

Different Types of Immunology

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EDITORIAL:

REPRODUCTIVE IMMUNOLOGY:

Reproductive immunology refers to a field of medicine that studies interactions (or the absence of them) between the immune system and components related to the reproductive system, such as maternal immune tolerance towards the fetus, or immunological interactions across the blood-testis barrier. The concept has been used by fertility clinics to explain the fertility problems, recurrent miscarriages and pregnancy complications observed when this state of immunological tolerance is not successfully achieved. Immunological therapy is the new up and coming method for treating many cases of previously "unexplained infertility" or recurrent miscarriage.

PULMONARY IMMUNOLOGY:

Knowledge of pulmonary immunology is essential to the understanding of certain respiratory diseases. The airways and alveolar zones may be seen separately and in contrast on the basis of the immune system of the lung. Broadly speaking, within the airways there are mast cells, polynuclear eosinophil and lymphocytes. By contrast in the alveolar zones there are macrophages and lymphocytes which are either free in the alveolar lumen or present in the pulmonary interstitial tissue, as well as lymphocytes. In most instances inhaled antigens are not at the origin of an immune response, whether deposited on the mucociliary surface or phagocytosed by the alveolar macrophage. The BALT play a probably primordial role in immune information within the tracheobronchial epithelium.

CLINICAL IMMUNOLOGY:

Clinical immunology is the study of diseases caused by

disorders of the immune system (failure, aberrant action, and malignant growth of the cellular elements of the system). It also involves diseases of other systems, where

immune reactions play a part in the pathology and clinical features.

The diseases caused by disorders of the immune system fall into two broad categories:

immunodeficiency, in which parts of the immune system fail to provide an adequate response (examples include chronic granulomatous disease and primary immune diseases);

autoimmunity, in which the immune system attacks its own host's body (examples include systemic lupus erythematosus, rheumatoid arthritis, Hashimoto's disease and myasthenia gravis).

DIAGNOSTIC IMMUNOLOGY:

The specificity of the bond between antibody and antigen has made the antibody an excellent tool for the detection of substances by a variety of diagnostic techniques. Antibodies specific for a desired antigen can be conjugated with an isotopic (radio) or fluorescent label or with a color-forming enzyme in order to detect it. However, the similarity between some antigens can lead to false positives and other errors in such tests by antibodies cross-reacting with antigens that aren't exact matches.

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