**Long-term HIV infection and health-related quality of life**

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The widespread availability of potent combination anti-HIV therapy (commonly called ART or HAART) has greatly reduced deaths from AIDS-related infections in Canada and other high-income countries. The benefit of ART is so profound that researchers increasingly expect that some young adults who are infected today and who begin treatment shortly thereafter will likely live into their 80s.

Historically, scientists have done much work trying to understand ART’s impact on HIV and the immune system. However, as ART users are living longer, research needs to be done on what scientists call health-related quality of life (HRQoL). According to scientists who study HRQoL, this term includes issues such as “physical, cognitive, emotional and social functioning.”

Assessing HRQoL can be useful for understanding the experience of living with HIV, which will become more important as the population of HIV-positive people ages, and to provide necessary health and social services.

Scientists in the UK undertook studies collecting and comparing health-related information and assessments of HRQoL from 3,151 HIV-positive and 7,424 HIV-negative people. They found that, overall, HIV-positive people had reduced HRQoL. In particular, HIV-positive people were more likely to report feelings of anxiety and/or depression. Furthermore, people with HIV reported feelings of more severe anxiety and/or depression than HIV-negative people. Reduced HRQoL was more likely to occur among people who had been diagnosed with HIV in earlier decades. In HIV-positive people, aging was not linked to decreased HRQoL.

This is likely one of the largest studies to compare HRQoL between HIV-positive and HIV-negative people in a setting of universal access to health care and treatment in the current era. The study results provide clues about the issues that need to be addressed if the overall health and well-being of HIV-positive people is to be improved.

**Study details**

Scientists amassed data from the following two studies:

**ASTRA (Antiretrovirals, Sexual Transmission Risk and Attitudes study)**

ASTRA surveyed about 5% of the people diagnosed with HIV in the UK. Below are some key points summarizing information about participants in ASTRA:

- the survey was done from 2011 to the end of 2012; additional information was retrieved from medical records of participants
- data were analysed from 3,151 HIV-positive people
- participants were mostly male (81%), and of those, mostly gay or bisexual
- average age was 45 years
- a majority of participants (75%) were taking ART and most of them had a viral load less than 50 copies/ml
- 13% of all participants had hepatitis C virus (HCV) co-infection
- about 95% of participants had more than 200 CD4+ cells/mm³

**HSE (Health Survey for England)**
HSE surveyed randomly selected households in England in 2011; nurses interviewed participants to gather additional information not captured in the survey. Below are some key points summarizing information about participants in HSE:

- data were analysed from 7,424 participants
- on average they were about 50 years old, HIV negative and consisted of more women (56%) than men (44%)
- the vast majority of men identified as straight
- data about hepatitis C virus status were not available

Researchers used a survey instrument that has been well validated in different populations, including people with HIV.

**Results—Smoking**

In general, HIV-positive participants were more likely to smoke tobacco (24%) than HIV-negative participants (19%). Among smokers, HIV-positive participants were more likely to be heavy smokers (10%) than HIV-negative people (4%). This latter difference was statistically significant; that is, not likely due to chance alone. Other studies have also found higher rates of tobacco smoking among HIV-positive people.

**Results—HRQoL**

Despite being on average four years younger than the HIV-negative participants, HIV-positive people as a group had lower HRQoL scores, with specific problems reported in the following areas:

- mobility
- self-care
- performing everyday activities
- pain and/or discomfort
- anxiety and/or depression

Furthermore, in all of these areas, the differences in HRQoL scores between HIV-positive and HIV-negative people were statistically significant.

**Focus on anxiety and depression**

Perhaps the most striking differences in HRQoL between the two main populations analysed in the study emerged in the areas of anxiety and/or depression. Here is the distribution of participants within different categories related to mental health:

No anxiety and/or depression

- HIV-positive people – 50%
- HIV-negative people – 70%

Some anxiety and/or depression

- HIV-positive people – 40%
- HIV-negative people – 10%

Severe anxiety and/or depression

- HIV-positive people – 10%
- HIV-negative people – 3%

Researchers took into account many potential factors—smoking, level of education, recent use of recreational drugs, HCV-positive status—that could have had an impact on HRQoL and possibly accentuated the statistical differences between populations. Despite these precautions, the differences in HRQoL persisted between HIV-positive and HIV-negative people. Even when researchers engaged in an exercise by removing gay and bisexual men from their analyses, the differences persisted. Among HIV-positive people, the study’s findings were the same
regardless of CD4+ cell count or viral load.

**Additional factors**

The study team also found that HIV-positive people with the following factors were more likely to have reduced HRQoL compared to HIV-negative people:

- people of colour
- women (compared to straight men)

**Changes with time**

When researchers checked the year when people became HIV positive with their HRQoL score, they noticed that there was a clear trend: The further back in time someone was infected, the more likely that they experienced poor HRQoL in the present era. Further analyses found that this was not merely due to an effect related to the age of participants. That is, there was no evidence that as HIV-positive people aged they experienced worse HRQoL compared to HIV-negative people. Additional analyses are needed to understand why some people who were diagnosed in the pre-HAART era are more likely to have worse HRQoL today than people diagnosed in the recent era. The researchers plan to assess differences between participants who never experienced AIDS-related illness and those who had in order to determine if this made a difference in HRQoL.

**Why the differences?**

The present analyses of ASTRA and HSE are cross-sectional in nature. Such an analysis or study design is analogous to a snapshot taken at one point in time. In such analyses, drawing firm conclusions between cause and effect is difficult. However, it is possible to place the ASTRA and HSE findings in context as we do in the following paragraphs.

**Issues**

Since the onset of the AIDS pandemic, mental health and emotional issues have been areas of concern for both HIV-positive and HIV-negative people. American physician Richard Glass, who observed the impact of the arrival of the HIV pandemic, proposed that “the intensity of emotional responses to AIDS may be at least partially due to its linkage with two of life’s most powerful experiences—sex and death.” In the early era of AIDS, there was no effective treatment.

However, in the current era, with the near-normal life span projected for some HIV-positive people taking ART in high-income countries, fears about imminent death should not be prominent. Thus, there may be other reasons in the present study that account for why anxiety and depression are occurring in some HIV-positive people in high-income countries. The British researchers put forth the following possible explanations as to why participants in ASTRA tended to have reduced HRQoL:

- living with a chronic condition
- social circumstances
- relationship issues
- prejudice and discrimination that they may face
- potential side effects of specific medicines

The researchers noted that regardless of the underlying cause(s) of anxiety and/or depression in HIV-positive people, their findings underscore the need for doctors and nurses to screen their patients for mental health and emotional issues and offer treatment (or referral to a specialist) if needed.

The present analysis also echoes a finding from many other studies: Depression and/or anxiety are issues faced by HIV-positive people in many regions, even in the current era. Undiagnosed, untreated or poorly managed mental health issues can not only affect HRQoL but a person’s ability to adhere to ART and, in some cases, their survival.

The findings from the ASTRA and HSE comparisons are important. They demonstrate the need for HRQoL assessments to be done in other studies with HIV-positive people so that they can enjoy the benefits of ART and maximize their HRQoL.
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