**Interferon alpha-2b** (in-ter-feer-on alfa-two-b)

**Class:** A

**Therapeutic:** Immune-modifiers

**Pharmacologic:** Interferons

**Pregnancy Category:** C

### Indications

- Treatment of hairy cell leukemia, multiple myeloma, AIDS-related Kaposi's sarcoma, condylomatous anogenital (intralesional), chronic hepatitis B, and chronic hepatitis C (oral or subcutaneous) which has relapsed following previous treatment with interferons, folinic acid (5-ALA) plus interferon-alpha2b.

### Action

Interferons are proteins capable of modifying the immune response and have antiproliferative action against tumor cells. Interferons also have antiviral activity. Interferons are proteins capable of modifying the immune response and have antiproliferative action against tumor cells.

### Pharmacokinetics

#### Absorption

- Not absorbed orally. Well absorbed (60-80%) following IM and subcutaneous administration. Minimal systemic absorption following intralesional administration. Intralesional administration results in complete bioavailability.

#### Distribution

Unknown.

#### Metabolism and Excretion

- Filtered by the kidneys and subsequently degraded in the renal tubule.

#### Half-life

- 2-3 hrs

### TIME/ACTION PROFILE (clinical effects)

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM, SC</td>
<td>unknown</td>
<td>unknown</td>
<td>1-4 days</td>
</tr>
<tr>
<td>Intravenous</td>
<td>unknown</td>
<td>unknown</td>
<td>5-1 day</td>
</tr>
</tbody>
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### Contraindications/Precautions

**Contraindicated in:** Heart failure in patients with hepatitis, autoimmunity. Use only if potential maternal benefit outweighs the potential for fetal harm.

**Use Caution in:** Severe cardiovascular, pulmonary, renal, or hepatic disease; active infections; underlying CNS pathology or psychiatric history; bone marrow suppression; pregnancy, or breast-feeding.

### Adverse Reactions/Side Effects

#### Local:

- Injection site reactions

#### Hematologic:

- Anemia

#### Dermatologic:

- Flatulence

#### GI:

- Diarrhea

#### Nervous System:

- Dizziness

#### Other:

- Rash

### Interactions

#### Drug-Drug

- Additive myelosuppression with other antineoplastic agents or radiation therapy.

### Exercise Extreme Caution in:

- History of depression/attempt.

### Treatment of Overdose

Discontinued.
**Route/Dosage**

**IV (Adults):** Melanoma (administration) — 20 million units/m² for 5 days of each week for 4 weeks, followed by subcutaneous maintenance dosing.

**SN, Subcut (Adults):** Primary cell leukemia — 2 million units/m² subcut 3 times weekly for up to 24 wk.

**Melanoma (maintenance):** 10 million units/m² subcut 3 times weekly for up to 24 wk, following initial IV dosing. AIDS-related Kaposi’s sarcoma — 30 million units/m² 3 times weekly until disease progression or remission has been achieved after 9 wk. Chronic hepatitis C—5 million units/m² subcut 3 times weekly until AST does not occur after 16 wk of therapy, commence treatment for total of 18–24 wk. Anemia has occurred after 16 wk of therapy, continue treatment for total of 18–24 wk.

**Hairy cell leukemia—** 30 million units/m² or 30 million units IM or subcut 3 times weekly until disease progression or remission has been achieved after 16 wk. Chronic hepatitis C—3 million units IM or subcut 3 times weekly until AST does not occur after 16 wk or therapy, continue treatment for total of 18–24 wk. Anemia has occurred after 16 wk of therapy, continue treatment for total of 18–24 wk.

**Kaposi’s sarcoma—** 30 million units/m² IM or subcut 3 times weekly for 16 wk. Follicular non-Hodgkin’s lymphoma — 5 million units/m² subcut 3 times weekly for up to 18 mo (to be used following completion of anthracycline-containing chemotherapy).

**Subcut (Children > 3 yr):** Chronic hepatitis B — 3 million units/m² subcut 3 times weekly for the first 12 wk of therapy then increase to 6 million units/m² 3 times weekly (after 12–24 wk).

**Subcut (Adults):** Condylomata acuminata—1 million units/lesion 3 times weekly for 1 wk, treat only 5 lesions per course. An additional course of treatment may be initiated at 12–16 wk.

**Nursing Implications**

**Assessment**

- Assess for signs of neuroendocrine disorders (irritability, anxiety, depression, suicidal ideation, aggressive behavior). May require discontinuation of therapy.
- Monitor for signs of infection (fever, chills, myalgias, headache) during therapy. Discontinue drug therapy if patient develops new or worsening symptoms.
- Assess for cardiovascular disorders (pulmonary edema, chest pain). An ECG should be performed periodically during therapy in patients with pre-existing cardiovascular disease.
- Monitor for signs of colitis (abdominal pain, bloody diarrhea, fever) and pancreatitis (nausea, vomiting, abdominal pain) during therapy. Discontinue therapy if these occur; may be fatal. Colonoscopy usually resolves within 1–3 wk of discontinuation.
- Monitor for development of skin-like rashes (fever, chills, macula, headache). Symptoms often appear suddenly 5–7 days after therapy. Therapy should be continued, even with continued therapy. Antihistamines may be used for control of these rashes.

**Monitor for bone marrow depression.** Assess for bleeding (baker's cysts, bruising, petechiae; gray stools; melaena; and vomiting) and monitor hematologic and hepatic values.

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**Monitor for signs of neuropsychiatric disorders (irritability, anxiety, depression, suicidal ideation, aggressive behavior). May require discontinuation of therapy.**

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interferon alpha-2b

Hairy Cell Leukemia: Monitor number of peripheral blood hairy cells and bone marrow hairy cells prior to and during therapy.

Genetic Implication. CAPI TALS indicate life-threatening, underline indicate most frequent. Strikethrough Discontinued.

Potential Nursing Diagnoses
Risk for injury (Side Effects)
Risk for infection (Side Effects)

Implementation
- Solution should be prepared in a biologic cabinet. Wear gloves, gown, and mask while handling medication. Discard equipment in specially designated containers.
- IM, Subcut: Subcut route is preferred for patients with a platelet count <50,000/mm³.
- Reconstitute 10-, 18-, and 50-million-unit vials with 1 mL of diluent provided by manufacturer (sterile water for injection). Agitate gently. Solution may be colorless to light yellow. Solution should be used immediately, stable for up to 24 hr if refrigerated.
- The solution for injection vials do not require reconstitution prior to use and may be used for IM, subcut, or intratumoral administration.
- The solution for multidose pens are for subcutaneous use only. Only the needles provided in the package should be used with the pen. A new needle should be used with each dose. Follow instructions in Medication Guide for use of multidose pens.
- IL: Reconstitute 10-million-unit vial with 1 mL of diluent provided by manufacturer (sterile water for injection). Use a TB syringe with 25–30-gauge needle to administer. Each 0.1-mL dose is injected into the center of the base of the wart using the intradermal injection approach. As many as 5 lesions can be treated at one time.

IV Administration
- Interim infusion: (For Malignant Melanoma). Diluent: Add 1 mL of diluent provided by manufacturer (sterile water for injection) to vial. Further dilute appropriate dose in 100 mL of 0.9% NaCl. Solution should be used immediately, stable for 24 hr if refrigerated. The solution for injection vials are not recommended for IV administration. Concentration: Not less than 10 million units/100 mL. Rate: Infuse over 20 min.

Patient/Family Teaching
- Advise patient to take medication as directed. If a dose is missed, omit dose and return to the regular schedule. Notify health care professional if more than 1 dose is missed.
- Home Care Issues: Instruct patient and family on preparation and correct technique for administration of injection and care and disposal of equipment. Advise patient to read Medication Guide prior to administration and with each prescription refill to check for changes. Explain to patient that brands should not be switched without consulting health care professional; may result in a change of dose.
- Review side effects with patient. Interferon may be temporarily discontinued or dose decreased by 50% if serious side effects occur.
- Instruct patient to notify health care professional promptly if fever; chills; cough; shortness of breath; signs of infection; lower back or side pain; bleeding gums; bruising; blood in stools, urine, or emesis; increased fatigue; depressed or euphoric mood; hallucinations; unusual bleeding occur. Instruct patient to use mild narcotics and electric razor and to avoid baths. Cautions: Consider not to drink alcoholic beverages or take medication containing aspirin or NSAIDs; may precipitate gastric bleeding.
- Instruct patient of the potential for depression and advise patient to notify health care professional if depression occurs.
- Discuss with patient the possibility of hair loss. Explore coping strategies.
- Explain to patient that fertility may be impaired and that contraception is needed during treatment to prevent potential harm to the fetus.
- Instruct patient not to receive any vaccinations without advice of health care professional.
- Emphasize need for periodic lab tests to monitor for side effects.

CONTINUED
Evaluation/Desired Outcomes

- Normalized blood parameters (hemoglobin, neutrophils, platelets, monocytes, and bone marrow and peripheral hairy cells) in hairy cell leukemia. Response may not be seen for 6 mo with interferon alpha-2b.

- Decrease in the size and number of lesions in Kaposi’s sarcoma. Therapy may be required for 6 mo before full response is seen. Therapy is continued until disease progression or a maximum response has been achieved after 6 mo of therapy.

- Increase in time to relapse and overall survival in patients with malignant melanoma.

- Disappearance of or decrease in size and number of genital warts. Condylomata acuminata usually respond in 4–8 wk. A second course of therapy may be required if genital warts persist and laboratory values remain in acceptable limits.

- Decrease in symptoms and improvement in liver function tests and progression of hepatic damage in patients with hepatitis B or hepatitis C infection.

Why was this drug prescribed for your patient?