Pyrazinamide (py-raz-in-a-mide)

**Trade Name**: PMS Pyrazinamide, Tebrazid

**Classification**: Antitubercular

**Pregnancy Category**: C

**Indications**
Usual in combination with other agents in the treatment of active tuberculosis.

**Action**
Converted to pyrazinoic acid in susceptible strains of *Mycobacterium* which lowers the pH of the environment. *Therapeutic Effects*: Bacteriostatic action against susceptible mycobacteria.

**Spectrum**: Active against mycobacteria only.

**Pharmacokinetics**

**TIME/ACTION PROFILE**

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<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tbody>
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<td>PO</td>
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†For pyrazinoic acid

**Contraindications/Precautions**

- **Contraindicated in**: Hypersensitivity; Cross-sensitivity with ethionamide, isoniazid, niacin, or nicotinic acid may exist; Severe liver impairment.
- **Use Cautiously in**: Gout; Renal failure; Diabetes mellitus; Acute intermittent porphyria; OB: Safety not established.

**Adverse Reactions/Side Effects**

- **GI**: Hepatotoxicity, anorexia, diarrhea, nausea, vomiting.
- **GU**: Dysuria.
- **Derm**: Acne, itching, phototoxicity, skin rash.
- **Hemat**: Anemia, thrombocytopenia.
- **Met**: Hyperuricemia.
- **MS**: Arthralgia, gouty arthritis.

**Interactions**

- **Drug-Drug**: Concurrent use with rifampin may result in life-threatening hepatotoxicity and should be avoided. May ↑ blood levels and effectiveness of cyclosporine.
- **Route/Dosage**
  - **PO (Adults and Children)**: 15–30 mg/kg/day as a single dose. Up to 60 mg/kg/day has been used in isoniazid-resistant tuberculosis; not to exceed 2 g/day as a single dose or 3 g/day in divided doses. May also be given as 45–70 mg/kg 2–3 times weekly (not to exceed 2 g if given on a 2-times-weekly regimen, 3 g if given for 3-times-weekly regimen, or 4 g/kg for once-weekly regimen). *Patients with AIDS*: 20–40 mg/kg/day for first 2 mo of therapy (maximum: 1 g/day). Further dosing depends on regimen employed.

**NURSING IMPLICATIONS**

- **Assessment**: Perform mycobacterial studies and susceptibility tests before and periodically during therapy to detect possible resistance. *Lab Test Considerations*: Evaluate hepatic function before and every 2–4 wk during therapy. Increased AST and ALT may not be predictive of clinical hepatitis and may return to normal levels during treatment. Patients with impaired liver function should receive pyrazinamide therapy only if crucial to treatment. Monitor serum uric acid concentrations during therapy. May cause ↑ urate, resulting in precipitation of acute gout. May interfere with urine ketone determinations.

**Potential Nursing Diagnoses**

- **Risk for infection (Indications)**
- **Noncompliance (Patient/Family Teaching)**

**Implementation**

- **PO**: May be given concurrently with isoniazid.
Patient/Family Teaching

- Advise patient to take medication as directed and not to skip doses or double up on missed doses. Take missed doses as soon as remembered unless almost time for next dose. Emphasize the importance of continuing therapy even after symptoms have subsided. Length of therapy depends on regimen being used and underlying disease states.
- Inform diabetic patients that pyrazinamide may interfere with urine ketone measurements.
- Advise patients to consult health care professional if no improvement is noticed after 2–3 wk of therapy or if fever, anorexia, malaise, nausea, vomiting, darkened urine, yellowish discoloration of the skin and eyes, pain, or swelling of the joints occurs.
- Advise patients to use sunscreen and protective clothing to prevent photosensitivity reactions.
- Emphasize the importance of regular follow-up exams to monitor progress and check for side effects.

Evaluation/Desired Outcomes

- Resolution of signs and symptoms of tuberculosis.
- Negative sputum cultures.

Why was this drug prescribed for your patient?