Peginterferon alfa-2B (peg-in-ter-feer-on al fa 2b)

Pegintron, Sylatron

Classification
Therapeutic: immune modifiers
Pharmacologic: interferons
Pregnancy Category C

Indications
Pegintron—Combination therapy with ribavirin and approved hepatitis C virus (HCV) NS3/4A protease inhibitor in patients ≥ 18 yr old with chronic hepatitis C who have compensated liver disease and HCV genotype 1 infection. Pegintron—Combination therapy with ribavirin in patients with chronic hepatitis C and compensated liver disease who have HCV genotypes 2 or 3, are 3–17 years old, or have HCV genotype 1 and are unable to take a HCV NS3/4A protease inhibitor. Pegintron—Monotherapy of chronic hepatitis C in previously untreated patients who have compensated liver disease and contraindications to or significant intolerances to ribavirin.

Sylatron: Adjuvant treatment of melanoma with microscopic or gross nodal involvement within 84 days of definitive surgical resection including complete lymphadenectomy.

Action
Binds to specific receptors on cell surfaces; initiate a chain of events which include suppression of cell proliferation, enhanced phagocytic activity and augmented specific cytotoxicity of lymphocytes; also inhibits viral replication in virus-infected cells. Unknown mechanism for melanoma.

Therapeutic Effects:
Decreased progression of liver damage (for hepatitis C). Improved relapse-free survival (for melanoma).

Pharmacokinetics
Absorption: Well absorbed following subcut administration.
Distribution: Unknown.
Metabolism and Excretion: 50% readily excreted; remainder of metabolites and excretion. Pegylation of interferon results in decreased elimination and longer duration of action.

Contraindications/Precautions
Contraindicated in: Hypersensitivity; Autoimmune hepatitis; Moderate or severe hepatic impairment; Pregnancy or lactation.

Use Cautiously in: CCr 50 mL/min (dose may be necessary); Cardiovascular disease; Neuropsychiatric history (condition may be exacerbated); Diabetes mellitus or hypertension (may have q risk of ophthalmic adverse reactions); History of retinopathy; Geri: q risk of adverse reactions; age related; OB: Use only if benefits outweigh risks to fetus; Pedi: Pegintron: Children ≤ 3 yr (safety and effectiveness not established); Sylatron: Children ≤ 18 yr (safety and effectiveness not established).

Adverse Reactions/Side Effects
CNS: SUICIDAL IDEATION, anxiety, depression, dizziness, fatigue, headache, insomnia, aggressive behavior, hostility, depression, agitation, delirium, psychoses.
EENT: cotton wool spots, retinal artery/vein obstruction, retinal hemorrhage.
CV: MYOCARDIAL INFARCTION, arrhythmias, cardiomyopathy, heart block, hypertension, tachycardia.
Resp: pulmonary infiltrates/pneumonitis, pharyngitis, cough, dyspnea, sinusitis.
GI: COLITIS, pancreateatitis, abdominal pain, anorexia, diarrhea, nausea, dyspepsia, vomiting.
Derm: alopecia, dry skin, flushing, sweating, pruritus, rash.
Endo: hyperglycemia, thyroid abnormalities.
Hemat: NEUTROPENIA, THROMBOCYTOPENIA.
Local: injection site pain/reactions.
Metab: weight loss.
MS: musculoskeletal pain.
Misc: allergic reactions including ANAPHYLAXIS, fever, flu-like syndrome, development of antibodies, development/exacerbation of autoimmune disorders, rashes.

Interactions
Drug-Drug: None currently known.

Route/Dosage
Hepatitis C
Monotherapy
Subcut (Adults): 137–160 kg—150 mcg once weekly for 1 yr. 107–136 kg—120 mcg once weekly for 1 yr. 89–106 kg—96 mcg once weekly for 1 yr. 73–88 kg—72 mcg once weekly for 1 yr. 56–72 kg—54 mcg once weekly for 1 yr. 35–55 kg—36 mcg once weekly for 1 yr. 17–34 kg—24 mcg once weekly for 1 yr.

Half-life: 40 hr.
kg—80 mcg once weekly for 1 yr.
57–72 kg—64 mcg once weekly for 1 yr.
46–56 kg—50 mcg once weekly for 1 yr.
45 kg—40 mcg once weekly for 1 yr.

Combination Therapy (Duration of therapy is 48 wk for viral genotype 1 or if previously failed therapy; 24 wk for viral genotypes 2 and 3)

Subcut (Adults) >100 kg—1.5 mcg/kg once weekly based on actual body weight.
86–105 kg—150 mcg once weekly.
76–85 kg—120 mcg once weekly.
61–75 kg—96 mcg once weekly.
51–60 kg—80 mcg once weekly.
40–50 kg—64 mcg once weekly.
30–39 kg—50 mcg once weekly.

Subcut (Children 3–17 yr): 60 mcg/m² once weekly.

Melanoma
Subcut (Adults): 6 mcg/kg/week for 8 doses, then 3 mcg/kg/week for up to 5 yr.

NURSING IMPLICATIONS

Assessment

- Assess patient for development of flu-like syndrome (fever, chills, myalgia, headache). Symptoms tend to decrease, even with continued therapy. Acetaminophen or administration at bedtime may be used to control these symptoms.
- Assess mental status throughout therapy. May cause depression and suicidal ideation. May require discontinuation of medication and continued treatment.
- Monitor cardiac status, especially in patients with underlying cardiac disease. Monitor ECG prior to and periodically during therapy.
- Assess patient for signs and symptoms of ulcerative colitis (abdominal pain, bloody diarrhea, fever). Discontinue peginterferon alpha 2b immediately if these symptoms occur; may be fatal. Colitis usually resolves within 1-3 weeks of discontinuation.
- Assess patient for signs of pancreatitis (nausea, vomiting, abdominal pain) periodically during therapy. May be fatal. Suspend therapy in patients with symptoms of pancreatitis. Discontinue therapy if pancreatitis is diagnosed.
- Observe for signs and symptoms of hypersensitivity reactions (urticaria, angioedema, bronchospasm, anaphylaxis). Notify health care professional if these occur. Treatment does not necessitate discontinuation of therapy.
- Lab Test Considerations: Monitor serum HCV RNA levels after 24 wk of treatment. Discontinuation should be considered in any patient who has detectable levels after 24 wk of therapy.
- Monitor for CBC and differential prior to and periodically during therapy. May cause neutropenia and thrombocytopenia. Levels usually return to normal within weeks of discontinuation of therapy.
- Monitor liver function tests periodically during therapy. May cause transient elevated ALT not associated with liver dysfunction.
- May aggravate hypothyroidism or hyperthyroidism. Monitor thyroid-stimulating hormone levels.
- May cause hypophosphatemia.

Potential Nursing Diagnoses

Risk for injury (Side Effects)
Risk for infection (Side Effects)

Implementation

- If serious adverse reactions occur, dose should be decreased by 50%. If persistent intolerance occurs following dose reduction, discontinue therapy.
- Subcut: Two syringes are provided by manufacturer, one for reconstitution and one for administration. Syringes are equipped with a plastic safety shield that locks over the needle with an audible click (green stripe on safety shield fits over red stripe on needle).
- Reconstitute with 0.7 mL of supplied diluent (sterile water for injection). Do not reconstitute with other diluents. Swirl gently. Discard remaining diluent; for single use only. Do not administer solutions that are discolored or contain particulate matter. Administer immediately after reconstitution, stable for 24 hr if refrigerated. Discard unused portion.

Patient/Family Teaching

- Instruct patient to take medication as directed at the same time each day, same day each week. Take missed doses as soon as possible the same day or next day. Notify health care professional if dose is missed for several days. Do not double doses or take more than one dose unless instructed by health care professional.
- Discuss possibility of flu-like reaction 3–6 hr after dose. Acetaminophen may be taken prior to injection and every 3–4 hr afterward as needed to control symptoms.

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peginterferon alfa-2B

- May cause dizziness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.
- Review side effects with patient. Peginterferon alfa-2B may be temporarily discontinued or dose decreased by 50% if common side effects occur.
- Instruct patient to notify health care professional promptly if abdominal pain, bloody diarrhea, or fever occur.
- Inform patient of the potential for depression and advise patient to notify health care professional immediately if depression or suicidal ideation occurs. May require discontinuation of therapy.
- Discuss with patient the possibility of hair loss. Explore coping strategies.
- Advise patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult with health care professional before taking other medications.
- Advise patient to inform health care professional if pregnancy is planned or suspected, or if breast feeding.

Home Care Issues: Instruct patient and family on preparation and correct technique for administration of injection and care and disposal of equipment.

Evaluation/Desired Outcomes

- Decrease in symptoms and improvement in liver function tests in patients with chronic hepatitis C infection.
- Improved relapse-free survival (for melanoma)

Why was this drug prescribed for your patient?