Retrovirology

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Oral presentation

Morphine Addiction Causes Pronounced Virus Replication in Cerebral Compartment and Accelerated Onset of AIDS in SIV/SHIV-infected Indian Rhesus Macaques

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Six morphine-dependent and 3 control male Indian rhesus macaques were intravenously inoculated with mixture of $SHIV_{KU}$, $SHIV_{89.6}$P and SIV/17E-Fr. These animals were followed for a period of 56 weeks for virus replication, disease progression and immune responses. Both morphine-dependent and control macaques showed precipitous loss of CD4+ T cells but CD4 recovery was found to better in more control animals than that in the morphine-dependent animals. The plasma and CSF viral load was significantly higher in morphine-dependent group than those in the control group. Four morphine-dependent succumbed to SIV/SHIV-induced AIDS at week 18, 19, 20 and 51, post-infection with neurological disorders in 3 of those 4 animals. Other 2 morphine-dependent and 3 controls were still alive at the end of 56 week observation period. All 3 viruses replicated in the blood of both morphine-dependent and control macaques, but cerebral compartment showed a selection phenomenon and only SIV/17E-Fr and SHIVKU crossed the blood brain barrier (BBB). The morphine-dependent macaques further favored the viral migration through blood brain barrier (BBB). Three morphine-dependent macaques (euthanized at weeks 18, 19 and 20) did not develop cellular or humoral immune responses whereas other 3 morphine-dependent and 3 control macaques developed both cellular and humoral immune responses.