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HIV-related ocular microangiopathic syndrome and neuropsychological functioning

Wilkie et al. [1] recently reported that cognitive alterations occur in HIV-1-infected individuals before the manifestation of AIDS, and appear to be independent of the clinical status and degree of immunosuppression as measured by CD4 cell count and immunoglobulin A (IgA) level. The association between HIV-1 serostatus and cognitive impairment has not been completely explained by known potentially confounding factors, such as age, education and psychopathological status [1].

The fact that not all HIV-infected patients develop cognitive impairment or progress to a dementia syndrome suggests that factors other than HIV-1 are responsible for this condition. Dunbar et al. [2] showed that neuropsychological changes are not exclusively associated with progression from AIDS-related complex (ARC) to AIDS. The aetiology of cognitive symptoms may be multifactorial; pathological findings in computed cranial tomography or magnetic resonance imaging do not necessarily relate to neurocognitive decline [3], psychogenic versus somatogenic reasons are to differentiate.

In our study of 237 seropositive subjects we found that HIV-1-seropositives showed reduced cognitive functioning compared with HIV-negative controls, and detected significant correlations between psychopathological impairment and neuropsychological functioning [4]. To look for other influences on or possible explanations for a decrease in the memory functions of HIV-1-infected patients, a subgroup of 37 seropositive subjects underwent ophthalmological and neuropsychological examination. We examined these patients to evaluate a possible association between HIV-1-related ocular microangiopathic syndrome and cognitive functioning [5]. Ocular microangiopathic syndrome is common in patients with AIDS or at an

Fig. 1. Cytopathological features of adrenal carcinoma. (a) Malignant cells arranged in follicular or trabecular appearance along fibrous and vascular structures (May–Grunwald–Giemsa stain, × 100). (b) Multinucleated cells with giant nuclei, prominent nucleoli and abundant, vacuolated, clear and badly delimited cytoplasm (May–Grunwald–Giemsa stain, × 400).
advanced stage of HIV infection [6]. Symptoms of this microvascular syndrome can include retinal cotton-wool spots, haemorrhages and Roth's spots [7].

There was a strong correlation between HIV-related ocular microangiopathic syndrome, measured by counting the number of cotton-wool spots, and a decrease in cognitive functioning, determined by neuropsychological examination including five standardized tests (Auditory Verbal Learning Test, Benton Test, Vocabulary, Stroop Colour Word Test, Trail-Making Test part B), in AIDS patients. The multiple correlation between the number of cotton-wool spots and the five neuropsychological tests by counting the number of cotton-wool spots, and standardized tests (Auditory Verbal Learning Test, Benton Test, Vocabulary, Stroop Colour Word Test, Trail-Making Test part B), in AIDS patients. The multiple correlation between the number of cotton-wool spots and the five neuropsychological tests by counting the number of cotton-wool spots, and standardized tests (Auditory Verbal Learning Test, Benton Test, Vocabulary, Stroop Colour Word Test, Trail-Making Test part B), in AIDS patients.

These correlations between ocular microangiopathic syndrome, HMPAO-SPECT and cognitive performance do not prove a causal relationship, but indicate that there may be a close association between cerebral blood flow and functional cerebral impairment. HIV-related microangiopathic syndrome may thus be involved in the aetiology of cognitive alterations in HIV-infected individuals.

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Decay of HIV-1 infectivity in whole blood, plasma and peripheral blood mononuclear cells

Accurate quantitation of the level of HIV-1 in vivo is important in understanding AIDS pathogenesis and viral transmission, as well as in monitoring the efficacy of antiviral agents given to patients. We have previously defined the infectious levels of HIV-1 in plasma and peripheral blood mononuclear cells (PBMC) from infected subjects [1]. We have also determined the infectious titers in sequential blood samples from patients with primary HIV-1 infection [2]. These studies were performed in real time (i.e., immediately after any transport and processing delays) with freshly obtained blood samples, and it is unclear whether the time de-