

Difference Between Leukopenia and Neutropenia

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Key Difference - Leukopenia vs Neutropenia

[White blood cells](#) can be considered as the guardian cells of our body. They protect us from the countless number of [pathogens](#) trying to get settled inside the body even in this very second. Thus a decrease in their number can make the body extremely vulnerable to the microbial [infections](#). Such decrease in the white cell count is known as leukopenia. [Neutrophils](#) are one variety of white cells that predominantly act against [bacterial infections](#). A decrease in their number is called neutropenia. Therefore, **neutropenia is one variety of leukopenia**. This is the **key difference** between the two terms.

What is Leukopenia?

The presence of an abnormally low white cell count is known as leukopenia. Leukopenia can either be due to a reduction in the neutrophil count or the [lymphocyte count](#).

Causes

- Congenital immunodeficiencies
- [HIV](#)
- [Malnutrition](#)
- Therapy with [glucocorticoids](#) or cytotoxic drugs
- Autoimmune disorders
- Acute [viral infections](#) – here the reduction is due to a redistribution of lymphocytes rather than an actual decrease in the lymphocyte count.

What is Neutropenia?

An abnormal reduction in the neutrophil count is termed as neutropenia. A significant decrease in the number of neutrophils making the patient susceptible to get fungal and bacterial infections is known as agranulocytosis.

Pathogenesis

Neutropenia can be due to main two mechanisms

- Inadequate granulopoiesis that occurs in the following instances

- Suppression of hemopoietic cells
- Suppression of committed granulocytic precursors
- Megaloblastic anemia and other dysplastic syndromes
- Congenital diseases such as Kostmann syndrome
- Accelerated destruction or sequestration of neutrophils
- Immune-mediated injuries to neutrophils
- [Splenomegaly](#)
- Increased peripheral utilization in severe infections

Neutropenia and agranulocytosis are most commonly due to drug toxicity. Different drugs such as chlorpromazine and phenothiazines can cause neutropenia. Sulfonamides have the potential to cause agranulocytosis.

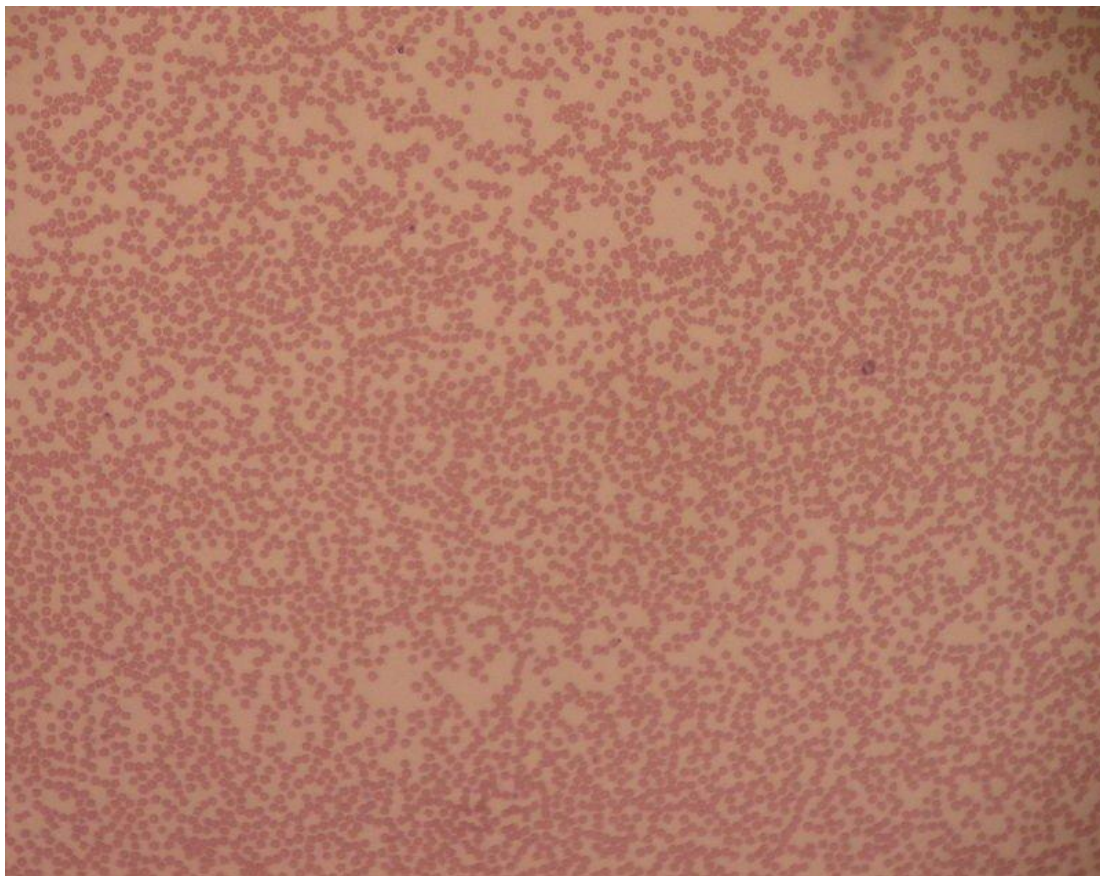


Figure 01: Neutropenia

Clinical features of neutropenia are related to the ongoing infection. With agranulocytosis, the patient can die within few hours due to an overwhelming infection.

What is the Similarity Between Leukopenia and Neutropenia?

- Total white cell count is dropped in both conditions

What is the Difference Between Leukopenia and Neutropenia?

Leukopenia vs Neutropenia

The presence of an abnormally low white cell count is known as leukopenia.

An abnormal reduction in the neutrophil count is termed as neutropenia.

Summary - Leukopenia vs Neutropenia

A decrease in the total number of white blood cells is known as leukopenia whereas a decrease in the number of neutrophils is known as neutropenia. Since the neutrophil count is also included in the total white cell count neutropenia is a subcategory of leukopenia. This is the difference between leukopenia and neutropenia.

Reference:

1.Kumar, Vinay, Stanley Leonard Robbins, Ramzi S. Cotran, Abul K. Abbas, and Nelson Fausto. Robbins and Cotran pathologic basis of disease. 9th ed. Philadelphia, Pa: Elsevier Saunders, 2010. Print.

Image Courtesy:

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