Peginterferon alfa-2a (Pegasys)

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Drug Summary

Peginterferon alfa-2a played a role in the treatment of chronic hepatitis C prior to the availability of direct-acting antiviral agents. Peginterferon alfa-2a is no longer recommended for the treatment of hepatitis C due to relatively poor efficacy and high rate of adverse effects.

Class and Mechanism

Peginterferon alfa-2a consists of interferon alfa-2a covalently linked to a 40-kd branched polyethylene glycol (PEG). The biologic activity of peginterferon alfa-2a derives from its interferon alfa-2a moiety, which impacts both adaptive and innate immune responses against hepatitis C virus. This alpha interferon binds to and activates human type 1 interferon receptors on hepatocytes which activates multiple intracellular signal transduction pathways, culminating in the expression of interferon-stimulated genes that produce an array of antiviral effects, such as blocking viral protein synthesis and inducing viral RNA mutagenesis. Compared with the native interferon alfa-2a, the peginterferon alfa-2a has sustained absorption, delayed clearance, and a prolonged half life.

Manufacturer for United States

Peginterferon alfa-2a is manufactured in the United States as Pegasys by Genentech, a member of the Roche Group (Figure 1) and (Figure 2) and (Figure 3).

Cost and Medication Access

The estimated wholesale acquisition cost (WAC) for peginterferon alfa-2a is approximately $770 per
180 mcg dose. This corresponds to a cost of approximately $9,250 for a 12-week supply, $18,500 for a 24-week supply, and $37,000 for a 48-week supply. For information regarding coverage, reimbursement, and patient assistance for peginterferon alfa-2a (Pegasys), visit the Access Solutions website or call 1-888-941-3331. This is the same patient assistance program for the Genetech manufactured ribavirin (Copegus).

### Adverse Effects

In most patients, peginterferon alfa-2a causes numerous problematic side effects. In clinical studies involving peginterferon alfa-2a, the following adverse effects were reported most often: headache, fatigue, and influenza-like symptoms, including myalgia, pyrexia, arthralgia, nausea, and anorexia. In addition, significant hematologic toxicity can occur due to peginterferon alfa-2a, including neutropenia and thrombocytopenia. Patients can develop ophthalmologic disorders and all patients should receive a baseline eye examination and should have a prompt eye examination if they develop ocular symptoms. Neuropsychiatric effects such as insomnia, depression, and irritability can also occur. Peginterferon alfa-2a may cause or aggravate life-threatening neuropsychiatric, autoimmune, ischemic, or infectious disorders. Further, the use of peginterferon in patients with cirrhosis can cause life-threatening hepatic decompensation. To report suspected adverse reactions, contact (1) Genetech at 1-888-835-2555 or (2) the FDA at 1-800-FDA-1088.

### Key Drug Interactions

For complete information on peginterferon alfa-2a-related drug interactions, see the Drug Interactions section in the Peginterferon alfa-2a (Pegasys) Prescribing Information.
Figures

Figure 1 Packaging - Peginterferon alfa-2a (Pegasys)

Photo: Andrew Karpenko, University of Washington
Figure 2 Single Use Syringe - Peginterferon alfa-2a (Pegasys)

Photo: Andrew Karpenko, University of Washington
**Figure 3** 180 mcg/0.5 ml autoinjector - Peginterferon alfa-2a (*Pegasys*)

Photo: Andrew Karpenko, University of Washington