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Scripps Florida scientists find 'functional cure' for HIV

BUSINESS By Jeff Ostrowski - Palm Beach Post Staff Writer

JUPITER — In findings that could point to a better treatment for HIV infections, Scripps Florida scientists say they've found a new way to manage the virus.

Scripps Associate Professor Susana Valente says she successfully tested a drug that promises a "functional cure" for HIV: The infection isn't gone, but the virus lies dormant.

The results of a study led by Valente were published in October in the journal Cell Reports. Valente and researchers from Scripps Florida, the University of North Carolina and Walter Reed Army Institute of Research used a natural compound known as didehydro-Cortistatin A, or dCA. It stops the spread of HIV by inhibiting the protein Tat.

"It is really the proof of concept for a functional cure," Valente said.

HIV, the precursor to AIDS, no longer is the death sentence it was in the 1980s. Still, HIV remains a chronic disease that requires regular medication. Patients take so-called cocktails of antiretroviral drugs that keep the infection in check but don't kill the virus.

"As soon as somebody stops treatment, these cells will rebound," Valente said.

Her research found that dCA can suppress HIV to the point that even if a patient stops taking medication, the HIV infection won't come back immediately. In half of mice treated with dCA, HIV levels disappeared for 16 days after all antiretroviral drugs were stopped, researchers said.

Researchers tested dCA both in cells of humans with HIV and in mice infected with HIV.

In another apparent benefit of dCA, Valente said the compound also can stop the neurological deterioration caused by HIV. Even while taking medication that controls their HIV, patients can suffer motor dysfunction, speech problems and other cognitive issues.

Valente, a native of Portugal who joined Scripps Florida in 2009, has spent years investigating dCA. She won grants from the National Institutes of Health to support her work.

Valente champions an approach to HIV known as "block and lock." The strategy aims to block the reactivation of the virus in cells, and leave HIV dormant.

The dominant approach toward HIV research in recent years has been "shock and kill." Scientists look for ways to flush HIV out of its hiding places in lymph nodes, spinal fluid and elsewhere and then eradicate the virus rather than simply manage it. That plan of attack has won much of the research funding.

"Everybody was going berserk for shock and kill," Valente said.

Marcella Flores, associate director of research at amfAR, an AIDS research foundation in New York, called the results of Valente's research both "very exciting" and a vindication for Valente's approach to vanquishing HIV.

"It is the first study to show the strength of block and lock," Flores said.

She noted that sending HIV into remission isn't as satisfying as killing it altogether. Patients with dormant HIV still would have to visit physicians regularly and still would carry the stigma of HIV. But Flores said she's not taking sides in the shock and kill vs. block and lock debate.

"I am agnostic about what cure is going to be the winner in the end," Flores said. "There's merit to both."

Valente, for her part, hopes a successful experiment gives momentum to her approach. Reflecting the long-term nature of basic research, Valente's HIV treatment is years away from being marketed to patients.

"Now there's a million questions," she said.

Among them: For how long does dCA work? Might the virus rebound someday? Would a big pharma partner be willing to test the treatment in humans?

“We’ve found this works, so now we need to push it into the clinic,” Valente said. “That’s pharma’s job.”

The Campbell Foundation of Fort Lauderdale gave Valente about $80,000 to pursue her work, and foundation head Ken Rapkin calls her work “a huge breakthrough” that merits further study.

“Is it ready for prime time? No,” Rapkin said. “Mice are one thing, but now it needs to move into human trials.”

An estimated 1.1 million people in the United States were living with HIV at the end of 2014, and nearly 37 million people worldwide were infected at the end of 2016, according to the U.S. Centers for Disease Control.

In the United States, 6,721 people died from HIV and AIDS in 2014, the CDC says. Globally, about a million people a year die of AIDS-related diseases.

“HIV is still in epidemic proportions in certain populations,” Flores said.

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