Transformed occupational prospects for HIV-associated brain syndromes

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Abstract
We report a case of a full-time worker with late undiagnosed HIV disease presenting as encephalopathy with motor features and a manic-like picture. HIV encephalopathy was a terminal condition before the advent of combination highly active anti-retroviral therapy (HAART). Treatment with HAART, with follow-up in a neuropsychiatric service and rehabilitation involving the occupational health department of his employer, produced a successful return to work. This case demonstrates a remarkable transformation in occupational and other outcomes of HIV-related brain disease in the era of HAART.

Key words
Anti-retroviral medication; HIV brain disease; occupational mental health.

Introduction
At least until the late 1990s, life expectancy following presentation with one of the HIV-related brain syndromes was only weeks. We report on a case of progressive multifocal leukoencephalopathy (PML) that demonstrates how for many patients the prognosis has changed dramatically since the advent of combination highly active anti-retroviral therapy (HAART) [1].

PML is one of the AIDS-defining illnesses [2]. It is a demyelinating disease caused solely by the John Cunningham (JC) virus, a polyomavirus which is present but usually silent in ~65% of the general population [3]. It is found in high concentrations in urban sewage worldwide. This opportunistic infection causes lytic damage of oligodendrocytes in immunocompromised hosts (those with CD4 counts <200/µl), most commonly in advanced HIV disease but also in patients on chronic immunosuppressive medication, such as chemotherapy for leukaemia and Hodgkin’s lymphoma, treatment for multiple sclerosis and after transplantation [4]. PML symptoms include clumsiness, progressive weakness, speech or visual deficits, seizures and neuropsychiatric and cognitive abnormalities [5].

PML has a distinct radiological appearance, with lesions at the grey matter–white matter interface often having a scalloped margin. This allows presumptive diagnosis in advance of biopsy [6,7]. The use of neuroradiology findings alone for diagnosis has become accepted practice, even when cerebrospinal fluid (CSF) is found to be negative for JC virus [8].

At present, there is no treatment specific for PML. Reversal of immunosuppression by means of HAART has been shown to stabilize PML brain damage seen on magnetic resonance imaging scans in 50–60% of patients, as well as clearing JC virus from the CSF [9]. A 1-year survival rate of 10% in the pre-HAART years has increased to 50% when HAART is established early [10].

Case report
The patient, a 41-year-old man from Cameroon, had lived in the UK for 18 years. He was working as a hospital assistant when he presented to his general practitioner in summer 2010 with a 2-month history of leg weakness, unsteady gait, weight loss and memory problems. Following referral to a neurologist PML was suspected. He tested positive for HIV, with a viral load of 1116 100 copies per millilitre and CD4 count of 39/µl, indicative of advanced disease with profound immunosuppression. His wife also reported recent manic activity, with unusual irritability, disinhibited behaviour, over-spending and grandiose ideas. He required several weeks’ hospital stay and treatment with the anti-retrovirals tenofovir, emtricitabine, darunavir and ritonavir, as well as...
anti-psychotic medication under psychiatric supervision. He also required quadruple-agent therapy for possible tuberculosis.

Before hospital discharge, an HIV mental health team co-ordinated follow-up and rehabilitation in the community. He had much to contend with: his resolving stroke-like weakness, resolution of secondary psychiatric features and financial difficulties arising out of his sickness absence from work. He was responsive to rehabilitative efforts including monitoring of his cognitive function and liaison with the HIV clinic supervising his HAART treatment. Anti-psychotic medication was reduced and then stopped.

A key part of his rehabilitation centred on his return to work. The HIV mental health team worked actively with the occupational health department of the hospital which employed him to assess his suitability for a phased return to work. He returned to work, initially on reduced hours in April 2011, 9 months after initial presentation. He described fatigue and some lack of confidence at the outset but this improved and he later reported no concerns regarding his memory or capacity to perform at work as he had before diagnosis. He later returned to full working hours.

He remains compliant with HAART but was discharged by the HIV mental health team in February 2012. When last interviewed in early 2015, he confirmed that he had remained well and was unrestricted at work.

Discussion

This is a case where a diagnosis of HIV infection was only made when the patient presented with life-threatening brain disease, though he was likely to have been infected several years before. Here, PML encephalopathy presented with both neurological and neuropsychiatric features. In addition to medical management with HAART, he required psychiatric treatment for a manic-like episode induced by PML. Rehabilitation under a specialist HIV mental health team over subsequent months required regular psychiatric review, liaison with his HIV physician and clinic, with housing services, his employer and with his family. Aided too by a resilient attitude to his difficulties, the patient made a virtually full recovery in <1 year. His return to work in the same capacity as before, and with no neurological or neurocognitive after-effects, is a remarkable transformation from the near universally fatal outcomes of the pre-HAART era. Immune reconstitution with HAART allows >50% of cases of HIV-associated PML to survive, albeit with physical or mental deficits in many cases. Their subsequent occupational trajectories have not been tracked in the literature. This case demonstrates what is now possible in the workplace with a multidisciplinary approach to rehabilitation and recovery.

Key points

- Progressive multifocal leukoencephalopathy is a severe form of human immunodeficiency virus-associated brain disease, previously almost uniformly fatal, which precluded work for all those affected.
- With combination retroviral medicine and rehabilitation, full recovery and return to work are now possible.
- Occupational outcomes after treated human immunodeficiency virus-associated brain disease have not yet been analysed or disseminated.

Conflicts of interest

We declare that we have no conflict of interest.

References