Retrovirology

Oral presentation

Genetic Analysis of HIV in AIDS Malignancies

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Many HIV associated diseases such as KS have resolved or dramatically decreased since the institution of HAART. Two diseases, HIV associated dementia (HAD) and AIDS related lymphoma (ARL) continue to occur and represent two diseases where HIV infected macrophages have been implicated in disease pathogenesis. In order to test whether persistent macrophage reservoirs of HIV might in part be responsible for subsets of these diseases, a survey of tissues obtained from the AIDS and Cancer Specimen Resource (ACSR) was performed. HIV copy and HIV genetic diversity studies were carried out on DNA extracted from HAD brain, ARL and KS specimens. In this pilot study, all HAD involved sections of brain, 10/14 ARL's and 1/11 KS tissues contained > 1 copy of HIV/2000 genomic equivalents. Phylodynamic analysis of the HIV in the HAD and ARL cases demonstrated the presence of dominant/monophyletic forms of compartmentalized HIV is diseased tissues. By comparison only diverse forms of HIV were observed within uninvolved tissues from the same (HAD or ARL) patient, or within KS tissues. Further genetic analysis of HIV from one patient with both HAD and primary CNS ARL, revealed distinctly different LTR's associated with the ARL as compared to the HAD. The ARL LTR was missing an NFk-B site whereas the HAD LTR carried both sites consistent with B-clade forms of HIV. These data suggest that a persistent macrophage based reservoir of HIV may contribute to ARL.