# Braving Cognitive Decline: Can People With HIV Fight Back?

As HIV-positive people experience cognitive decline at disproportionate rates, scientists have yet to tease apart precisely how the virus may cause such accelerated aging. But experts in the field argue this is no reason to ignore the issue, considering there are still many ways to improve cognitive outlook.

May 1, 2013 By Benjamin Ryan

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As long-term antiretroviral therapy escorts significant segments of the HIV population into old age, an ironic luxury of sorts has surfaced: the ability to focus on quality of life issues and to cope with other nagging hassles associated with getting older. However, research has shown that people with HIV are likely to suffer from a kind of accelerated aging in the form of increased rates of bone loss, cardiovascular disease and cognitive decline, even in the face of full viral suppression.

Among this constellation of concerns, cognitive decline is at once widely prevalent and widely overlooked as a major challenge facing people living with the virus.

A landmark 2009 study known as CHARTER found that a little more than half of all people living with HIV experience some form of cognitive impairment. Subsequent research has confirmed those findings, pinning the figure in the same general ballpark, although some more recent studies have found lower rates in those who start ARVs early and who have few other risk factors that affect the nervous system such as cardiovascular disease or substance abuse.

Some may also develop a condition known as HIV-associated mild neurocognitive motor disorder, as well as tremors and personality changes.

The prevalence of HIV by age is a bell curve centered on the mid-to-late 40s; soon the average age will move past 50. Jules Levin, 63, founder and executive director of the National AIDS Treatment Advocacy Project, is something of a lone wolf—and a tenacious one—in his advocacy for greater research and clinical attention to the issue of aging among people with HIV. He sees a grim forecast as his HIV-positive peers move into old age.

“Personally, I think that it’s a ticking time bomb,” he says.

At present, however, cognitive decline among the overall HIV population pales in comparison to

the nightmares of the past.

As David M. Simpson, MD, director of the Neuro-AIDS Program at Mount Sinai Medical Center in New York City, recalls of the pre-antiretroviral (ARV) days of the AIDS epidemic: “Dementia was common and profound to the point where patients were ending up bed-bound, incontinent and delirious.”

But now, with most cases of cognitive decline in the mild-to-moderate range, Justin C. McArthur, MBBS, MPH, a professor of neurology at Johns Hopkins University School of Medicine, says, “It may be a silent type of impairment so that the person affected may not be aware of it. But it’s measurable, and it’s real, and it has functional consequences that impact life, work, driving, medication adherence. I think, frankly, [it’s] being underestimated by the busy treatment providers.”

Cognitive decline may indirectly worsen HIV disease progression. A recent study published in the online edition of the Journal of Acquired Immune Deficiency Syndromes found that neurocognitive impairment and memory trouble were linked to worsened adherence to ARVs.

Another study, presented at the Conference on Retroviruses and Opportunistic Infections (CROI) in Atlanta in March, noted the risk for falls among the HIV population. In a study of 537 people with HIV between 45 and 65 years old, 30 percent reported at least one fall in the past year and 18 percent reported recurring falls. The research found that certain clinical symptoms that are more common among people with HIV, such as problems with balance and lightheadedness or faintness, were associated with falls.

When coupled with low bone density, this heightened risk may create a perfect storm for broken bones, which ultimately can lead to frailty. In their presentation at CROI, the researchers encouraged clinicians to assess for fall risk. One piece of good news, however, was that those in the study taking ARVs were half as likely to experience a fall.

Sounding the alarm about cognitive decline is a challenge because it may be perceived as a secondary quality of life issue, and because care providers may lack the time to actually address such concerns.

“We make out this laundry lists for clinicians to do, but it’s grown so long now that it’s really just out of control,” acknowledges Scott Letendre, MD, a professor of medicine at the HIV Neurobehavioral Research Center and Antiviral Research Center at University of California, San Diego. “I think we’re at a point where you have to start bringing in an expert and saying, ‘Okay, as the primary care provider, I can’t deal with this issue of cognitive problems. And it’s not the right decision to ignore it. So I’m going to refer to a neurologist or psychiatrist or whoever can take the time and work their way through a differential diagnosis and come up with some solutions.’”

What is cognitive decline? What to do about it?

Some common signs of cognitive decline include:

Difficulty with new learning.
Difficulty with memory, especially short-term memory, such as where you left your keys, or which friend you had lunch with yesterday.
A lessened speed of mental processing: The brain churns more slowly (imagine having a bad hangover).

A complex array of factors may affect the cognitive performance of people living with HIV, just as it might for the general population. The difference is that many of these factors show up disproportionately among the HIV population, including current or past drug use, depression and cardiovascular disease. Head trauma also contributes to cognitive decline.

As for the role HIV itself plays in this complex Venn diagram of overlapping causes, research has thus far proved inconclusive. Scientists are examining ways that HIV, as well as long-term inflammation resulting from the infection, may affect the brain and central nervous system. There is also research into HIV's affect on cardiovascular disease and how that may in turn affect the brain's ability to heal after minor injuries.

Simpson, who has devoted decades to researching HIV's contribution to cognitive decline, says, "There is no bottom line, no clearly accepted answer."

Consequently, there is no magic pill on the horizon, no promising therapy that can counteract HIV's affect on cognition at the problem's elusive source.

That means the best hopes of improving brain function involve tackling the contributing factors that aren't related to HIV.

"Anything that can be remedied that may be contributing to cognitive impairment certainly should be remedied," Simpson says. "Psychiatric disease and issues relating to substance abuse are two good examples." He also points to vitamin B12 deficiency as another avenue to inspect and possibly remedy, as well as neurosyphilis, which is a consequence of untreated syphilis infection.

People should also strive for the best possible control of HIV with the fewest possible side effects, paying attention to ways that ARVs may aggravate the central nervous system. Considering that switching HIV therapies may ultimately alleviate cognitive side effects, Letendre advises people with HIV "to be aware that there are differences between the drugs. And if people are having problems they should let their provider know."

Hepatitis C virus (HCV) coinfection may also contribute to cognitive problems. A recent paper published in the journal Hepatology took a look at the available research in the field and found a clear consensus that hep C leads to both psychiatric and cognitive problems. Liver disease can cause the same problems. Thus, treatment for hep C infection may help alleviate cognitive symptoms. Fortunately, newer therapies to treat the virus may hit the market as early as next

year; they’re more effective, more tolerable, easier to take and can cure many people in as few as eight to 12 weeks. (To keep abreast of the progress in this field, check out hepmag.com.)

There are also software programs, such as those found at lumosity.com, that may aid in cognitive retraining, although they haven’t been studied very systematically.

Even the most basic facets of taking care of one’s self may be of great use. Letendre notes the general scientific consensus that physical exercise helps ward off bone loss, cardiovascular disease and cognitive problems.

“It sounds silly to say, ‘Well, the solution is eating right and exercise,’” he says. “But it sort of is.”

For the time being, such piecemeal suggestions, however they may seem to fail to get to the heart of the matter, are the best science has to offer. And until the research catches up with the problem, it’s hard to argue against taking the best possible care of one’s physical and mental health.

Editor’s Note: This article has been updated.

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