

## How Does Chemotherapy Affect White Blood Cells?

Chemotherapy is a crucial phase in cancer treatment, involving the use of medications to destroy cancer cells. However, its effects are extensive and can also weaken the bone marrow, the source of white blood cell production. White blood cells are essential for preventing and limiting infections; their absence leads to a weakened immune system, which is one of the side effects associated with chemotherapy.

## What Is TinaGrast?

TinaGrast is the brand name for the drug Filgrastim, a protein-based medication similar to a natural substance in the human body known as granulocyte colony-stimulating factor (G-CSF). This drug stimulates the production and growth of neutrophils, a type of white blood cell that plays a vital role in the body's defense against infections.

## How Does TinaGrast Help Me?

TinaGrast increases the number of neutrophils in the blood. Neutropenia is a condition where the body produces very few neutrophils. TinaGrast is used to reduce the occurrence of infections in cancer patients who have received potent chemotherapy drugs or high doses of radiation that cause severe neutropenia, leading to fever. However, your body may also produce insufficient neutrophils in conditions other than cancer.

## Why Should I Have Blood Tests?

TinaGrast helps your body produce more neutrophils. To assess the effectiveness of TinaGrast, your doctor will request regular blood tests to determine your blood neutrophil count.

## Important Considerations When Receiving TinaGrast from the Pharmacy:

Ensure that the name "TinaGrast" is present on both the box and the syringe.

TinaGrast is available as a pre-filled, sterile syringe with a volume of 0.5 milliliters.

Do not use the medication if the expiration date on the syringe has passed.

The dosage indicated on the box and syringe should match your doctor's prescription.

#### How to Inspect the Medication's Appearance:

TinaGrast comes in a pre-filled syringe containing a clear, particle-free solution. To visually inspect it, hold the syringe against a dark background under adequate lighting. Gently shake the syringe and look for any particles or sediment. If the solution contains insoluble protein particles, do not use the medication and return it to the pharmacy. Particles in the medication can cause irritation at the injection site, pain, inflammation, severe allergic reactions, and reduced drug efficacy.

#### How Should TinaGrast Be Stored?

Store TinaGrast in a refrigerator at a temperature between 2°C and 8°C.

Do not freeze the medication.

Avoid shaking TinaGrast.

If TinaGrast is accidentally frozen, place it back in the refrigerator to thaw. However, if the medication freezes a second time, do not use it. TinaGrast can be stored at room temperature for up to 24 hours.

Keep the medication away from direct sunlight.

If you have any questions about storage and transportation methods, consult your doctor or nurse. (Amgen, Inc)

### Preparing TinaGrast for Injection:

Select a clean surface, such as a table, for preparation.

Remove one TinaGrast syringe from the refrigerator and allow it to reach room temperature, which typically takes about 30 minutes.

Avoid shaking the medication, as this can damage it. If the solution becomes frothy due to vigorous shaking, do not use it.

Prepare alcohol swabs or sterile cotton and a designated container for disposing of sharp and contaminated objects.

### Preparing the Dose:

Remove the syringe from its packaging.

Detach the plastic needle cover.

If necessary, gently tap the syringe to move air bubbles to the top. Then, expel the air bubbles by moving the plunger.

If your doctor has prescribed a lower dose, adjust the volume in the syringe accordingly.

Place the syringe horizontally on the table, ensuring the needle does not touch any surfaces.

### Selecting and Preparing the Injection Site:

Choose an injection site. Recommended areas for TinaGrast include:

The outer or upper arm

The abdomen, excluding a 5-centimeter area around the navel

The upper thigh

The upper buttock

Use a different injection site each time to help prevent pain.

Do not inject TinaGrast into areas that are sensitive, red, bruised, or firm.

Clean the injection site with a new alcohol swab.

Administering the Dose:

TinaGrast is usually administered subcutaneously. Occasionally, at the doctor's discretion, it may be given intravenously by a nurse.

First, wash your hands with warm water and soap.

Hold the prepared syringe.

With your other hand, gently pinch the skin.

Hold the syringe like a pencil and insert it into the skin at a 90 or 45-degree angle, then inject the medication.

Once the syringe is empty, remove the needle from the skin and place a sterile cotton ball or gauze over the injection site, applying pressure for a few seconds.

Remember that the syringe is for single use only. Dispose of it appropriately.

How Can I Reduce Pain or Burning at the Injection Site?

To minimize pain at the injection site, consider the following:

Allow TinaGrast to reach room temperature before subcutaneous injection.

Apply ice to the subcutaneous injection site to reduce pain in that area.

Use a new injection site each time.

What Important Information Should I Know About TinaGrast?

TinaGrast may reduce the likelihood of infections but does not prevent all infections. Infections can occur during the period when your neutrophil count is still low. You should remain vigilant for symptoms such as fever, chills, hives, pus, sore throat, diarrhea, redness, or swelling. If you experience any of these symptoms while using TinaGrast, inform your doctor or nurse immediately.

You may also experience a reaction around the injection site. If you notice a swollen lump or bruising at the injection site that does not resolve, inform your doctor.

If you have sickle cell anemia, inform your doctor before starting the medication. If your sickle cell anemia worsens during treatment, notify your doctor immediately.

If you have osteoporosis or are sensitive to fructose, inform your doctor.

If you experience any unusual bleeding or bruising while using TinaGrast, inform your doctor immediately, as this may be due to a decrease in blood platelets, which reduces the body's ability to form clots.

Keep your doctor informed about all medications you are taking, including vitamin and herbal supplements.

What Are the Rare Side Effects Associated with All Filgrastim Products?

The spleen is located in the upper left part of the abdomen. If you experience pain in this area, inform your doctor immediately, as it may indicate an enlarged spleen.

Serious allergic reactions may also occur, leading to symptoms such as widespread skin rashes, shortness of breath, wheezing, dizziness, swelling around the mouth and eyes, rapid heartbeat, and sweating. If you experience any of these symptoms after injection, inform your doctor.

The most common side effect is bone and muscle pain. In most patients, this pain is mild. If the pain becomes bothersome, your doctor may prescribe various pain relievers based on the severity of the pain.