IMMUNOLOGICAL AND SOCIAL ASPECTS OF HUMAN IMMUNODEFICIENCY VIRUS (HIV)

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The aim of this study was to review how the human immunodeficiency virus (HIV) affects the human immune system and mental health. A bibliographic review of the narrative type was carried out with a search for scientific articles published in the last five years in the databases: PubMed, SciELO and Google Scholar, using the keywords: HIV, immune response, and mental health. From this literature review it was verified that HIV can infect cells with CD4 receptors such as lymphocytes, macrophages, and dendritic cells. CD4+ T lymphocytes (CD4 cells) are especially affected, the glycoprotein gp120 binds to the CD4 molecule, which exposes the V3 loop, which binds with the CCR-5 co-receptor. There is also binding with the CXCR-4 co-receptor. After HIV binds to the cell, interaction occurs with the glycoprotein gp41, promoting fusion between virus and cell, allowing the virus to enter. Then, the viral capsid undergoes denudation, delivering the viral RNA to the cytoplasm, which makes viral replication from the reverse transcriptase. Thus, the single-stranded RNA is converted into double-stranded DNA, and the integrase enzyme binds to move and aggregate the viral DNA to the cell's DNA. This mechanism ensures that HIV messenger RNA is produced to control the cell to produce proteins and viral genome, which will be assembled in the cytoplasm and and will complete the formation of new viral particles by budding. Once out of the infected cell, HIV will be able to infect a new cell after Gag and Gag-Pol cleavage, large precursor molecules cleaved by proteases. In this process, the infected CD4+ T lymphocytes end up being destroyed, leaving the cellular immune response compromised. The decrease in these lymphocytes prevents the body from recruiting and activating phagocytes, such as macrophages, neutrophils and other cells associated with the defense of intracellular and extracellular pathogens. This favors the development of opportunistic diseases, such as tuberculosis, pneumonia, and cancer, especially when there is a high viral load and a marked decrease in the CD4+ T lymphocyte count. It is also important to emphasize that its impact is not limited to pathological manifestations, but also on mental health, affecting the self-esteem and social relationships of people with HIV. Because, in clinical evolution, there is often an aesthetic

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weakness, which brings social stigmas of prejudice and social segregation, making it important to effectively apply public policies aimed at the topic. Therefore, it was concluded that immunodeficiency caused by HIV is associated with the type of cell that is infected, since CD4+ T lymphocytes promote adaptive immunity of the cell type, responsible for interconnecting the other immune response mechanisms of the human body, and that actions involving those with this virus, the government and the community are extremely important to minimize the psychosocial disorders that compromise the mental health of this group, favoring a better quality of life for those affected.

Keywords: CD4 cells; HIV infection; immune response; health.