

THE ROLE OF INNATE IMMUNITY IN THE CONTEXT OF COVID 19

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The aim of this study was to review the mode of action of the innate immune response in the context of Coronavirus Disease 2019 (COVID-19) and tissue degeneration caused by this infection. A bibliographic review of the narrative type was carried out with searches of articles published in the last five years, using the keywords: innate immune response, COVID-19 and pathogenesis. From this review it was found that the COVID-19 pandemic has resulted in a variety of consequences for many people, be they motor, sensory or psychological. The innate immune response is the first line of defense against SARS-CoV-2. When the virus enters the body, the cells of the innate immune system, such as macrophages and dendritic cells, play a crucial role in the initial detection of the virus, it involves non-specific defense mechanisms that act quickly to contain the infection. Thus, in response to infection, the cells of the innate immune system release pro-inflammatory cytokines such as interferons and interleukins. These cytokines play an important role in activating the body's defenses and mobilizing additional defense cells. The innate immune response recruit cells such as neutrophils and Natural Killer (NK) cells to fight the virus inside the infected cell. Neutrophils are phagocytes that can swallow and destroy the virus, while NK cells can exterminate them. Consequently, the complement system, part of the innate immune response can also be activated to fight the virus. It consists of proteins that can bind to the virus and mark it for destruction or neutralize it directly. Thus, it is in this immune response that viral components, such as viral RNA, are recognized through specific receptors, such as Toll-like receptors (TLR). The innate immune response also plays a crucial role in guiding the adaptive immune response. It alerts the adaptive immune system to the presence of the virus and helps direct the production of T and B cells specific for SARS-CoV-2. However, an issue that arose during this pandemic was the presence of a tissue differentiation, which occurs in some people during infection by the disease and in certain circumstances, namely, lung inflammation, which results in damage to the alveoli and fibrous lung tissue, the formation of clots, a SARS-CoV-2 infection can also lead to differentiation of cells in the vascular system, contributing to the formation of blood clots, the injury of multiple organs in addition to the lungs, COVID-19 infection can cause differentiation of cells in various organs, resulting in lesions in organs such as the heart, liver and kidneys, and fibrosis, in some cases, after acute infection, cell differentiation occurs that leads to the formation of scar tissue (fibrosis) in the lungs. This can result in long-term lung function problems in some people. In short, the innate immune response is the body's first line of defense against COVID-19, playing a crucial role in detecting, mobilizing, and fighting the virus. It triggers a cascade of events that help limit the initial infection.

Keywords: Innate immune response; SARS-CoV-2; pathogenesis.

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