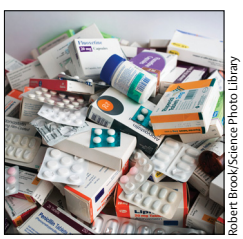
Predictions of geriatric HIV in 2030



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In 2010, we used our HIV clinic database located in the southern USA to develop a clinical profile of what HIV infection means at each decade of life, focusing specifically on adults older than 50 years.[1] Several of our findings were quite revealing. First, the prevalence of depression and anxiety is largely constant across the lifespan at roughly 40% and 20%, respectively. Second, the average number of prescribed drugs for individuals in their 50s was 12·48, which increased to 14·82 for those aged 60 years or older. Third, although the average CD4 lymphocyte count ranged from 420 to 479 in each decade of life, ANOVA analysis showed that older adults generally had significantly (p=0·018) lower viraemia than did adults in younger decades of life. Older adults were also more likely (p=0·001) to have an undetectable viral load (<50 RNA copies per ml) than were younger adults, with a prevalence of undetectable viral load of 65·4% for those in their 50s and 76·7% for those aged 60 years or older, compared with 36·2% for those in their 20s and 39·4% for those in their 30s. Finally, we noted that various distributions of comorbidities emerged across the lifespan (eg, condyloma was more common in younger adults while alcohol misuse peaked in midlife [40–59 years]). However, the comorbidities that were most prevalent in our group of individuals aged 60 years or older were insomnia (17·8%), coronary artery disease (20·5%), hypertension (67·1%), hypercholesterolaemia (65·8%), diabetes (28·8%), peripheral neuropathy (24·7%), hepatitis C (12·7%), and renal disease (23·3%).

Mikaela Smit and colleagues' study[2] far extends what we and others know about ageing with HIV infection and provides a statistical projection of what the clinical features of ageing with HIV will look like in 15 years. Theirs is the first study to provide such an advanced individual-based model to estimate clinical trends of ageing with HIV. Based on data from the national Dutch ATHENA cohort for more than 10 000 patients infected with HIV, they predicted that by 2030, 73% of individuals infected with HIV will be aged 50 years or older. By 2030, in this older group, 84% of individuals will have at least one additional comorbidity and 28% will have at least three, compared with 19% of HIV-negative adults. The comorbidities underlying this increased prevalence will be malignancies (predicted for 17% of individuals), diabetes (predicted for 17% of individuals), and cardiovascular disease (predicted for 78% of individuals). This prediction supports the findings of several studies[3,4] that suggest that such comorbidities will be of increasing importance, especially because these comorbidities might be partly caused by HIV-related inflammation and increased stress in this population.[3,4] With treatments for such comorbidities, pharmacological burden will increase with respect to both the number of drugs needed and possible drug–drug interactions and contraindications with the first-line HIV regimens. Worryingly, Smit and colleagues[2] predict that as many as 53% of individuals infected with HIV will have such drug–drug interactions in 2030. Further contributing to these interactions will be reductions in renal and hepatic functioning[1] and decreases in patients' adipose tissue, which will affect pharmacokinetics and pharmacodynamics.[3]

Adults infected with HIV are expected to have close to normal lifespans[5,6] and Smit and colleagues' study provides a glimpse into the many challenges (eg, drug adherence, lifestyle modification, engagement in care) that will need to be addressed, especially in the resource-rich countries in which these findings are most applicable. One topic of particular interest is neurocognitive functioning.

At present, the prevalence of HIV-associated neurocognitive disorders range from 52% to 59%.[7,8] With increasing age, the prevalence and severity of neurocognitive disorders might increase: Valcour and colleagues[9] reported that older adults with HIV were three times more likely to develop HIV-associated dementia than were younger adults. Malignancies, diabetes, and cardiovascular disease already compromise brain reserve and neurocognitive function,[10] and could exacerbate HIV-associated neurocognitive disorder.[5] Although older adults infected with HIV show superior drug adherence and compliance with medical appointments compared with younger adults,[11] which might explain why many older adults are more likely to have suppressed viraemia,[1] such advantages disappear when these older adults have neurocognitive loss.[11] In the long term, such neurocognitive losses can also reduce ability in driving, financial management, and other everyday tasks, which will disproportionately

increase need for formal and informal caregivers among affected individuals.[12,13]

Smit and colleagues' study[2] contributes to the growing body of research on ageing with HIV and provides solid insights about what to expect for patients as they age. By extrapolation from these findings to other relevant areas, as we have done for neurocognitive functioning (eg, medical management, case management, retirement issues), researchers, clinicians, and policy makers can plan to allocate resources accordingly to provide care to this growing geriatric population.

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