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What Causes Eosinophilia?

By Dr Liji Thomas, MD

Eosinophilia is classified as primary or secondary, in addition to the hypereosinophilic syndromes.

Primary Eosinophilia

Primary eosinophilia is a rise in the peripheral eosinophil count without any underlying condition to account for it. It is subclassified into clonal and idiopathic types.

Clonal primary eosinophilia is the type of eosinophilia that is due to proliferation of a clone of eosinophils in the bone marrow, and is found in leukemias or other myeloproliferative disorders.

Idiopathic primary eosinophilia is a term used to refer to peripheral blood eosinophilia without any detectable cause.

Secondary Eosinophilia

Secondary eosinophilia is the result of other disorders not associated with bone marrow proliferation, such as atopy, asthma, and most commonly helminthic infestations.

Hypereosinophilic Syndromes

Hypereosinophilic syndromes are disorders which are characterized by eosinophilia above 1500/µL persisting for at least 6 months, with no underlying disease condition, but associated with organ dysfunction due to eosinophil recruitment into tissues which suffer resulting damage. These include the syndromes of pulmonary eosinophilic infiltrate with eosinophilia, such as:

- Churg-Strauss syndrome
- Tropical pulmonary eosinophilia

Etiology of Secondary Eosinophilia

The following simple classification may help to understand the manifold conditions which may give rise to secondary eosinophilia.

Allergic conditions, especially of the skin and the respiratory tract, such as;

- atopic dermatitis
- asthma
- bronchopulmonary aspergillosis
- allergic rhinitis
- non-allergic rhinitis with eosinophilia syndrome (NARES)
- occupational pneumoconiosis
- urticaria
- milk protein allergy

Connective tissue disorders such as;

- Dressler syndrome
- Eosinophilic fasciitis
- Inflammatory bowel syndrome
- Sarcoidosis
- Rheumatoid arthritis
- Systemic lupus erythematosus
- Polyarteritisnodosa

Immune disorders such as;

- Graft-versus-host disease
- Congenital immunodeficiency syndromes such as Wiskott-Aldrich syndrome or IgA deficiency

Certain tumors, such as Hodgkin's disease, also result in eosinophilia. Others include

- Acute or chronic eosinophilic leukemia
- Some types of acute lymphoblastic leukemia
- Chronic myelocytic leukemia

Invasive parasite infestations result in a rise in the number of peripheral blood eosinophils, such as

- Ascariasis (tapeworm infestation)
- Echinococcosis (dog tapeworm infestation)
- Filariasis
- Cysticercosis
- Hookworm
- Visceral larva migrans
- Schistosomiasis (liver fluke infection)

With regard to parasitosis, a sustained rise in eosinophils is usually seen when the parasites migrate into tissues and come into contact with patrolling immune cells. Once the parasite is walled off within a cyst, or is dormant, eosinophilia tends to fade. Only if the cyst leaks and parasite products again become exposed to immune effector cells (T-lymphocytes) does eosinophilia again appear. Parasites which remain within the lumen of the gut during their whole lifecycle rarely cause persistent eosinophilia.

Again, protozoal infection is not usually a cause of a raised eosinophil count. However, ectoparasites such as the scabies mite are associated with eosinophilia.

Non-parasitic infestations such as:

- Aspergillosis
- Brucellosis
- Chlamydial lung infection
- Acute coccidiomycosis
- Cat-scratch fever
- Infectious mononucleosis
- Mycobacterial infections

Skin disorders due to hypersensitivity reactions:

- Dermatitis herpetiformis
- Pemphigus
- psoriasis

Drug-Induced Eosinophilia

Asymptomatic drug-induced eosinophilia

- quinine
- penicillin
- quinolones
- cephalosporins

Eosinophilia associated with pulmonary infiltrates

- non-steroidal anti-inflammatory drugs (NSAIDs)
- sulfonamides

Eosinophilia associated with hepatitis

- tetracyclines
- Selective serotonin receptor inhibitors (SSRIs)
- Semisynthetic penicillins

Eosinophilia associated with interstitial nephritis

- Cephalosporins
- Semisynthetic penicillins

Drug reaction with eosinophilia and systemic symptoms (DRESS)

- Hydantoin
- Carbamazepine
- Allopurinol
- Cyclosporine

Others

Other conditions that may be found in eosinophilia include:

- Peritoneal dialysis
- Liver cirrhosis
- Radiation
- Certain cancers such as lung or pancreatic cancer
- Hodgkin's lymphoma
- Non-Hodgkin's lymphoma

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References

- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2902584/
- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2099264/
- http://www.merckmanuals.com/professional/hematology-and-oncology/eosinophilic-disorders/eosinophilia#v973293

Further Reading

- What is Eosinophilia?
- Eosinophilia Tests and Diagnosis
- Eosinophilia Treatment

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