dornase alfa  (dor-nay-laf-a)   
Pulmozyme

**Classification**  
Therapeutic: cystic fibrosis therapy adjuncts  
Pharmacologic: pulmonary enzymes

**Pregnancy Category** B

**Indications**  
Adjunct management (with standard therapy) of cystic fibrosis.

**Action**  
Breaks down excessive amounts of DNA found in the respiratory tract of patients with cystic fibrosis. Excessive DNA contributes to increased sputum viscosity and risk of infection. **Therapeutic Effects:** Decreased infection rates and requirement for parenteral anti-infectives. Improved pulmonary function.

**Pharmacokinetics**  
Absorption: Negligible absorption following inhalation.  
Distribution: Action is primarily local.  
Metabolism and Excretion: Unknown.  
Half-life: Unknown.

**TIME/ACTION PROFILE (effect on noted parameters)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>within 15 min†</td>
<td>48 hr</td>
<td>weeks–months§</td>
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</table>

†Significant concentrations in sputum  
‡Improvement in respiratory function  
§Decreased incidence of respiratory tract infections

**Contraindications/Precautions**  
Contraindicated in:  
- Hypersensitivity to dornase alfa or Chinese Hamster Ovary cell products.  
- Use cautiously in:  
  - Children (incidence of cough, rhinitis, and rash is increased);  
  - Pregnancy or lactation (safety not established).

**Adverse Reactions/Side Effects**

- **EENT:** sore throat, redness, voice alteration, conjunctivitis, hoarseness, rhinitis.
- **Resp:** cough, dyspnea.
- **CV:** chest pain.
- **Derm:** rash.
- **Misc:** fever.

**Interactions**

- **Drug-Drug:** None significant.

**Route/Dosage**

**Inhaln (Adults and Children):**  
2.5 mg 1–2 times daily.

**NURSING IMPLICATIONS**

**Assessment**

- Assess vital signs and respiratory status (lung sounds, respiratory rate, amount and color of sputum, dyspnea) periodically throughout therapy. Incidence of cough, rash, and rhinitis is increased in children under 5 yr.

**Potential Nursing Diagnoses**

- Ineffective airway clearance (Indications)  
- Risk for infection (Indications)  
- Deficient knowledge, related to medication regimen (Patient/Family Teaching)

**Implementation**

- **Dornase alfa must be administered every day to maintain therapeutic effect. Pulmonary function decreases within 48 hr of discontinuation.**

- Inhaln: Dornase alfa inhalation solution is administered via nebulization through the Hudson T Up-draft II disposable jet nebulizer or the Marquest Acorn II disposable jet nebulizer or the Pari BABY nebulizer with the PARI PRONEB compressor, or the Durable Sidestream nebulizer with either the MOBILAIRE or Porta-Neb compressor. Other battery-powered systems and ultrasonic nebulizers are not recommended.

- Use the mouthpiece provided with each nebulizer for administration; a face mask may reduce delivery of medication to the lungs.

- Do not mix or dilute dornase alfa with other medications in nebulizer cup because of possible incompatibilities. Other concurrently used medications may be administered before or after dornase alfa.

- Do not administer solution that is cloudy or discolored or from ampules that have been opened previously or are outdated.

**Nursing Considerations**

- **Cautions:** Monitor for improvement in pulmonary function.

- **Patient/Family Teaching**

  - Instruct patient to take drug at the same time each day as determined by healthcare provider.

  - Instruct patient to perform chest therapy immediately after instillation.

  - Advise patient to rinse mouth with water or gargle after each dose.

  - Advise patient to report chest pain, rash, or signs of infection promptly.

  - Inform patient that drug is given for long-term therapy and compliance is essential to achieve recommended benefit.

  - Instruct patient to contact healthcare provider if pregnancy is planned or suspected or if breastfeeding.

**Pharmacologic Class** Pulmonary enzymes
Store ampules in refrigerator in foil pouches; do not freeze. Do not leave at room temperature for more than 2 hr. Protect ampules from light.

Patient/Family Teaching

- Instruct patient to take dornase alfa exactly as directed, at the same time each day. If a dose is missed, take as soon as possible; if almost time for next dose, skip missed dose and return to regular dosing schedule.
- Emphasize the importance of continuing other medications for cystic fibrosis during dornase alfa therapy.
- Instruct patient in proper technique for dornase alfa administration. Wash hands before assembling nebulizer and adding medication. Use a clean surface to assemble nebulizer and keep nebulizer parts clean according to manufacturer’s directions. Open ampule and empty into nebulizer cup; use all of medication in ampule. Administer according to manufacturer’s directions. Clean nebulizer following use.

Evaluation/Desired Outcomes

- Improvement in pulmonary function (usually seen within 3 days to 2 wk) and reduction in frequency of infections requiring parenteral antibiotics (may require weeks to months of therapy) in patients with cystic fibrosis.

Why was this drug prescribed for your patient?