What You Need to Know About Fever and Neutropenia

A Possible Side Effect of Chemotherapy

Neutrophils (new-tro-fils) are a type of white blood cell that are part of your body’s immune system. They travel in the bloodstream searching for bacteria and destroying them. Neutrophils are made in your bone marrow, found in the center of your bones. The bone marrow is affected by certain cancer treatments, such as chemotherapy, which can cause it to make too few neutrophils. This condition is called neutropenia.

How can I tell if I have neutropenia?

Neutropenia doesn’t always make you feel different from usual. Frequent blood tests (“blood counts”) are done to keep track of your neutrophil level—or how many neutrophils you have in a microliter (μL) of blood. The fewer neutrophils you have, the greater your risk of a serious or hard-to-treat infection.

- Normal: 2,500–6,000 per μL
- Moderate neutropenia: 500–1,000 per μL
- Mild neutropenia: 1,000–1,500 per μL
- Severe neutropenia: less than 500 per μL

Neutropenia is likely to occur 10–14 days after most chemotherapy treatments, when neutrophil levels go the lowest, or reach their nadir; a few days afterwards, your bone marrow will start making more neutrophils again. Ask your nurse or doctor if your cancer treatment is likely to cause neutropenia.

What if I develop a fever when I have neutropenia?

A fever is often the first sign of infection. Other signs, such as redness and swelling, may not occur when you have neutropenia because there aren’t enough neutrophils to fully attack an infection. Fever may be the only sign of an infection. Having a fever plus neutropenia (febrile neutropenia) requires immediate action; your body will have trouble fighting off an infection without medical help. Fever with neutropenia can quickly turn into a dangerous situation.

Don’t take any medicines to make the fever go away until you’ve seen or talked to the doctor or nurse. Because an infection can worsen quickly if you have neutropenia, the doctor will give you a very strong antibiotic right away to begin fighting the infection.

If your neutrophil count is very low or likely to go very low in the next 2 days, the doctor will run blood, urine, and other tests to try to find out where the infection is in your body and which bacteria are causing it. A physical examination, chest x-ray, and tests of your liver and kidneys may be done. The doctor will also ask about your (and your family’s) recent health history, including questions about travel and contact with pets and animals to help get clues about the cause of the infection. If the doctor thinks you may be at high risk for a serious infection, you may need to go to the hospital. There are specialized treatments to help fight infection and build your immune system back up. You should not wait long to be seen in the hospital. Explain to the doctor or nurse that you have received chemotherapy and have a fever, and you must be seen right away.

How can I prevent neutropenia or fever?

Unfortunately, there is nothing you can do to prevent neutropenia. Certain drugs, such as Neupogen (filgrastim) or Neulasta (pegfilgrastim), can shorten the amount of time you have low neutrophils. You can try to prevent fever and infection. Frequent handwashing by you and the people around you can decrease the risk of infection. [In most cases, alcohol hand gels are just as good as soap and water; rub the gel into hands and fingers briskly for at least 15 seconds.] Your doctor and nurse may give you more instructions to prevent infection.

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