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Vladimir Zajac

Slovak Academy of Sciences, Slovakia

Microbes in AIDS

The results of recent studies indicate that the primary site of HIV infection and loss of $CD4^+$ T cells is a gastrointestinal tract and other mucosal tissues, not blood. The HIV-1 was also detected in bowel crypt cells and the lamina propria. It was found that the multiple forms of HIV reservoirs, including GALT, exist in virtually all patients receiving HAART. These findings led us to the idea that microbes may play an important role in acquired immunodeficiency syndrome process. DNA testing of bacteria and yeasts: a) from intestinal tract of American and Slovak HIV-positive patients; b) from respiratory tract Cambodian and Kenyan HIV-positive children was detected sequence 90% homologous with the corresponding sequences of HIV-1. Bacterial extracts of all cohorts of patients were identified HIV-like proteins using monoclonal antibodies against HIV-1 antigens p17, p24, gp41 and gp120. Specific properties of these microbes were confirmed by gentamicin protection test and infection of HL60 cells. The role of bacteria in AIDS was also confirmed by reducing the viral load in HIV-positive patients after administration of probiotics *E. coli* Nissle 1917. Based on these results, it is possible to hypothetically assume that the intestinal bacteria are the natural hosts of HIV sequences. Application of antibiotics, medications and lifestyle modifications disturbs symbiosis between eukaryotic and prokaryotic kingdoms in the human body. These factors caused that pathogenic, mostly multiresistant microbes, that used to be in the minority shifted into the majority. Microbes bearing HIV-like genetic information penetrate from the intestinal tract into the blood. Because of their affinity to lymphocytes, infected or lysed them and a process of immunodeficiency started.

Biography

Vladimir Zajac has completed his Ph.D. in 1982 at the Cancer Research Institute of Slovak Academy of Sciences in Bratislava (Slovakia), where he was from 1996 to 2010, the head of Department of Cancer Genetics. He joined the Medical Faculty of the Comenius University as associate Professor of Genetics in 2007. He has published 61 papers mostly in reputed journals and he was editor of the book "Bacteria, viruses and parasites in AIDS process" (InTech).

exonvzaj@savba.sk