

Double trouble: daily function and the impact of old age and HIV

Older age exacerbates the deleterious effect of HIV on daily functioning, investigators from the US report in the online edition of the *Journal of Acquired Immune Deficiency Syndromes*. Investigators compared ability to perform daily tasks, cognitive function and quality of life between patients according to their age and HIV infection status.

‘For each of the functional outcomes, the older HIV+ group demonstrated poorer everyday functioning relative to other study groups,’ comment the authors. ‘These findings suggest that older age may exacerbate HIV-associated disability in daily life.’

The investigators believe their findings have important implications for HIV care, which should focus on the early detection of functional problems and their causes.

Thanks in part to the success of anti-retroviral therapy, the population living with HIV in the US and other industrialised countries is ageing. Data from the US Centers for Disease Control (CDC) suggest that a quarter of all people with HIV are now aged over 50. As

they age, they become more vulnerable to age-related disorders such as cardiovascular disease, changes in bone mineral density and neurocognitive impairment.

Investigators hypothesised that HIV infection would exacerbate the declines in daily function that are associated with these diseases of old age and ageing generally. They therefore designed a cross-sectional study involving 103 people living with HIV and 87 HIV-negative controls. They examined the factors associated with everyday functioning and quality of life between those aged under 40 and those aged over 50.

A wide spectrum of tests was used to assess functioning. These included:

- Instrumental activities of daily living (IADL): financial management, purchase of groceries, cooking, using transport, shopping, managing medication and planning social activities.
- Basic activities of daily living (BADL): cleaning, laundry, home repairs, dressing and bathing.
- Karnofsky score on a range of 100 (able to carry out normal activities) to zero (death).
- Questionnaires assessing both physical and mental health-related quality of life.
- Medical evaluation: assessment of co-morbidities common in older people living with HIV, including diabetes, cardiovascular disease, respiratory disease and hepatitis C co-infection.
- Neuropsychiatric assessment: monitoring for HIV-related neurocognitive impairment.
- Psychiatric evaluation: assessment of current mood and history of major depression and substance abuse.

The older group of people with HIV had an average age of 55 years and 71% were male. They had been living with HIV for a median of 18 years. Their median nadir CD4 cell count was 148 cells/mm³. All were taking antiretroviral therapy and 90% had an undetectable viral load. This group had a high prevalence of co-morbid conditions. A quarter had a current major depression and half had a lifetime history of depression. Over a third were co-infected with hepatitis C, 10% had cardiovascular disease, 15% had been diagnosed with diabetes and 5% had a respiratory complaint.

There was a significant interaction between ageing and HIV regarding IADL scores ($p=0.025$), BADL scores ($p=0.043$) and Karnofsky score ($p=0.001$).

Factors associated with lower IADL scores for older people with HIV included cognitive impairment ($p=0.043$), current major depression ($p=0.002$), nadir CD4 cell count ($p=0.023$) and lack of ‘cognitive reserve’ – engagement with intellectual and social activities ($p=0.028$).

BADL severity was associated with current depression ($p=0.007$). A lower Karnofsky score for elderly people with HIV was also related to current depression ($p=0.016$), as were having other serious health problems ($p=0.008$) and lack of cognitive reserve ($p=0.016$).

Poorer self-rated mental health-related quality of life in older people with HIV was also attributed to the additive effects of age and HIV.

‘Several of these predictors are highly amenable to proper screening and treatment,’ note the researchers. ‘For example, major depression was arguably the most reliable predictor of adverse functional outcomes in our older HIV+ cohort ... these findings highlight the need to regularly screen older HIV+ adults for symptoms of depression given that major depression can disrupt performance of important daily activities and are potentially remediable.’ They note that the best outcomes are seen in people who are treated with both antidepressants and psychotherapy.

The investigators also highlight the association between cognitive reserve and daily function. ‘This evidence suggests that in older HIV-infected adults, lower cognitive reserve may interfere with the adaptive ability to engage alternate brain networks and/or initiate alternate brain networks and/or initiate use of compensatory strategies when they encounter problems in their daily life, resulting in disability.’

Erlanson KM, et al. Synergistic effects of HIV infection and older age on daily function. *J Acquir Immune Defic Syndr*, online edition. [<http://dx.doi.org/10.1097/QAI.0b013e31826bfc53>, 2012]