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Immunodeficiency: An Overview

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Introduction

Immunodeficiency, often referred to as immunocompromisation, is a disorder in which the immune system's ability to fight infections and cancer is diminished or absent. The majority of cases are acquired due to extrinsic causes that affect the patient's immune system ("secondary"). Extrinsic variables include HIV infection and environmental factors such as nutrition. Immunocompromisation can also be caused by genetic disorders or flaws, such as SCID.

Description

Disorders of the immune system

Immunodeficiency diseases make it difficult for your body to fight infections and diseases. This condition makes it easier for you to become infected with viruses and bacteria.

Immunodeficiency disorders can be acquired or congenital. A congenital disorder, often known as a main disorder, is one that you were born with. An acquired disorder, also known as a secondary disorder, is one that develops later in life. Congenital disorders are less common than acquired disorders. The organs that make up your immune system are as follows:

- The spleen
- The tonsils
- The bone marrow
- The lymph nodes

Lymphocytes are processed and released by these organs. B cells and T cells are two types of white blood cells. Antigens are invaders that B and T lymphocytes combat. B cells produce antibodies that are unique to the sickness detected by your body. Foreign or abnormal cells are destroyed by some T lymphocytes. Antigens that your B and T cells may encounter include: bacteria, viruses, cancer cells, and parasites, to name a few.

Immunodeficiency is caused by the failure or absence of immune system components such as lymphocytes, phagocytes, and the complement system. Primary and secondary immunodeficiencies exist. T-cell deficiency, B-cell deficiency, combined T-cell and B-cell deficiency, complement deficiency, phagocyte deficiency, and immunoglobulin A deficiency are all kinds of primary immunodeficiency. DiGeorge syndrome, also known as congenital thymic aplasia, chronic mucocutaneous candidiasis, hyper-immunoglobulin M syndrome, and interleukin-12 receptor deficiency are all primary immunodeficiencies that lead to T-cell insufficiency. X-linked agammaglobulinemia, also known as Bruton agammaglobulinemia, is a primary immunodeficiency that leads to B-cell insufficiency. Severe mixed immunodeficiency illness, Wiskott-Aldrich syndrome, immunodeficiency with ataxia-telangiectasia, and Major Histocompatibility Complex deficiency are all primary immunodeficiencies that cause both T-cell and B-cell insufficiency. Hereditary angioedema, C3 deficiency, membrane attack complex deficiency, and C2 or C4 deficit secondary to autoimmunity are all primary immunodeficiency that lead to complement deficiency [1-5].

Conclusion

Chronic granulomatous disease and leukocyte adhesion deficiency syndrome are two primary immunodeficiency that contribute to phagocyte insufficiency. Immunoglobulin that is selective. A primary immunodeficiency is also a deficit. Steroids, dietary deprivation, obesity, Acquired Immune Deficiency Syndrome (AIDS), and other viral infections are all secondary causes of immunodeficiency. This activity examines the various immunological illnesses, their diagnosis, and treatment, as well as the role of the interprofessional team in caring for those who are affected. Immunodeficiency has a variety of causes, depending on the illness. The reason could be inherited or acquired as a result of starvation and unsanitary living conditions. The particular genes are only known for a few genetic reasons.

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