



FILGRASTIM (Neupogen)

WHAT IS FILGRASTIM?

Filgrastim works in the bone marrow, where new blood cells are made. It stimulates the growth of a type of white blood cells called neutrophil granulocytes, or neutrophils.

Filgrastim is a synthetic copy of the body's own "growth factor" to make more neutrophils. Filgrastim is sometimes called G-CSF, or granulocyte colony stimulating factor.

Filgrastim is sold as Neupogen. It is manufactured by Amgen.

WHY DO PEOPLE WITH HIV TAKE FILGRASTIM?

Filgrastim does not treat HIV disease. It is used to treat a shortage of neutrophils. This condition is called neutropenia. If you don't have enough neutrophils, you have a higher risk of getting a bacterial infection. With severe neutropenia, even if you have a bacterial infection, your body might not react in the normal way. For example, you might not get redness and swelling at the site of an infection.

Neutrophils normally account for 55% to 70% of white blood cells. Neutrophils are also called polymorphonuclear cells. On a lab report they may be called "polys." The number of neutrophils is counted as part of a "complete blood count." See Fact Sheet 121 for more information on these laboratory tests.

Advanced HIV disease can cause neutropenia. It can be fairly common in HIV patients using medications that can damage the bone marrow, such as:

- ganciclovir, a drug used to treat cytomegalovirus (see Fact Sheet 504),
- the antiretroviral drug AZT (Retrovir, see Fact Sheet 411)
- the antibiotic TMP/SMX (Bactrim or Septra; see Fact Sheet 535)

- drugs used to treat Kaposi's Sarcoma (see Fact Sheet 511)
- pegylated alpha interferon, used to treat hepatitis C co-infection (see Fact Sheet 507)

Many cases of neutropenia occur in people who are receiving cancer chemotherapy.

WHAT ABOUT DRUG RESISTANCE?

Filgrastim does not work directly against HIV. Instead, it helps treat some of the side effects caused by HIV or by the drugs used to treat it, or related conditions. Viral resistance is not an issue with filgrastim.

HOW IS FILGRASTIM TAKEN?

Filgrastim is destroyed by stomach acid so it cannot be taken in pill form. It has to be injected just below the skin (subcutaneous injection).

It is normally injected once a day. Filgrastim is available in ready-to-use syringes or in a small container (vial) of liquid. The doses are either 300 mcg (micrograms) or 480 mcg.

A new version of filgrastim, pegfilgrastim, was recently approved. This version is "pegylated," which means that another molecule is added to the filgrastim. Pegfilgrastim (Neulasta) can be injected once every few days instead of every day.

Filgrastim should be stored in the refrigerator, but you can let it warm up to room temperature for up to 24 hours before injecting it. Do not shake the syringes or vials.

Because filgrastim is injected, there are no restrictions related to food.

WHAT ARE THE SIDE EFFECTS?

The main side effect of filgrastim is bone pain. This is due to the pressure of the increasing new cells in the bone marrow pushing on the inside of the bones. In most cases this pain can be controlled with over the counter medications.

Filgrastim can also cause an enlargement of the spleen. The spleen is located in the upper left side of the abdomen just under the ribs. Other side effects include weakness, muscle aches, nausea, and stomach pain.

Let your health care provider know right away if you get any of the following side effects while taking filgrastim:

- skin rash
- fever
- chills
- trouble breathing
- drowsiness
- loss of appetite

In rare cases, filgrastim can cause an allergic reaction. Sickle cell anemia may get worse in people taking filgrastim. Be sure your health care provider knows if you have sickle cell anemia.

Be sure your health care provider knows if you are pregnant or nursing.

HOW DOES FILGRASTIM REACT WITH OTHER DRUGS?

Filgrastim works in the bone marrow. It has no known interactions with any medications normally used to treat HIV.

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