



Medical Study of Immune System in the Living Organism

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INTRODUCTION

The medical study of immune systems in humans, animals, plants, and other sapient species is known as immunology, and it is a branch of biology and medicine. As a result, we can see that veterinary medicine and animal biosciences human immunology and comparative immunology differ. Medicine and epidemiology are intertwined in classical immunology. It investigates the connection between the immune system, pathogens, and the body's systems. The plague that struck Athens in 430 BC is where the earliest written mention of immunity can be found. According to Thucydides, individuals who had recovered from a previous bout of the disease were able to care for the sick without contracting the disease again.

DESCRIPTION

This phenomenon is mentioned in many other ancient societies, but the idea did not become a scientific theory until the 19th and 20th centuries. The fundamental discipline of immunology is the investigation of the functions and interactions of the immune system's cellular and molecular components. There is an innate immune system, which is more primitive, and an acquired immune system, or adaptive immune system, in vertebrates. Cell-mediated and humoral components are further subdivided into the latter [1]. It is now becoming increasingly apparent that the immune system plays a role in the onset of a variety of common conditions that were previously thought to be immune-mediated, such as metabolic, cardiovascular, cancer, and neurodegenerative diseases like Alzheimer's. In addition, infectious diseases like Tuberculosis, Malaria, Hepatitis, Pneumonia, Dysentery, and Helminth infestations have direct effects on the immune system. Because of this, advances in biomedical research, biotechnology, and modern medicine all depend heavily on research in immunology [2]. Self and non-self-recognition are capabilities of the immune system. A

substance that initiates the immune response is known as an antigen. Lymphocytes are the cells that play a role in recognizing the antigen. Antibodies are made when they recognize [3]. Antibodies are proteins that kill the microorganisms that cause disease. Antibodies do not kill pathogens directly; rather, they identify antigens as targets for other immune cells, like phagocytes or NK cells, to destroy [4].

CONCLUSION

There are two types of immune cells in the body: Those that are innate to the body and those that are responsive to a potential pathogen or foreign substance. According to evolutionary theory, the first line of defense is the innate immunity system. It lacks specificity and has a static resistance (it does not get better over time and there is no memory for subsequent exposures). This includes physical defences like cilia, commensal flora, acidic gastric contents, fever, and skin and epithelial surfaces. There are also biochemical defences like interferon's, fibronectin, soluble lysosyme, and the acute phase reactants and complement. Natural killer cells and RES phagocytes are examples of cellular components. The interaction between antibodies and antigens is what is known as the (antibody) response. Antigens are anything that triggers the production of antibodies (antibody generators), whereas antibodies are specific proteins released from a specific class of immune cells known as B lymphocytes. Understanding the cellular response to these two biological entities is fundamental to immunology.

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CONFLICT OF INTEREST

The author's declared that they have no conflict of interest.

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