

Effects of HHV-6A Infection in the Common Marmoset

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HHV-6, a ubiquitous β -herpesvirus, is frequently associated with neurologic diseases including MS, mesial temporal lobe epilepsy (MTLE), encephalitis, and febrile illness. The two variants of HHV-6 include HHV-6B, the etiological agent of exanthema subitum (roseola) and HHV-6A. The pathogenesis and epidemiology of HHV-6A remain unclear, although it has been reported that this variant is more neurotropic than HHV-6B. Given the association with neurologic disease, the effects of a primary infection with HHV-6A are of interest. To examine this, we exposed *C. jacchus* marmosets to HHV-6A

intravenously once a month for 4 months and monitored the resulting infection. In 3 of the 4 HHV-6A infected marmosets, we detected IgM responses one week post-inoculation. IgG responses were seen in 2 of the 4 infected animals one week post-inoculation, and by week 15 all the infected animals had IgG responses to HHV-6. In HHV-6A infected animals, the virus has not been consistently detected in the saliva, plasma, or PBMCs using nested PCR, suggesting that HHV-6A does not reside in the periphery at high frequencies. Infected animals began showing signs of neurologic disease after the second exposure to the virus. To date the disease has been monophasic in nature and mainly characterized by impairment of the sensory system. One marmoset developed a skin condition with blister like erythematous lesions, another marmoset developed a facial palsy, and another developed signs consistent with sensory ataxia. Currently, pathological studies are ongoing to determine the localization of the virus in tissue. Overall we find that primary HHV-6A infection is associated with rapid seroconversion and neurological symptoms in the marmoset. This infection will provide a model system to study the immune response during primary herpesvirus infection and the resulting neurological disease.