# Bleomycin
(Blenoxane®)

## DRUG MONOGRAPH

### DRUG INFORMATION

<table>
<thead>
<tr>
<th>Classification</th>
<th>Antitumor antibiotic: nonanthracycline</th>
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</thead>
<tbody>
<tr>
<td><strong>Mechanism of Action</strong></td>
<td>Exact mechanism unknown; thought to bind to DNA, breaking DNA strands and inhibiting DNA synthesis</td>
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<tr>
<td><strong>Indications</strong></td>
<td></td>
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</tbody>
</table>
| | - Intracavity/intrapleural instillation to manage malignant effusion  
| | - Lymphoma  
| | - Squamous cell cancer of the head, neck, uterine, cervix, or penis  
| | - Testicular cancer |

### ADMINISTRATION

| **Dosing** | 
| | • The drug is ordered in units.  
| | • Dose varies based on indication.  
| | • Maximum lifetime dose is 400 units, and no individual dose should exceed 30 units. |
| **Route** | 
| | • Intravenous (IV): irritant  
| | • Subcutaneous (SC)  
| | • Intramuscular (IM)  
| | • Intrapleural |
| **Safe Handling** | Bleomycin is identified as a hazardous drug. Follow safe handling precautions. |

### ADVERSE REACTIONS

- Pulmonary toxicity:
  - Pneumonitis
  - Pulmonary fibrosis
  - Dyspnea
  - Fine crackles
- Hypersensitivity:
  - Hypotension
  - Change in mental status
  - Fever
  - Chills
  - Wheezing
- Dermatologic:
  - Alopecia
  - Hyperpigmentation
  - Rash

### NURSING CONSIDERATIONS

| Pretreatment | Perform a baseline pulmonary function test and chest x-ray.  
| | Assess pulmonary status.  
| | Calculate doses to ensure they do not exceed the lifetime dose. |
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**Administration**
- IV push rate should not exceed 1 unit/min, IV infusions in 50–100 ml normal saline over 15 minutes or longer.
- Patients with lymphoma are at increased risk for hypersensitivity reactions. Administer ≤ 2 units for the first two doses. If no acute reactions occur, proceed with regular dosing.
- Acetaminophen may be used to prevent or treat bleomycin-induced fever.

**Post-Treatment**
- Monitor for signs of pulmonary toxicity.
- Monitor the administration site for signs of irritation.
- Monitor pulmonary function tests, and consider discontinuing therapy with a 30%–35% reduction in pulmonary function.

**PATIENT EDUCATION**
- It is important to know the signs and symptoms of pulmonary fibrosis, including shortness of breath.
- Knowledge of the lifetime cumulative dose is essential. For the rest of life, if having a procedure, alert anesthesiologists of previous use of bleomycin to prevent a fatal episode of pulmonary failure.
- Potential drug interactions can occur, including digoxin, filgrastim, and phenytoin.

**RESOURCES AND REFERENCES**

**Recommended Resources**
- ONS Podcast: Episode 159: Administer Bleomycin Chemotherapy With Confidence

**References**