



Role of perivascular macrophages trafficking in HIV associated dementia complex

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HIV associated neurological diseases include HIV dementia, peripheral neuropathies and progressive multifocal leukoencephalopathy (PML). In the studies presented here, we examined the abnormal accumulation of monocytes/macrophages in the CNS in patients with HIV dementia complex (HIVD), AIDS without dementia, and seronegative controls. Our results demonstrate substantial increases in both perivascular macrophages and ramified parenchymal microglia in HIVD. Although these mononuclear phagocytes were positive for proliferating cell nuclear antigen (PCNA), they do not appear to be proliferating as determined by the paucity of Ki-67 staining. Using antibody to HIV-P24 antigen, PCNA expression co-localized in cells productively infected with HIV-1. Additional cells were negative for HIV-1 P24, but positive for PCNA expression, possibly suggesting the role of secreted factors. These results suggest dysregulation of DNA repair pathways in HIVD, with potential relevance to the JCV activation and the development of PML in the setting of AIDS.