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HIV infection & AIDS disease to the helper T cells level

Saba Tavakoli¹, Mohadeseh Ahmadzadeh², Masoud Sasaninezhad¹, Mahsa Golahdooz¹ and Tahereh Tohidloo¹ ¹Tehran University of Medical Sciences, Iran ²Shahid Beheshti University of Medical Sciences, Iran

Tuman Immunodeficiency Virus (HIV) is a member of retrovirus family that causes Acquired Immunodeficiency Syndrome H(AIDS). HIV infection in humans is considered pandemic by the World Health Organization and killed about 30 million people up to now. The stages of HIV infection are acute infection (primary infection), latency and AIDS. Acute infection lasts for several weeks and may include some non specific symptoms. The latency stage involves few or no symptoms and its period ranges from weeks to years. AIDS, the final stage of HIV infection, is defined by low CD4+ T cell (helper T cells) counts, various opportunistic infections, cancers and other disturbances. This review is going to investigate HIV infection and AIDS disease impacts on helper T cells level in individuals who contaminated by HIV virus, from contamination time to trigger of AIDS disease. HIV infects some immune system cells in the human such as helper T cells, Macrophages and Dendritic cells. HIV infection leads to low levels of CD4⁺T cells through killing infected CD4⁺ T cells directly, the rates of apoptosis (cell programmed death) is increasing in infected cells and killing of infected CD4⁺ T cells by CD8⁺ cytotoxic lymphocytes that assault to the infected cells. HIV virus removes 1×109 CD4⁺ T cell each day. When CD4⁺ T cell counts decline below a critical level (200 per microliter) cell-mediated immunity is lost and the body becomes progressively more susceptible to opportunistic infections. Most infected individual eventually develop AIDS and mostly die from opportunistic infections or malignancies associated with the progressive failure of the immune system. There is an obvious relationship between HIV copies (viral load) and CD4⁺ counts. Common opportunistic infections and tumors are normally controlled by robust CD4⁺ T cell-mediated immunity, so CD4⁺ T cell level maintenance up to critical level is crucial for infected individuals. Antiretroviral therapy is suggest to postpone manifestation of AIDS disease by stabilize of the CD4⁺ T cell.

Biography

Saba Tavakoli is currently pursuing Bachelor of Science in Clinical Laboratory Sciences (Medical Technology) at Tehran University of Medical Sciences, Iran.

sabat4738@gmail.com

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