

Leukopenia in Adults: Signs, Risks, and Treatment Options

Jude Sterling*

Department of Immunology, University of British Columbia, Vancouver, Canada

DESCRIPTION

In adults, leukopenia is typically identified through a Complete Blood Count (CBC) test. A normal white blood cell count generally ranges between 4,000 and 11,000 cells per microliter of blood. When the count drops below 4,000, it is considered leukopenia. In some cases, a specific subtype of white blood cells especially neutrophils may be reduced more significantly, a condition known as neutropenia. Since neutrophils play a key role in fighting bacterial infections, neutropenia is often considered the most clinically significant form of leukopenia.

The signs and symptoms of leukopenia are often indirect, meaning they are not caused by the low white blood cell count itself but by the infections that result from weakened immunity. Adults with leukopenia may experience frequent or recurring infections, persistent fever, chills, sore throat, mouth ulcers, skin infections, or slow wound healing. In more severe cases, infections may become more serious or spread rapidly due to the body's reduced ability to defend itself.

Some individuals with mild leukopenia may not experience noticeable symptoms at all. The condition is often discovered incidentally during routine blood tests or evaluations for unrelated medical issues. This is why regular health check-ups can play a crucial role in early detection, especially in individuals with chronic illnesses or those receiving medications that may affect blood cell production.

There are many potential causes of leukopenia in adults. One of the most common causes is bone marrow suppression. The bone marrow is responsible for producing blood cells, including white blood cells. When its function is impaired, WBC production decreases. This can occur due to viral infections, certain cancers such as leukemia, or exposure to radiation and toxic chemicals.

Medications are another major cause. Chemotherapy drugs are well known for lowering white blood cell counts because they target rapidly dividing cells, including those in the bone marrow. However, other medications such as immunosuppressants, anticonvulsants, antithyroid drugs, and some antibiotics can also contribute to leukopenia in susceptible individuals. In many cases, adjusting or changing the medication under medical supervision can help restore normal blood counts.

Autoimmune disorders are also important contributors. In conditions such as Systemic Lupus Erythematosus, the immune system may mistakenly attack white blood cells or bone marrow tissue, leading to reduced production or increased destruction of WBCs. Leukopenia in such cases may fluctuate depending on disease activity and response to treatment. Nutritional deficiencies can also lead to leukopenia. Deficiencies in vitamin B₁₂, folate, copper, or protein can impair bone marrow function and reduce blood cell production. These deficiencies are more common in individuals with poor dietary intake, gastrointestinal disorders, or malabsorption conditions.

For more severe cases, doctors may prescribe medications such as Granulocyte Colony-Stimulating Factors (G-CSF), which stimulate the bone marrow to produce more white blood cells. These treatments are commonly used in patients undergoing chemotherapy or those with severe neutropenia. In some cases, hospitalization may be required to manage serious infections and provide protective care.

Preventive measures are also important in managing leukopenia. Adults with low white blood cell counts are often advised to maintain good hygiene practices, avoid close contact with sick individuals, and seek prompt medical attention if they develop signs of infection. Dietary improvements and lifestyle changes may also support immune health in certain cases.

Monitoring plays a key role, especially for individuals with chronic conditions or those receiving long-term treatments that affect blood counts. Regular blood tests help track WBC levels and guide treatment adjustments. Early detection of declining counts allows for timely intervention and reduces the risk of complications.

CONCLUSION

In conclusion, leukopenia in adults is a condition characterized by reduced white blood cell counts that can significantly increase the risk of infection. It may result from bone marrow disorders, medications, infections, autoimmune diseases such as systemic lupus erythematosus, or nutritional deficiencies. While it may not always produce direct symptoms, its impact on immune function can be serious.

Correspondence to: Jude Sterling, Department of Immunology, University of British Columbia, Vancouver, Canada, Email: jude.s@atlas-institute.ca

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