



# Eosinophilia and its Diagnosis

Ortega Mullins\*

Department of Internal Medicine, Qatar University, Doha, Qatar

## DESCRIPTION

Eosinophilia is a condition in which the number of eosinophils in the peripheral blood exceeds  $5 \times 10^8/L$  ( $500/\mu L$ ). Hypereosinophil exacerbation is an increase in the number of eosinophils in the circulating blood of a person above  $1.5 \times 10^9/L$  (i.e.,  $1,500/\mu L$ ). Hypereosinophil syndrome is a persistent increase in this number above  $1.5 \times 10^9/L$  (i.e.,  $1,500/\mu L$ ) and is also associated with evidence of eosinophil tissue damage. Eosinophils usually make up less than 7% of the circulating white blood cells. A significant increase in the number of extracellular eosinophils detected by histopathological examination is a diagnosis of tissue eosinophilia. There are several known causes, but the most common are allergic reactions or parasitic infections. The diagnosis of eosinophilia is made through a Complete Blood Count (CBC), but the diagnostic procedure for the underlying cause depends on the suspected condition. Absolute eosinophil counts are generally not needed if blood cell counts indicate marked eosinophilia. The location of the causative factor can be used to classify eosinophilia into two common types. And endogenous eosinophilia indicates an etiology within the eosinophil cell lineage.

Specific treatment depends on the underlying disorder, but in idiopathic eosinophilia, corticosteroids can control the disease. Eosinophilia is not a disorder (rather just a sign) unless it is idiopathic. Informally, blood eosinophil levels are often considered to be moderately elevated to  $1,500$ – $5,000/\mu L$  and significantly above  $5,000/\mu L$ . Elevated blood eosinophil counts can be transient, persistent, recurrent, or periodic. The number of eosinophils in human blood is usually between  $100$ – $500/\mu L$ . Maintenance of these levels is between the production of eosinophils by bone marrow eosinophil precursor cells called CFUEos and the migration of circulating eosinophils from the blood through the posterior capillaries to the tissue. Eosinophils make up a small proportion of peripheral blood leukocytes (usually less than 8%) and have a circulating half-life of only 818 hours, but last for at least several weeks in the tissue.

These are a type of finally differentiated granulocytes. They neutralize invading microorganisms, mainly parasites and helminths, but also certain types of fungi and viruses. They are also involved in graft rejection, graft-versus-host disease, and tumor cell death. In performing these functions, eosinophils produce and release a series of toxic active oxygen species as needed, as well as cytokines, chemokines, growth factors, lipid mediators (e.g., leukotrienes, prostaglandins), Platelet activating factor, and toxic substances on-demand proteins. These agents help regulate strong immune and inflammatory responses that destroy invading microorganisms, foreign tissues, and malignant cells. In certain cases of eosinophilia and, to a lesser extent, overproduction and over activation that occurs in eosinophilia, eosinophils are a weapon of their reactive oxygen species and preformed molecules. Can be misdirected and directed to normal tissue. This can cause serious damage to organs such as the lungs, heart, kidneys and brain.

Diagnosis is by Complete Blood Count (CBC). However, in some cases you may need a more accurate absolute eosinophil count. Check your medical history with an emphasis on travel, allergies, and substance use. Often, specific tests of the causative condition are done, such as chest X-ray, urinalysis, liver function tests, renal function tests, and serological tests for parasites and connective tissue diseases. Feces are often tested for traces of parasites (i.e., eggs, larvae, etc.), but negative tests do not rule out parasite infection. For example, trichinosis requires a muscle biopsy. Elevated serum  $B_{12}$  or decreased leukocyte alkaline phosphatase or leukocyte abnormalities in peripheral blood swabs indicate myeloproliferative disorders. In idiopathic eosinophilia, monitor patient complications. Eosinophilia should be resolved by suppressing immune hyper reactivity, so a simple attempt at corticosteroids can diagnose the cause of allergies. Neoplastic disease is diagnosed in the usual way. Bone marrow aspiration and leukemia biopsy, MRI/CT to look for solid tumors, and examination of serum LDH and other tumor markers.

**Correspondence to:** Ortega Mullins, Department of Internal Medicine, Qatar University, Doha, Qatar, E-mail: [omullins@gmail.com](mailto:omullins@gmail.com)

**Received:** 10-Jan-2022, Manuscript No. JB DT-22-15486; **Editor assigned:** 12-Jan-2022, PreQC No. JB DT-22-15486 (PQ); **Reviewed:** 24-Jan-2022, QC No. JB DT-22-15486; **Revised:** 27-Jan-2022, Manuscript No. JB DT-22-15486 (R); **Published:** 31-Jan-2022, DOI: 10.4172/2155-9864.22.13.486.

**Citation:** Mullins O (2022) Eosinophilia and its Diagnosis. J Blood Disord Transfus. 13:486.

**Copyright:** © 2022 Mullins O. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.