

RELATIONSHIP OF IMMUNE SYSTEM HISTOLOGY WITH COVID-19 AND SYSTEMIC LUPUS ERYTHEMATOSUS

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The aim of this study was to review the Immune System and its relationship with Lupus and COVID-19. A bibliographic review of the narrative type was carried out with searches of articles published in the last five years, using the keywords: Lymphoid organs, Immune system and Innate immunity. The immune system, also known as the lymphoid system, is an essential part of our body that protects us against viruses, bacteria, and other threats. It is especially important in viral infections, such as COVID-19, caused by the coronavirus. Sometimes, though, the immune system can get confused and attack our own cells, leading to conditions called autoimmune diseases. One such disease is Systemic Lupus Erythematosus (SLE), which can make people more vulnerable to severe forms of COVID-19. The immune system is divided into two parts: the innate immune system and the adaptive immune system. Innate is the first line of defense, while adaptive is more specific and involves cells such as T and B lymphocytes, which play an important role in protecting the body from infections. These cells can be found in lymphoid organs, such as the lymph nodes and spleen. SLE patients have an immune system that attacks their own cells and tissues, causing inflammation and organ damage. This can make them more susceptible to secondary infections, new autoimmune diseases, and chronic inflammation. In COVID-19, the immune system is activated to fight the virus, and this can lead to an exacerbated inflammatory response in some cases. The increase in cytokines, which are proteins involved in the immune response, can cause additional damage to the body. There appears to be a link between SLE and severe forms of COVID-19. This could be due to a number of reasons, including problems controlling DNA methylation, overexpression of the ACE-2 protein (which the coronavirus uses to enter cells), and increased viremia (presence of viruses in the bloodstream), all caused by oxidative stress related to viral infection. Demethylation of genes in people with lupus can also intensify the immune response to infection, leading to even higher levels of cytokines. In addition, there are reports of people without autoimmune diseases who developed lupus after coronavirus infection, although the details of this mechanism are not yet fully understood. It is concluded that from this review it was verified that the immune system plays a key role in protecting the body against infections, including COVID-19. However, in SLE patients, who have autoimmune diseases, the immune response may be exacerbated, making them more susceptible to serious complications from

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COVID-19. It's important to continue researching this relationship to better understand how the immune system works in different situations and how we can better protect those who are most at risk.

Keywords: immune system; autoimmunity; COVID-19; Systemic Lupus Erythematosus (SLE).