

5th World Congress on **Virology**

December 07-09, 2015 Atlanta, USA



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Emerging Human Pathogens: Human Herpes Virus-6 (HHV-6) & Human Herpesvirus-7 (HHV-7)

HHV-6 and HHV-7 were discovered in 1986, and 1990 respectively. They are acquired in early childhood, and after primary infection become latent. Their prevalence in the various populations throughout the world is VARIABLE (>44->95%). Once they reactivate, they play an important role in pathogenesis of various diseases. HHV-6 is associated with neurological and non-neurological diseases. HHV-6 is re-classified as HHV-6A, and HHV-6B. HHV-6A is associated with multiple sclerosis, mood disorders (Bi-polar disease), myocarditis, and cardiac myopathy, and gliomas. Similarly, HHV-6B infection has been found in heart disease (myocarditis, arteriosclerosis, heart failure), idiopathic pneumonia, MTLE, status epilepticus, lymphadenopathy, Hodgkin's disease (nodular sclerosis). HHV-7 pathogenesis is not well documented. Like HHV-6B, it is the causative agent of exanthem subitum, febrile convulsions, and found in 7% cases of status epilepticus, meningomyelitis, and hemorrhagic brainstem encephalitis. The reactivation of these viruses does lead to preferentially bone marrow transplant rejection. They are also found in a variety of autoimmune disorders (scleroderma). The most fascinating era of HHV-6A, HHV-6B, and HHV-7 research show that amongst the 9 HHVs, they are the only viruses that integrate at the telomeres of the human chromosome during latency (c1hhv-6). Based on various studies, it is estimated that between 40 and 80 million people worldwide carry inherited HHV-6, acquired through germline. Such individuals are at risk to various infections e.g., angina pectoris, x-linked severe combined immune deficiency, CNS dysfunction. Their replication is treatable with antivirals. We will review the current basic and clinical findings.

Biography

Dharam Ablashi is a Microbiologist. He has published over 300 articles on Herpes viruses and HIV. His major interests are assessing pathogenic roles of viruses in diseases, and in developing antivirals as therapeutic reagents. He has a BSc and a DMV from Panjab University, India, and Dip. Bact from Indian Veterinary Research Institute and MS in Virology from the University of Rhode Island, USA. He worked 23 years at NIH. In 1986, he co-discovered human herpesvirus-6 (HHV-6), a highly neurotropic and immune suppressive virus. He was as an Adjunct Professor at Georgetown University School of Medicine, Washington, DC, and Director of Herpes Virus Research in a diagnostic company. Currently, he is the Scientific Director of the HHV-6 Foundation, and the Senior Technology Adviser at KHG fiteBac Technology in Marietta, Georgia.

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