50 mL. Administer within 24 hr of reconstitution. Store reconstituted or diluted solution in refrigerator for up to 24 hr. Do not administer as a bolus.

● Y-Site Incompatibility: Infuse through a separate line. Do not use a filter with infusion. If separate line is not possible, flush line with at least 15 mL of 0.9% NaCl prior to rasburicase infusion.

Patient/Family Teaching
- Inform patient and family of purpose of rasburicase infusion.

Evaluation/Desired Outcomes
- Decrease in plasma uric acid levels in pediatric patients receiving antineoplastics expected to result in tumor lysis and subsequent elevation of plasma uric acid levels. More than one course of therapy or administration beyond 5 days is not recommended.

Why was this drug prescribed for your patient?