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Intestinal and respiratory tract bacteria and yeasts in pathogenesis of aids

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Recently accumulate the records, which show that the main site of HIV infection and CD4+ T cell loss is in the GIT and the other mucosal tissue rather than in blood. The HIV-1 was also detected in bowel crypt cells and the lamina propria. It has also been proven that various forms of HIV reservoirs persist in practically all patients receiving HAART. Persistence of HIV was also detected in GALT despite HAART. These facts indicate that in the pathogenesis of AIDS may come into play additional factors. Due to the fact that on mucosa of the colon is a large variety of bacteria and yeast, it is necessary to follow their role in process of pathogenesis.

In accordance to this idea, we tested the bacteria and yeast in Slovak and American AIDS patients and HIV-positive children in Kenya and Cambodia for the presence of HIV-like sequences. Using specific primers have been in DNA of these bacteria and yeast identified sequences with high homology to HIV-1. Expression of these sequences has been demonstrated with monoclonal antibodies against p17, p24, p55, gp41 and gp120.

Based on these results the presence of HIV-like sequences in bacteria of the patients may be hypothetically explained as follows: 1) bacteria and yeasts are a natural host of HIV sequences; 2) these sequences were transferred into intestinal bacteria from degraded human cells. Hypothetically HIV sequences can be in bacteria and yeast intestinal and respiratory tract present since the beginning of mankind. Thanks to countless epidemics that accompany humanity since its inception, microbes carry these sequences have been largely removed. Administration of antibiotics, drugs and homo and anal sex has recently propagated again. In this way, pathogenic microbes, especially drug resistant, which used to be in the minority moved 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 PhD. 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 2008. He has published 59 papers mostly in reputed journals and he was editor of the book "Bacteria, viruses and parasites in AIDS process" (InTech, 2011).

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