IMMUNE SYSTEM: FUNDAMENTALS OF INNATE IMMUNITY WITH EMPHASIS ON THE MOLECULAR AND CELLULAR MECHANISMS OF THE INFLAMMATORY RESPONSE

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The aim of this study was to review the fundamentals of innate immunity with emphasis on the molecular and cellular mechanisms of the inflammatory response. A bibliographic review of the narrative type was performed from the databases SciELO, PubMed and Google Scholar, using the keywords: innate immunity, molecular mechanism, and inflammatory response. It was observed that the immune system consists of an intricate network of organs, cells, and molecules, and aims to maintain the homeostasis of the organism, combating aggressions in general. Innate immunity acts in conjunction with adaptive immunity and is characterized by rapid response to aggression, regardless of previous stimulus, being the body's first line of defense. Its mechanisms comprise physical, chemical, and biological barriers, cellular components and soluble molecules. The first defense of the organism against tissue damage involves several steps that are closely integrated and constituted by the different components of this system. This review aims to rescue the foundations of this response, which presents high complexity and consists of several articulated components that converge to the elaboration of the adaptive immune response. Some stages are highlighted: molecular recognition of aggressor agents; activation of intracellular biochemical pathways that result in vascular and tissue modifications; production of a myriad of mediators with local and systemic effects in the field of cell activation and proliferation, synthesis of new products involved in chemoattraction and migration of cells specialized in the destruction and removal of the offending agent, and finally tissue recovery with the functional restoration of tissue or organ.

Keywords: innate immunity; inflammation; autoimmunity; PAMPs; Toll-like receivers.

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