RATIONALE FOR INCLUSION IN PA PROGRAM

Background
Neutropenia is a hematological disorder characterized by an abnormally low number of neutrophils. A person with severe neutropenia has an absolute neutrophil count that is less than 500/mm³ and has a high risk of infection. Neutrophils usually make up 40-60 percent of circulating white blood cells and serve as the primary defense against infections by destroying bacteria in the blood. When chemotherapy agents attack cancer cells in the body, neutrophils and other cells are also attacked. This results in a decrease in healthy white blood cells, making it harder for the body to fight infections. Patients receiving chemotherapy are at risk of becoming neutropenic and can become susceptible to infections that may become life-threatening.

Granix is a short-acting human granulocyte colony-stimulating factor (G-CSF) produced by recombinant DNA technology. G-CSF is a naturally occurring hormone that is produced by the body to stimulate the bone marrow to produce neutrophils, a type of white blood cell that helps the immune system fight infection. A recombinant form of G-CSF is used to treat certain cancer patients with neutropenia in order to stimulate the bone marrow to produce more white blood cells. Granix binds to G-CSF receptors and stimulates proliferation of neutrophils and increase neutrophil counts and activity (1).

Regulatory Status
FDA-approved indication: Granix is a leukocyte growth factor indicated for reduction in the duration of severe neutropenia in patients with non-myeloid malignancies receiving myelosuppressive anti-cancer drugs associated with a clinically significant incidence of febrile neutropenia (1).

Off-label Uses: (3-8)
1. Hepatitis C Treatment Related Neutropenia
2. Cancer Patients Receiving Myelosuppressive Chemotherapy
3. Patients with Acute Myeloid Leukemia Receiving Induction or Consolidation Chemotherapy
4. Patients Undergoing Peripheral Blood Progenitor Cell Collection and Therapy
5. Cancer Patients Receiving Bone Marrow Transplant
6. Patients with Severe Chronic Neutropenia
7. Neutropenia Secondary to Anti-Rejection Medications Post-Transplant

Daily dosing with Granix should continue until the expected neutrophil nadir is passed and the
neutrophil count has recovered to the normal range. Monitor complete blood count (CBC) prior
to chemotherapy and twice per week until recovery. Granix, in clinical studies, was administered
at 5 mcg/kg subcutaneously once daily beginning one day after chemotherapy for at least five
days and continued to a maximum of 14 days or until an ANC of ≥10,000 x 10^6/L after nadir
was reached (1).

Splenic rupture, including fatal cases, can occur following administration of human granulocyte
colony-stimulating factors. In patients who report upper abdominal or shoulder pain after
receiving Granix, discontinue Granix and evaluate for an enlarged spleen or splenic rupture (1).

Acute respiratory distress syndrome (ARDS) can occur in patients receiving human granulocyte
colony-stimulating factors. Evaluate patients who develop fever and lung infiltrates or respiratory
distress after receiving Granix, for ARDS. Discontinue Granix in patients with ARDS (1).

Severe and sometimes fatal sickle cell crises can occur in patients with sickle cell disease
receiving human granulocyte colony-stimulating factors. Consider the potential risks and
benefits prior to the administration of human granulocyte colony-stimulating factors in patients
with sickle cell disease. Discontinue Granix in patients undergoing a sickle cell crisis (1).

The safety and effectiveness of Granix in pediatric patients have not been established (1).

**Summary**

Granix is a leukocyte growth factor indicated for reduction in the duration of severe neutropenia
in patients with non-myeloid malignancies receiving myelosuppressive anticancer drugs
associated with a clinically significant incidence of febrile neutropenia. Splenic rupture, including
fatal cases, can occur following administration of human granulocyte colony-stimulating factors.
Acute respiratory distress syndrome (ARDS) and severe and sometimes fatal sickle cell crises
can occur in patients receiving human granulocyte colony-stimulating factors. The safety and
effectiveness of Granix in pediatric patients have not been established (1).
Prior approval is required to ensure the safe, clinically appropriate and cost effective use of Granix while maintaining optimal therapeutic outcomes.

References