## Drug Monograph

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| Drug/Drug Class: | **Plegridy™ (peginterferon beta-1a) injection/ MS Agents** |
| Prepared for: | MO HealthNet |
| Prepared by: | Xerox Heritage, LLC |

☒ **New Criteria** ☐ **Revision of Existing Criteria**

## Executive Summary

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| **Purpose:** | The purpose of this monograph is to provide a review of new therapy to determine whether the reviewed drug should be made available on an open access basis to prescribers, require a clinical edit or require prior authorization for use. |
| **Dosage Forms & Manufacturer:** | Plegridy™ is available in a starter pack containing two single-dose prefilled pens. One pen that contains 63 mcg and 1 pen that contains 94 mcg of peginterferon beta-1a. Plegridy™ is also available in a carton containing two single-dose prefilled syringes with each providing 125 mcg of peginterferon beta-1a.<br><br>Biogen Idec Inc.<br>Cambridge, MA 02142 |
| **Summary of Findings:** | Plegridy™ demonstrated efficacy in the treatment of relapsing multiple sclerosis in a randomized, double-blind, placebo-controlled clinical trial (n=1012). It significantly reduced the annualized relapse rate compared with placebo (26% vs 40%), reduced disability progression, and improved MRI outcomes at 48 weeks. |
| **Status Recommendation:** | ☐ Prior Authorization (PA) Required ☐ Open Access<br>☐ Clinical Edit ☒ PDL |
| **Type of PA Criteria:** | ☐ Increased Risk of ADE ☐ Preferred Agent<br>☐ Appropriate Indications ☒ Under Solicitation |

## Purpose

The purpose of this monograph is to provide a review of new therapy to determine whether the reviewed drug should be considered a prior authorization drug, a clinical edit drug or an open access drug. While prescription expenditures are increasing at double-digit rates, payors are evaluating ways to control these costs by influencing prescriber behavior and guide appropriate medication usage. This review will assist in the achievement of qualitative and economic goals related to health care resource utilization. Restricting the use of certain medications can reduce costs by requiring documentation of appropriate indications for use, and where appropriate, encourage the use of less expensive agents within a drug class.

## Introduction[2]

Multiple sclerosis (MS) is an unpredictable, often disabling disease of the central nervous system that disrupts the flow of information within the brain, and between the brain and body. MS is thought to affect more than 2.3 million people worldwide. While the disease is not contagious or directly inherited, epidemiologists — scientists who study patterns of disease — have identified factors in the distribution of MS around the world that may eventually help determine what causes the disease. These factors include gender, genetics, age, geography and ethnic background.

## Dosage Form(s) [1]

Plegridy™ is available in a starter pack containing two single-dose prefilled pens. One pen that contains 63 mcg and 1 pen that contains 94 mcg of peginterferon beta-1a. Plegridy™ is also available in a carton containing two single-dose prefilled syringes with each providing 125 mcg of peginterferon beta-1a.

## Manufacturer [1]

Biogen Idec Inc., Cambridge, MA 02142

## Indication(s) [1]

Plegridy™ is indicated for the treatment of relapsing forms of multiple sclerosis in adult patients.

## Clinical Efficacy [1] (mechanism of action/pharmacology, comparative efficacy)

Plegridy™ is a long-acting interferon beta. The exact mechanism of action of peginterferon beta-1a in patients with multiple sclerosis is unknown.

Pharmacokinetics

| | **Plegridy** |
|---|---|
| **Volume of distribution** | 481 L |
| **Metabolism** | Catabolism |
| **Excretion** | Urine |
| **Half-life** | 5 days |

Plegridy™ significantly reduced the annualized relapse rate compared with placebo in patients with relapsing/remitting multiple sclerosis.

 

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| **STUDY DESIGN** | Randomized, double-blind, placebo-controlled clinical trial (n=1012). |
| **INCLUSION CRITERIA** | Adults with multiple sclerosis who had baseline Expanded Disability Status Scale (EDSS) scores from 0 to 5, with at least 2 relapses within the previous 3 years, and at least 1 relapse within the previous year. |
| **EXCLUSION CRITERIA** | Progressive forms of multiple sclerosis. |
| **TREATMENT REGIMEN** | Patients (mean age, 37 years; 71% women) were randomized to receive Plegridy™ 125 mcg subQ once every 14 days (n=512) or placebo (n=500). |
| **RESULTS** | Plegridy™ significantly reduced the annualized relapse rate compared with placebo (26% vs 40%). Significantly fewer patients treated with Plegridy™ experienced a relapse (19% vs 29%) at 48 weeks compared with placebo. Disability progression at 48 weeks was noted in 7% of patients who received Plegridy™ and 11% of patients who received placebo. MRI results showed significantly fewer new or newly enlarging T2 hyperintense lesions (mean, 3.6 vs 10.9) and gadolinium-enhanced lesions (mean, 0.2 vs 1.4) in the Plegridy™ group compared with the placebo group. |
| **SAFETY** | Not specified |

## Contraindications [(1)]

- Hypersensitivity to natural or recombinant interferon beta or peginterferon, or any product component

## Warnings and Precautions [(1)]

- Congestive heart failure, cardiomyopathy, and cardiomyopathy with congestive heart failure have been reported; monitoring recommended in those with preexisting significant cardiac disease.
- Injection site reactions, including necrosis, have been reported; avoid injecting near necrotic area or discontinue based on extent of necrosis; discontinue use if multiple lesions occur.
- Decreased peripheral blood counts, including pancytopenia and severe thrombocytopenia, have been reported; monitoring recommended.
- Hepatic injury, including hepatitis, autoimmune hepatitis, and severe hepatic failure, has been reported; monitoring recommended; consider discontinuation if condition occurs.
- Asymptomatic elevations of hepatic transaminases have been reported; monitoring recommended.
- Anaphylaxis and serious allergic reactions have been reported; discontinue if condition occurs.
- Angioedema and urticaria have been reported; discontinue if condition occurs.

 

- Autoimmune disorders (eg, idiopathic thrombocytopenia, hyperthyroidism and hypothyroidism, autoimmune hepatitis) have been reported; monitoring recommended; discontinue if new autoimmune disorder occurs.
- Seizures have been reported; caution recommended in patients with history of seizure disorders.
- Depression, suicidal ideation, and suicide have been reported; consider discontinuation if depression or other severe psychiatric symptoms develop.

## Adverse Effects [1]

| Most common, ≥ 5% | Plegridy™ (n=512) | Placebo (n=500) |
|---|---|---|
| **Injection site erythema** | 62% | 7% |
| **Influenza-like illness** | 47% | 13% |
| **Pyrexia** | 45% | 15% |
| **Headache** | 44% | 33% |
| **Myalgia** | 19% | 6% |
| **Chills** | 17% | 5% |
| **Injection site pain** | 15% | 3% |
| **Asthenia** | 13% | 8% |
| **Injection site pruritus** | 13% | 1% |
| **Arthralgia** | 11% | 7% |
| **Nausea** | 9% | 6% |
| **ALT increased** | 6% | 3% |
| **Body temperature increased** | 6% | 3% |
| **Pain** | 5% | 3% |
| **Vomiting** | 5% | 2% |

## Drug Interactions [1]

- None listed

 

## Dosage and Administration [1]

The recommended starting dose is 63 mcg subQ on day 1, 94 mcg subQ on day 15, then 125 mcg subQ on day 29; continue with 125 mcg subQ every 14 days thereafter. Analgesics and/or antipyretics may be used to prevent or reduce flu-like symptoms.

## Cost

| GENERIC NAME | BRAND NAME | MANUFACTURER | STRENGTH | MAINTENANCE DOSE | COST*/ MONTH |
|---|---|---|---|---|---|
| Peginterferon beta-1a | Plegridy | Biogen Idec | 125 mcg/0.5 ml prefilled single-dose pen | 125 mcg every 14 days | $5726.40 |
| Interferon beta-1a | Rebif | EMD Serono | 22 mcg/0.5 ml prefilled single-dose autoinjector | 30 mg once weekly | $6209.94 |

*WholesaleAcquisitionCost

## Conclusion

Plegridy™ injection is the first pegylated interferon indicated for the treatment of relapsing forms of multiple sclerosis, allowing for every 2-week dosing. It significantly reduced the annualized relapse rate compared with placebo (26% vs 40%) in a randomized, double-blind clinical trial (n=1012). It also reduced disability progression and improved MRI outcomes at 48 weeks compared with placebo. The most common adverse effects are injection-site reactions, flu-like illnesses, pyrexia, headache, myalgia, and chills.

## Recommendation

This drug is being considered for inclusion in the state specific Preferred Drug List.

## References


1. Product Information: Plegridy™, peginterferon beta-1a. Biogen Idec Inc, Cambridge, MA, 8/2014.
2. What is MS (2014). Retrieved March 3, 2015 from http://www.nationalmssociety.org



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Date: March 3, 2015


 