# PDL NEW DRUG REVIEW

**Proprietary Name: Plegridy®**
**Common Name: peginterferon beta-1a**
**PDL Category: Multiple Sclerosis Agents Interferons**

| Comparable Products | Preferred Drug List Status |
|---|---|
| Avonex | Preferred |
| Rebif | Non-Preferred |

## Summary


**Indications and Usage:** For the treatment of patients with relapsing forms of multiple sclerosis (MS). This is a pregnancy category C medication. The safety and efficacy of use in children have not been established.

**Dosage Forms:** Pen and prefilled syringe injectables: 125mcg/0.5ml; A starter pack is available that contains a 63mcg/0.5ml dose and a 94mcg/0.5ml dose to allow for titration

**Recommended Dosage:** The recommended maintenance dose is 125mcg SC Q14 days after the following titration schedule of 63mcg SC on day 1, 94mcg on day 15 (14 days later), and then 125mcg on day 29 (another 14 days later). The sites for administration should be rotated and typically include the abdomen, back of upper arm, and thigh. Prophylactic and concurrent use of analgesics and/or antipyretics may help eliminate or prevent flu-like symptoms that are sometimes experienced with use.

It is recommended to monitor for adverse events in those with severe renal impairment. There was no information found regarding dose adjustments in those with renal or hepatic impairment; however, severe hepatic injury has been reported with interferon beta use and elevations in hepatic enzymes and hepatic injury were both seen with Plegridy® use in clinical trials. It is therefore recommended to monitor patients for signs and symptoms of hepatic injury.

**Common Adverse Drug Reactions:** *Listed % incidence for adverse drug reactions= reported % incidence for drug (Plegridy®) minus reported % incidence for placebo. Please note that an incidence of 0% means the incidence was the same or that the active drug was less than its comparator.* The most frequently reported adverse events included headache (11%), nausea (3%), vomiting (3%), myalgia (13%), arthralgia (4%), injection site erythema (55%), influenza like illness (34%), pyrexia (30%), chills (12%), injection site pain (12%), asthenia (5%), injection site pruritus (12%), hyperthermia (3%), pain (2%), injection site edema (3%), injection site warmth (3%), injection site hematoma (2%), injection site rash (2%), body temperature increased (3%), alanine aminotransferase increased (3%), aspartate aminotransferase increased (2%), gamma-glutamyl-transferase increased (2%), and pruritus (3%).

In addition, the lab abnormality of decreases in WBC counts $<3.0X10^9/L$ was reported (7% Plegridy® vs 1% placebo). It is recommended that patients be monitored for infections, bleeding, and symptoms of anemia, as well as CBCs, differential WBC counts, and platelet counts during treatment.

The incidence of injection site reactions (e.g. injection site erythema, pain, pruritus, or edema) was significantly higher with Plegridy® vs placebo (66% vs 11%). Furthermore, one patient out of 1468 receiving Plegridy® experienced injection site necrosis.

**Contraindications:** A history of hypersensitivity to natural or recombinant interferon beta or peginterferon, or any component of the compound

**Manufacturer:** Biogen Idec Inc

**Analysis:** Peginterferon beta-1a, the active ingredient of Plegridy®, is the first peginterferon product approved for the treatment of MS. It is an interferon beta-1a product that is pegylated; this allows for a longer half-life and can be dosed every 2 weeks. Its exact mechanism of action for use as MS treatment is not known.

The safety and efficacy of Plegridy® was assessed in a randomized, double-blind, placebo-controlled, phase 3 study. The primary outcome was the annualized relapse rate (ARR) over 1 year, while secondary outcomes included the proportion of patients relapsing, the number of new or newly enlarging T2 hyperintense lesions, and the time to confirmed disability progression. Results suggested a statistically significantly difference in ARR in favor of Plegridy® (0.26) vs placebo (0.4; p=0.0007). The proportion of patients with relapses was 0.19 with Plegridy® vs 0.29 with placebo (p=0.0003), while the proportion with disability progression was 0.07 vs 0.11, respectively (p=0.0383). (**IME Comments**: The proportion of patients with relapses at 48 weeks was lower with those taking Plegridy® (18.7%) as compared with those taking placebo (29.1%). This resulted in an NNT of 10.) The mean number of new/newly enlarging T2 hyperintense lesions was significantly less with Plegridy® vs placebo (3.6 vs 10.9; p<0.0001), as was the mean number of Gd enhancing lesions (0.2 vs 1.4; p<0.0001).

There is no evidence to support that Plegridy® is safer or more effective than the other more cost effective medications available. It is therefore recommended that Plegridy® remain non-preferred and require prior authorization and be available to the few who are unable to tolerate or who have failed on preferred medications.

**PDL Placement:**
- ☐ **Preferred**
- ☒ **Non-Preferred**

## References

[1] Plegridy [package insert]. Cambridge, MA: Biogen Idec Inc; 2014.