

Latest anti-retroviral drug regimens provide 'Lazarus Effect' for HIV patients

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Treatment of the HIV/AIDS epidemic has seen remarkable advancements with the advent of the latest anti-retroviral drug therapy and powerful tools to test for drug resistance, making the infection almost "undetectable" in patients who strictly comply with their

medication therapy, a just-published perspective article by a clinical team at the University of Arizona College of Medicine—Tucson points out.

Lead author Stephen A. Klotz, MD, professor in the Division of Infectious Diseases in the UA Department of Medicine, adds that in the past, HIV/AIDS patients often suffered from extreme [frailty](#), in effect, often "aging 10 to 15 years" in appearance and function.

But the article, HIV Infection-Associated Frailty: The Solution for Now is Antiretroviral Drugs, published Feb. 25, 2019 in the *Journal of the International Association of AIDS Care Providers*, notes frailty related to HIV infection is "rapidly becoming a specter of the past." Further, thanks to the new treatments, disfiguring lipodystrophy (changes in body fat that affect some patients) is "a grim historical footnote to the HIV epidemic" in the United States," the authors add.

"We have shown that years of anti-retroviral therapy can return patients to a non-frail state. In addition, prolonged anti-retroviral therapy restores cellular function and numbers of cells adversely affected by HIV," Dr. Klotz says. "Recently we demonstrated a marked improvement in aging markers in HIV patients on long-term anti-retroviral drug therapy."

The team also has employed another major advancement in the treatment of HIV/AIDS: A "Frailty Meter," developed by Bijan Najafi, Ph.D., MSc, then a professor in the UA Department of Surgery and director of the Consortium on Advanced Motion Performance.

The device now allows clinicians to measure HIV/AIDS patients' frailty in a matter of seconds—whereas in the past frailty measurements often required several clinic visits.

The Frailty Meter detects frailty through a small, Bluetooth-supported

motion sensor that attaches to the subject's wrist. In about 20 seconds, it measures subjects' elbow flexes (similar to arm curls) to accurately determine their frailty. (Dr. Najafi now is a professor of surgery and director of clinical research, Division of Vascular Surgery, Baylor College of Medicine.)

Another major clinical advancement is the ability today to cure the hepatitis C virus infection, which in the past commonly was associated with HIV/AIDS infection, Dr. Klotz points out. "So this other viral scourge is decreasing in prevalence, not only in the general public, but in our HIV patients as well."

Remarkably, today, patients with HIV take a single anti-retroviral pill (which contains three medications) once a day, "with virtually no side effects," Dr. Klotz says, noting in the early 1980s, patients might have taken nearly 20 pills a day, with many suffering severe side effects.

In related research led by co-authors Nicole Bradley, Ph.D., a postdoctoral research associate in the UA Department of Immunobiology and Nafees Ahmad, Ph.D., professor in the UA Department of Immunobiology and a member of the UA Cancer Center, the team also is studying specific immune aging markers in HIV patients "and once again is finding improvement in infected patients on continuous long-term anti-retroviral therapy," according to the article.

Co-author Shannon Smith, MBA, manages the Petersen Clinics, part of the UA Department of Medicine's Division of Infectious Diseases. In collaboration with Banner—University Medicine, Petersen Clinics provides clinical care for people living with, or at risk for, HIV. The program provides outpatient care at affordable prices for HIV-infected adults, plus testing, education and counseling services to patients and their families. The program provides biomedical interventions for people at risk for HIV, including Pre-Exposure Prophylaxis (PrEP) and Non-

Occupational Post-Exposure Prophylaxis (nPEP), Smith says. The Petersen Clinics uses a multi-disciplinary team approach to provide patients comprehensive HIV specialty care and is comprised of infectious disease specialists, pharmacists, clinical coordinators, medical case managers and early interventionists.

"We're very proud of the scope of services we provide," Smith says.

"We're very creative in ensuring our [patients](#) and families obtain the care they need."

Provided by University of Arizona

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