

**Medication Policy Manual**

**Policy No:** dru108

**Topic:** Betaseron<sup>®</sup>, interferon beta-1b

**Date of Origin:** June 18, 2004

**Revised/Effective Date:** September 11, 2009

**Next Review Date:** September 2010

### **IMPORTANT REMINDER**

This Medical Policy has been developed through consideration of medical necessity, generally accepted standards of medical practice, and review of medical literature and government approval status.

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control.

The purpose of medical policy is to provide a guide to coverage. Medical Policy is not intended to dictate to providers how to practice medicine. Providers are expected to exercise their medical judgment in providing the most appropriate care.

### **Description**

Interferon beta-1b (Betaseron) is an interferon used in the treatment of multiple sclerosis (MS). It helps to reduce the number of clinical exacerbations associated with this condition.

## Policy/Criteria

- I. Most contracts require prior authorization approval of interferon beta-1b prior to coverage. Interferon beta-1b may be considered medically necessary in patients with multiple sclerosis when treatment with interferon beta-1a (Avonex<sup>®</sup>), interferon beta-1a (Rebif<sup>®</sup>) or glatiramer acetate (Copaxone<sup>®</sup>) is ineffective or not tolerated.
  
- II. Administration, Quantity Limitations and Authorization Period
  - A. Regence considers interferon beta-1b to be a self-administered medication.
  - B. When prior authorization is approved, interferon beta-1b may be authorized in quantities of 15 vials (one 0.3 mg vial injected subcutaneously every other day) per month.
  - C. Authorization may be reviewed at least annually to confirm that current medical necessity criteria are met and that the medication is effective.

## Position Statement

### *Summary*

- All interferon formulations (interferon beta-1a and interferon beta-1b) and glatiramer acetate decrease the number of attacks in patients with relapsing remitting multiple sclerosis. [2, 7-8]
- There is no reliable evidence of increased efficacy or safety of one interferon beta product over another in reducing the signs and symptoms of multiple sclerosis or slowing the progression of disease. [1, 9-11]

### *Clinical efficacy*

- There are several randomized, controlled trials comparing the efficacy of the different interferon products. The studies contain sufficient flaws (e.g., open-label design, large proportion of patients not included in the efficacy analysis) so as to render conclusions regarding the comparative efficacy unreliable. [9-11]

### *Guidelines and Dosing Considerations*

- The American Academy of Neurology Clinical Practice Guidelines on the treatment of Multiple Sclerosis and a Cochrane analysis do not clearly indicate that one interferon beta product is superior to another on the basis of clinical trial evidence. <sup>[2, 7]</sup>
- The relationship between neutralizing antibody (NAb) formation and subsequent effects on clinical efficacy and safety of the interferon products is not entirely understood and remains controversial. However, studies suggest that the presence of NAb against interferon beta reduce the clinical efficacy of the drug and should therefore play a role in treatment decisions. <sup>[3]</sup>
- According to FDA approved package labeling of the three commercially available interferon beta products, the immunogenicity of each product (formation of NAb) in controlled clinical trials are as follows:
  - \* Interferon beta-1b (Betaseron<sup>®</sup>): 45% <sup>[4]</sup>
  - \* Interferon beta-1a (Rebif<sup>®</sup>): 24% <sup>[5]</sup>
  - \* Interferon beta-1a (Avonex<sup>®</sup>): 5% <sup>[6]</sup>
- There is no reliable evidence to support superior clinical outcomes when interferon beta-1b is given in dosages greater than what is recommended in the prescribing information (package insert) and approved by the Food and Drug Administration (FDA). The recommended dosage is 0.25 mg injected subcutaneously every other day. <sup>[4]</sup>

### **References**

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3. Sorensen PS, Ross C, Clemmesen KM, et al. "Clinical importance of neutralizing antibodies against interferon beta in patients with relapsing-remitting multiple sclerosis." *Lancet* 2003;362:1184-91.

4. Betaseron<sup>®</sup> (interferon beta-1b) Prescribing Information. Berlex Laboratories; Montville, NJ, April 2008.
5. Rebif<sup>®</sup> (interferon beta-1a) Prescribing Information. Serono, Inc.; Rockland, MA, December 2008.
6. Avonex<sup>®</sup> (interferon beta-1a) Prescribing Information. Biogen IDEC, Inc.; Cambridge, MA, October 2008.
7. Rice G PA, Incorvaia B, Munari L, Ebers G, Polman C, D'Amico R, Filippini G. Interferon in relapsing-remitting multiple sclerosis. *The Cochrane Database of Systematic Reviews* 2001, Issue 4. Art. No.: CD002002. DOI: 10.1002/14651858.CD002002.
8. Munari L, Lovati R, Boiko A. Therapy with glatiramer acetate for multiple sclerosis. *The Cochrane Database of Systematic Reviews* 2003, Issue 4. Art. No.: CD004678. DOI: 10.1002/14651858.CD004678.
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10. Koch-Henriksen N, Sørensen PS, Christensen T, Frederiksen J, Ravnborg M, et al.; Danish Multiple Sclerosis Group. A randomized study of two interferon-beta treatments in relapsing-remitting multiple sclerosis. *Neurology*. 2006;66(7):1056-60. Epub 2006 Mar 1.
11. Etemadifar M, Janghorbani M, Shaygannejad V. Comparison of Betaferon, Avonex, and Rebif in treatment of relapsing-remitting multiple sclerosis. *Acta Neurol Scand*. 2006;113(5):283-7.
12. Copaxone<sup>®</sup> (glatiramer acetate) Prescribing Information. TEVA Neuroscience, Inc., Kansas City, MO. February 22009.

<b>Cross References</b>
Self Administered Injectables dru110

Codes	Number	Description
HCPCS	J1830	Injection, Interferon beta 1b, 0.25mg