Actimmune
(interferon gamma-1B)

RATIONALE FOR INCLUSION IN PA PROGRAM

Background

Actimmune (interferon gamma-1B) is a bioengineered form of interferon gamma, a protein that acts as a biologic response modifier through stimulation of the human immune system (1).

Interferons are naturally occurring small proteins and glycoproteins produced and secreted by cells in response to viral infections and to synthetic or biological inducers. They exert their cellular activities by binding to specific membrane receptors on the cell surface. Once bound to the cell membrane, interferons initiate a complex sequence of intracellular events including the following: induction of certain enzymes, suppression of cell proliferation, immunomodulating activities such as enhancement of the phagocytic activity of macrophages and augmentation of the specific cytotoxicity of lymphocytes for target cells, and inhibition of virus replication in virus-infected cells (2).

Regulatory Status

FDA-approved indications: Actimmune is an interferon indicated for reducing the frequency and severity of serious infections associated with Chronic Granulomatous Disease (CGD). Actimmune is also indicated for delaying time to disease progression in patients with severe, malignant osteopetrosis (SMO) (1).

Acute and transient “flu-like” symptoms such as fever and chills induced by Actimmune at doses of 250 mcg/m^2/day (greater than 10 times the weekly recommended dose) or higher may exacerbate pre-existing cardiac conditions. Actimmune should be used with caution in patients with pre-existing cardiac conditions, including ischemia, congestive heart failure, or arrhythmia (1).

Reversible neutropenia and thrombocytopenia that can be severe and may be dose related have been observed during Actimmune therapy. Caution should be exercised when administrating Actimmune to patients with myelosuppression. Hematologic tests including complete blood counts, differential and platelet counts should be done prior to initiation and at three month intervals during treatment of Actimmune (1).

Hepatotoxicity has been observed in interferon treated patients. Elevations of AST and/or ALT (up to 25-fold) have occurred and reversible with reduction in dosage or interruption of Actimmune

treatment. Renal and liver function tests should be done prior to initiation and at three month intervals during treatment. In patients less than 1 year of age should have liver function tests measured monthly (1).

The safety and effectiveness of Actimmune has been established in pediatric patients aged 1 year and older in CGD patients and 1 month and older in SMO patients. There are no data available for pediatric patients below the age of 1 month (1).

Summary

Actimmune is indicated for reducing the frequency and severity of serious infections associated with Chronic Granulomatous Disease (CGD). Actimmune is also indicated for delaying time to disease progression in patients with severe, malignant osteopetrosis (SMO). Hepatotoxicity, reversible neutropenia, and thrombocytopenia have been observed during Actimmune therapy. Caution should be exercised in patients with myelosuppression and pre-existing cardiac conditions, including ischemia, congestive heart failure, or arrhythmia. Hematologic, renal, and liver function tests should be completed prior to initiation of therapy and at three month intervals. Patients less than 1 year of age should have liver function tests monitored monthly (1).

Prior approval is required to ensure the safe, clinically appropriate and cost-effective use of Actimmune while maintaining optimal therapeutic outcomes.

References

1. Actimmune [package insert]. Lake Forest, IL: Horizon Therapeutics USA, Inc.; March 2021.
2. Interferons. (2007, August 15). Retrieved February 16, 2021, from https://onlinelibrary.wiley.com/doi/abs/10.1002/9780471743989.vse9972