PA
POSITIVELY AWARE
THE HIV TREATMENT JOURNAL OF TEST POSITIVE AWARE NETWORK
MARCH+APRIL 2016

LIFE IN PANORAMA

PAGE 67

EXPERT GUIDANCE
ON CHOOSING
YOUR REGIMEN

THE ART OF HIV TREATMENT
THE BENEFITS OF
ANTIRETROVIRAL THERAPY

PAYING FOR YOUR MEDS
KNOW WHERE
TO FIND HELP

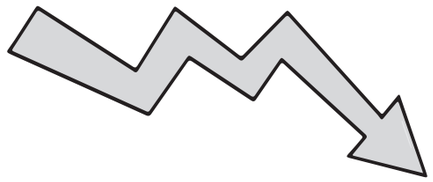
SPENCER COX
THE LEGACY OF AN ACTIVIST

THE 20TH ANNUAL HIV DRUG GUIDE

STARTING HIV TREATMENT HELPS PROTECT YOUR HEALTH.

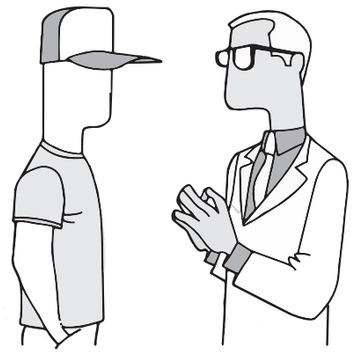
There is no cure for HIV, but treatment can stop the virus in your body and the damage HIV causes.

Treatment also helps make it possible to live a healthy life.



STAYING ON TREATMENT LOWERS THE AMOUNT OF VIRUS IN YOUR BLOOD.

The amount can get so low, it cannot be measured by a test. This is called being undetectable and it means you are taking care of your health. **It also lowers the chance of passing HIV on to others.**



TALKING ABOUT HIV TREATMENT

An open conversation with your healthcare provider can help put you on the path to a long and healthy life. **When you work together, it helps your healthcare provider find the treatment that is right for you.**

STOP THE VIRUS.

HelpStopTheVirus.com

GILEAD

STARTING HIV TREATMENT IS A HEALTHY STEP.

Here are two resources that can help.

STOP THE VIRUS.

Watch videos, share information, and see how we can all help stop the virus.
www.HelpStopTheVirus.com

HIV ANSWERS

Get the answers you need, privately, on your phone.
www.HIVanswers.com/app

POSITIVELY AWARE

JOURNALISM. INTEGRITY. HOPE.

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"I encourage you to use this issue as a guide, but then take it upon yourself to create your own plan and path to wellness."

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"Drugs may not be enough, but they're important."

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"I don't live to be on HIV treatment; I'm on HIV treatment so that I can live my life—that's the message behind this year's edition of the HIV Drug Guide. Live your life in panorama."

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An HIV and hepatitis C specialty pharmacist for Walgreens/Duane Reade in New York City, Dr. Christopher M. Nguyen currently practices at Gay Men's Health Crisis. Chris works directly with clients on HIV-related issues such as adherence and medication management, and provides consults for local practitioners on drug interactions, dosing adjustments, and HIV and HCV regimen selection in co-infected patients. He also helps train Duane Reade pharmacists working in HIV Specialty Network locations in New York. Chris received his Doctor of Pharmacy degree at the University of California, San Francisco, where he currently serves as volunteer faculty, and is certified by the American Academy of HIV Medicine as an HIV Pharmacist. Prior to making the move to New York, he practiced at a Walgreens HIV pharmacy in the California Pacific Medical Center, Davies Campus.

THE DOCTOR
Melanie Thompson, MD

Principal Investigator of the AIDS Research Consortium of Atlanta, Dr. Melanie Thompson has conducted over 400 studies of HIV, STDs, and viral hepatitis. She is a member of the DHHS Antiretroviral Guidelines Advisory Panel and was chair of the IAS-USA Antiretroviral Guidelines Panel from 2009–2013. She also chaired an international panel on Guidelines for Improving Entry Into and Retention in Care, and Antiretroviral Adherence for Persons with HIV in 2010–2012. A member of the Fulton County Task Force on HIV/AIDS, she currently is Executive Editor of the *Strategy to End AIDS* in Fulton County. She also is a member and former chair of the National Institutes of Health's Office of AIDS Research Therapeutics Research Working Group. Most importantly, she is a medical provider for people with, and at risk for, HIV and viral hepatitis.

THE ACTIVIST
Moisés Agosto-Rosario

A longtime treatment advocate and educator for people living with HIV/AIDS, Moisés Agosto-Rosario is a frequent public speaker and writer in both English and Spanish. He has played a crucial role in ensuring that communities of color have equal access to care, treatment, and lifesaving information and has won numerous awards for his work with the HIV community. He is currently the Director of Treatment for NMA (formerly the National Minority AIDS Council) based in Washington, D.C. Previously he worked as project manager for the International Treatment Preparedness Coalition (ITPC) with the HIV Collaborative Fund for HIV Treatment Preparedness, a project of the Tides Center. In this role, he was responsible for all programs in the Caribbean, Latin America, West/Central Africa, and East Africa.

THE ASSOCIATE EDITOR
Enid Vázquez

POSITIVELY AWARE Associate Editor Enid Vázquez thanks AIDS activists and medical researchers for helping to save her sister Sylvia's life. "But for this 20th anniversary drug guide," Vázquez said, "it's such a poignant moment to look at the life of the activist who wrote the comments for our first guide, Spencer Cox. He had stopped taking his own HIV medications, or took them sporadically. I immediately thought, 'Drugs are not enough.' Still, he really believed in HIV therapy, and his work saved thousands of lives (and undoubtedly extended his own)." Sylvia today is enjoying the company of grandchildren, not to mention her beloved bluenose pitbull, Hercules. Therapy today, Vázquez points out, is much easier than what Sylvia and Spencer had to deal with in the early days.

NGUYEN: BRIAN TICE, JR. THOMPSON: COURTESY OF MELANIE THOMPSON AGOSTO-ROSARIO: JONATHAN TIMMES VAZQUEZ: CHRIS KNIGHT.


PrEP
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tingle
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IN EVERY ISSUE

ONLY ON POSITIVELYAWARE.COM

FEATURES

THE 20TH ANNUAL HIV DRUG GUIDE

LET'S CONNECT

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All communications (letters, email, online posts, etc.) are treated as letters to the editor unless otherwise instructed. We reserve the right to edit for length, style, or clarity. Let us know if you prefer we not use your name and city.

POWERFUL, POSITIVE WOMEN

Just picked up Jan+Feb issue of @PosAware featuring @Christies_Place staff & clients—so powerful and empowering! #women #HIV

MARIE FISHER
SAN FRANCISCO

SYNCHRONICITY

@PAeditor: Great editor's note on #synchronicity.

@ROBERTELLSWORTH
LOS ANGELES

MOVING PIECE

I was so moved by Rick Guasco's piece, [*Something more important than fear*, November+December]. Thank you so much for your honesty and openness.

JD DAVIDS
THEBODY.COM

GOOD WILL AMBASSADOR

I wanted to say how much everyone at Elizabeth Taylor AIDS Foundation appreciated the story you did on Kate [Burton] [*Ambassador Kate*, January+February]. Thank you for including so much of our work in the article.

JOEL GOLDMAN
MANAGING DIRECTOR
ELIZABETH TAYLOR AIDS FOUNDATION

LIFESAVER

I am a 20-year-plus HIV survivor. Your 2013 HIV drug guide may have saved my life when the prison doctor tried to put me on Prezista. Your guide told me that it contains sulfa, which I am allergic to. The doctor didn't know this, nor not to give me Tegretol, which prevents my other meds from working. Thank you! To us inside prison with no computer, you are our only resource. I am also an HIV advocate and distribute magazines to the inmates who need them most.

PA'S 2013 HIV DRUG GUIDE

KEVIN SAUVE
LIVE OAK, FLORIDA

MORE ON PrEP

I, for one, believe PrEP is for anyone who wants to protect themselves against HIV and come close to stopping it period.

JIM
VIA E-MAIL

The special issue on PrEP was helpful to me because I've been passing on information about taking PrEP and what it stands for. I would recommend Truvada for anyone that is sexually active, especially if they're barebacking. The one myth that's being spread is that Truvada is 99% effective, which is incorrect. The percentage of effectiveness will vary according to your lifestyle and good adherence.

RAPHAEL
VIA E-MAIL

[Editor's Note: *In the large iPrEx study PrEP decreased risk of HIV acquisition by 92% in those with measured blood drug levels indicating good adherence. A mathematical model estimated effectiveness could reach 99% for those who took Truvada at least 4 days a week. One's lifestyle shouldn't make any difference, but adherence always matters.*]

DESEGREGATION

I'm a long-time reader of your magazine and it's been wonderful learning from it. I've been locked up here in the Alabama prison system for 27 years and receiving your magazine for most of that time. It has helped me deal with my HIV status and given me insight on new medications. Thank you for the knowledge. By the way, I'm one of the inmates who was part of the HIV segregation lawsuit won against the Alabama Department of Correction in December 2012, *Henderson v. Thomas*. I was housed in the segregation unit from June 1989 to July 28, 2014.

RONALD LEE HATCHER
BIBB COUNTY CORRECTION FACILITY
BRENT, ALABAMA

EDITOR'S NOTE
JEFF BERRY

CHANGES

This past January I awoke to the news one day that David Bowie had died. My partner Stephen told me as I walked into the kitchen, and I thought it had to be a mistake, some kind of horrible, twisted hoax. When you are 57 years old, as I am, sixty-nine seems *way* too young to die.

When I graduated from high school in 1976, my parents gave me an all-in-one stereo system that I would play my vinyl records on (it even had a built-in 8-track player!). I would place David Bowie's album "Young Americans" on the turntable, and listen to it over and over again. I was spellbound by Bowie—his unique sound, poetic lyrics, the androgynous look. Everything about him spoke to me. As a slightly effeminate, young gay man who was still in the process of coming out, I found confidence through Bowie, the sense that everything was going to work out, and that I would eventually come into my own someday. He gave me, and others like me, hope, and made it cool to be different.

This is POSITIVELY AWARE's 20th Annual HIV Drug Guide, and I've been here for all of them; this is my twelfth as editor. Putting together this year's guide has given all of us here an opportunity to look back and reflect on the many changes that have taken place over the years. While putting together the DHHS Guidelines section on page 18, I was immediately struck by how radically they had changed from just two years ago, when we last ran that section. Last year we removed six drugs from the Drug Guide that are no longer or rarely prescribed, and this year we took out seven more. Many of those drugs saved hundreds of thousands of lives, even my own, but they are now (mostly) relegated to the dustbin of HIV medicine.

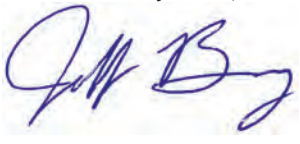
While treatment advances have made HIV therapy simpler and safer, it's more than just "drugs into bodies," as Enid Vázquez points out in her article on Spencer Cox in this issue. Spencer provided the activist comments in our first Drug Guide in 1997, and was instrumental in helping design the clinical trials for protease inhibitors that kept me and many others alive, but ultimately he stopped treatment himself and died in December 2012, at the young age of 44. Spencer's untimely death brought renewed attention to underlying issues such as mental health, substance abuse, and financial instability that need to be addressed in order to be successful in treating HIV.

It seems oddly surreal in many ways to see my (and many others') journey through life with HIV reflected in the pages of this magazine. I am incredibly fortunate to be alive, and I give a lot of that credit to POSITIVELY AWARE and TPAN, because working here forced me to learn about the benefits of treatment, and the importance of treating the whole individual. I'm not sure if I hadn't come to work here over 23 years ago, that I would have paid as much attention to that, at least not in 1992.

I encourage you to use this issue as a guide, but then take it upon yourself to create your own plan and path to wellness. If you're depressed or feel isolated, talk to someone at a support group or even an online community (there are many on Facebook such as the "International place for people with HIV/AIDS, and the people who love us" or "HIV Long Term Survivors"). If you are using, there are resources to help you get and stay sober (AA, NA, or CMA) or at the very least play safely and sanely (such as tweaker.org). Seek out an HIV case manager at the nearest AIDS service organization in your area who can help you see if there are financial resources available to you to help ease some of the stresses of day-to-day living. Consult with a provider who is knowledgeable about HIV/AIDS, and come prepared with a list of questions about potential side effects and drug interactions that you might be concerned about. If you want to simplify your treatment or help make it easier for you to take it every day as prescribed, see if there is something better that will work for you.

Much has changed in 20 years: the dawn of the Internet, smart phones, social media, even treatment for HIV—but one constant remains. Treating HIV is as much an art as it is a science. Change is inevitable, but by embracing it we "turn and face the strange," as Bowie aptly put it, and become the architects of our own future, and masters of our destiny.

Take care of yourself, and each other.



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@PAEDITOR

PHOTO: CHRIS KNIGHT BOWIE: GEORGE CLERK/ISTOCKPHOTO.COM


THE 13TH
RIDE FOR AIDS
CHICAGO
JULY 9–10, 2016
CHOOSE YOUR RIDE:
2 DAYS, 200 MILES
OR
1 DAY, 100 MILES
THE 13TH RIDE FOR AIDS CHICAGO
DETAILS AT RIDEFORAIDS.ORG

If you have HIV, are you experiencing decreased energy and unintentional weight loss?

Ask yourself the following questions:

Do you have **a loss of physical endurance associated with unintentional weight loss?**

- ☐ Are any activities more difficult to perform?
- ☐ Are you exercising less?
- ☐ Do you need to rest more often?
- ☐ Do you frequently feel tired after certain activities?

Have you had **unintentional weight loss?**

- ☐ Have you recently lost weight without trying?
- ☐ Do any changes in your weight negatively affect your health and how you feel?
- ☐ Do your clothes fit more loosely than normal due to unintentional weight loss?
- ☐ Have friends, family, or coworkers noticed any changes in the way that you look based on changes in your weight?

If you answered "yes" to any of these questions, bring this sheet to your healthcare provider to discuss whether you have HIV-associated wasting. Treatment options are available. Together you can discuss the next steps.

EMD Serono

EMD Serono, Inc. is a subsidiary of Merck KGaA Darmstadt, Germany

EMD

SPENCER COX: THE LEGACY OF AN ACTIVIST

IT'S SO MUCH MORE THAN JUST MEDS

BY ENID VÁZQUEZ

THIS IS OUR 20th annual HIV drug guide. In that first drug guide in 1997, my sister Sylvia appeared on the cover. Her doctor estimated that she was infected in 1980, and she's still alive and kicking today. We are closer now than we have ever been, for which I'm very grateful.

Next to her on that cover is Sanford Gaylord, who like Sylvia worked in the programs department at TPAN at the time. He's still as handsome as ever (as Sylvia is still beautiful) and works as a health consultant to government agencies, while he continues to be an actor as well as a writer.

The first doctor to provide comments on the drugs was Joel Gallant. And the first activist to comment on the drugs was … Spencer Cox.

Spencer died in 2012, at 44, after years of going on and off HIV meds as well as struggling with crystal meth. The man who as a youth became a leading AIDS treatment activist and helped save tens of thousands of lives had lost his own.

But long after he had helped bring the lifesaving protease inhibitor drugs to market in the 1990s, he co-founded The Medius Institute for Gay Men's Health in 2006 to bring attention to the depression, isolation, addictions, and other concerns that affected gay men in middle age, whether living with HIV or not. Why, for example, were men who had survived the plague uninfected now later in life becoming HIV-positive?

"While it is by no means certain that current high-risk behaviors are related to the traumatic survival of AIDS-related loss, the question certainly merits more detailed exploration than it has been given," Spencer wrote in "The Legacy of the Past: Gay Men in Mid-Life and the Impact of HIV/AIDS."

"Spencer was really the first person to speak up for long-term survivors," said HIV treatment activist Matt Sharp, also an early ACT UP member. "He really believed in 'drugs into bodies,' an ACT UP slogan. But the drugs have their toll, and they certainly had a toll on him."

We will never know exactly what happened. As Spencer's friend and colleague Tim Horn, also a treatment activist, said, "The only person who can tell us is Spencer."

But his death, of PCP, an AIDS-related pneumonia, in 2012, brought a sense of tremendous loss. It created a shift in the epidemic, and the people benefitting from that today are a part of his legacy.

FIGHTING TO LIVE

Spencer joined ACT UP when he was only 19, working on the science-laden Treatment and Data Committee pushing for drug development. Spencer and other committee members went on to form the Treatment Action Group (TAG). But after becoming very sick in 2000 and going on disability, Spencer not only suffered financially, but struggled to decide what he really wanted to do with his life. He had been a full-time activist who had never worked outside of AIDS research, dropping out of college, where he studied theater, to join to join ACT UP in New York City. Soon afterwards he tested positive himself.

Said his longtime best friend and Medius Institute co-founder, John Voelcker, "I remember that for about five years after 9/11, there were mental health ads in the subway saying, essentially, 'Thinking a lot about the Twin Towers? Do you want to hurt your better half or kick the dog? You may be depressed. Call this number for counseling.' Spence said, 'We lost 30,000 people [in New York]. We spent years being spat at and having to fight and put our bodies on the line to be treated like human beings. Where's *our* mental health care?'"

Three weeks before he died, he along with friends and colleagues Peter Staley and Garance Franke-Ruta spoke to a New York audience at a showing of a documentary on ACT UP, *How to Survive a Plague*, which received an Oscar nomination for Best Documentary Feature. Spencer was in good spirits.

Peter, who delivered Spencer's eulogy, said the memorial became a reunion of activists from the '80s and '90s, who then organized a number of events and efforts that have continued. "It fed into this renewal of activism in general," he said. On the flip side, however, are anecdotal reports from a U.S. study indicating increased use of meth among gay men, after continuous declines seen from a peak in 2004. "We're not seeing statistics yet, but awareness campaigns are waning and so young men don't fear it like we did when we lived through a meth epidemic," said Peter.

Following Spencer's death, work on the psychological needs of long-term survivors flourished. GMHC took under its wings the Friends in Deed support group which had been dismantled. A town hall meeting took place shortly after his death, bringing together hundreds of people to discuss the issues he had raised through Medius. A week later, another gathering, this time presented by a group of activists calling themselves The Medius Working Group, again looked at the issues (presentations were posted to YouTube). St. Luke's-Roosevelt Hospital Center in New York City renamed its HIV clinic the Spencer Cox Center for Health, and re-dedicated itself to emotional as well as physical support. Columbia University, thanks to a suggestion from TAG, is conducting a study of the effects of early ACT UP involvement on people's lives. Support groups for long-term survivors were created around the country. The Reunion Project, sponsored by TPAN with support from Bristol-Myers Squibb, holds gatherings around the country bringing together long-term survivors to look at their needs and to support one another. No

PHOTO: WALTER KURTZ

longer are long-term survivors taken for granted. Also gaining ground is trauma-informed health care, promoted primarily by advocates for women and people of color living with HIV.

"A lot has been written about this legacy of Spencer's," said Tim. "There's this mystique that has surrounded him, about why this happened to someone so prolific and smart and beautiful and incredibly witty, an activist. I think it's a fair question. But I also think it's really important to remember who Spencer was and what he did for HIV prevention and activism, in particular as someone who didn't have any scientific training who became one of the most trusted experts at the table."

Tim said that Spencer not only worked for representation from people living with HIV in clinical trials, but for information they needed to make empowered treatment decisions.

Melanie Thompson, MD, the doctor who wrote the comments for this drug guide, was Spencer's physician towards the end of his life. She wrote me, "Spencer made an indelible mark on HIV drug development and his legacy is still very much alive. Just last week, a new patient came to see me and mentioned Spencer as soon as we began to talk. 'I read that you were his doctor. He must have been amazing. I guess, really, I am alive because of him.' My eyes teared to hear a young man with HIV trace his own survival directly to the work of Spencer, and others who fought the Plague."

Nothing is going to take away from Spencer's life work, as one of the youngest activists in the middle of the storm who fought against the U.S. government and the FDA, helping to guide clinical trials to bring drugs to market.

Still, I will always remember Tim breaking down in tears while talking about Spencer's life at a gathering of activists and advocates for people living with HIV, many themselves positive.

"We have a renewed sense of listening to each other more, to understand what it means to be a survivor," Tim told me.

Spencer's work, to find medications and to meet mental health needs, helps so many more people than simply putting drugs into bodies.

"Depression, loneliness, suicidal tendencies … he was the first person calling people together to look at research for this," Matt said. "It's bittersweet." PA

GETTING THE MOST OUT OF YOUR DRUG GUIDE

Understanding HIV treatment doesn't need to be difficult. Below are tips to help give you the knowledge you need to work with your providers to make empowered, informed choices about your treatment. Medications that are included in the 20th Annual HIV Drug Guide are the most commonly used drugs in the U.S. that are FDA approved, as well as those that are expected to be approved this year.

There are several changes to this year's HIV Drug Guide that will improve your experience and the way that you use this guide.

A NEW DRUG ORDER

When we started this guide 20 years ago, we listed drugs in the order they were approved. There have been several variations since then in how drugs have been listed in the guide as new treatments and new classes of drugs became available. Today, with so many good options out there, we highlight those drugs that are the best options and list them first, followed by most commonly prescribed drugs in the five drug classes in alphabetical order. To quickly find your drug, see an alphabetical listing of all the drugs along with their corresponding drug page number on page 14. Older drugs that are no longer used or infrequently prescribed are available only online at positivelyaware.com, and the pages are no longer being updated. This includes some of the oldest HIV drugs that either have intolerable side effects or for which there are better options now available.

RECOMMENDATIONS FOR USE

The Department of Health and Human Services (DHHS) and the International AIDS Society-USA (IAS-USA) both publish recommendations for the use of HIV antiretroviral drugs. These recommendations focus on drug regimens more than single agents, but are essential tools that help providers and individuals choose a regimen that's best suited for them. We include information on some of these recommendations on page 18, at the top of each drug page, as well as the pullout drug chart. DHHS and IAS-USA guidelines are very similar in their recommendations, so for consistency we reference the DHHS guidelines. For the full list of recommendations go to aidsinfo.nih.gov or ias-usa.org/guidelines.

DRUG CLASSES AND CO-FORMULATIONS

A **fixed-dose combination** (FDC) combines two or more drugs in one tablet, such as Prezcobix (darunavir/cobicistat). A **single-tablet regimen (STR)** contains drugs from different classes and is a complete regimen in one pill, such as Triumeq (dolutegravir/lamivudine/abacavir). Atripla, Complera, Genvoya, Stribild, and Triumeq are the five single-tablet regimens that are now available.

When a drug is a **co-formulation** (combination) of different drugs, the generic names will be separated by slashes—for example, Genvoya is the co-formulation of elvitegravir/cobicistat/emtricitabine/TAF.

Remember that anti-HIV drugs should always be taken in combination using two or more drug classes (for example, an integrase inhibitor plus two non-nukes). While not a drug class, **single-tablet regimens (STRs)** are in their own category. STRs are widely used for first-time treatment and for their convenience, but they are not for everybody. For those who are treatment-experienced or have multi-drug resistance, they may not be able to use these STRs and will still have to combine two to three or more single agents from different drug classes, the old-fashioned way.

There are also several non-HIV drugs that are used commonly by people with HIV which are included in this guide. In addition, there is a Truvada for PrEP (pre-exposure prophylaxis, for prevention) page that is available online.

DRUG NAMES

When a drug is in development and before it's approved, it's first given a **"generic" name** (such as dolutegravir), which health care providers may identify it with even after approval. Once it is approved, it's given its **brand name** (Tivicay is the brand name of dolutegravir), which most people know it by. At medical conferences and in publications you will often see three-character abbreviations used (DTG in the case of dolutegravir). A good rule of thumb is, **brand names are always capitalized and generic names are always lower case**. Within each drug's page, you will see the drug referred to by any or all of its names. All of each drug's names appear at the top of its page and also on the pullout drug chart, so if you're confused, look them up there!

Viread (tenofovir) is a drug of special circumstances. It is the only "nuke" that is a nucleotide reverse transcriptase inhibitor, as opposed to nucleoside; however, both types of nukes have a similar mechanism of action. Viread is also in three out of the four single-tablet regimens (STRs) currently available, as well as being one of the two drugs in Truvada, the only drug FDA approved for PrEP. You'll also notice that Viread is referred to by its generic name, tenofovir DF (disoproxil fumarate)—another version, tenofovir alafenamide (TAF), is part of the STR Genvoya. As this issue went to press, two new TAF-containing co-formulations were expected to be approved in the next two months, the single-tablet regimen RPV/FTC/TAF (a new version of Complera containing TAF instead of TDF), and the fixed dose combination F/TAF (a new TAF-based version of Truvada).

DRUG PRICE AND ACCESS

The **Average Wholesale Price** (AWP) is a way to compare costs of drugs. It is not necessarily what you would pay if you had to pay the full retail price.

HIV drugs are not cheap and with all the continuing changes in drug coverage due to the Affordable Care Act (ACA), figuring out how to pay for them can be a challenge. Luckily, there are programs that can help cover all or part of the costs and facilitate access. Of course many of us take drugs for conditions other than HIV, so in our drug co-pay and patient assistance program chart we include information on drugs used to treat HIV as well as several other non-HIV drugs. See page 58.

NAVIGATING YOUR TREATMENT

There is a wealth of information available about HIV and the drugs used to treat it. Knowing where to look and understanding some of the basics will help you sort through it all, giving you peace of mind and the knowledge you need to live a better, healthier life with HIV.

FIND IT ONLINE FAST
YOU CAN EASILY READ ABOUT EACH DRUG ONLINE BY TYPING THE DRUG'S NAME AFTER OUR URL. FOR EXAMPLE, FIND THE DRUG GUIDE'S PAGE FOR ISENTRESS BY TYPING positivelyaware.com/isentress.

HOW HIV MEDS WORK

TREATING HIV REQUIRES A MULTI-PRONGED STRATEGY. DIFFERENT CLASSES OF HIV DRUGS FIGHT THE VIRUS ON DIFFERENT FRONTS

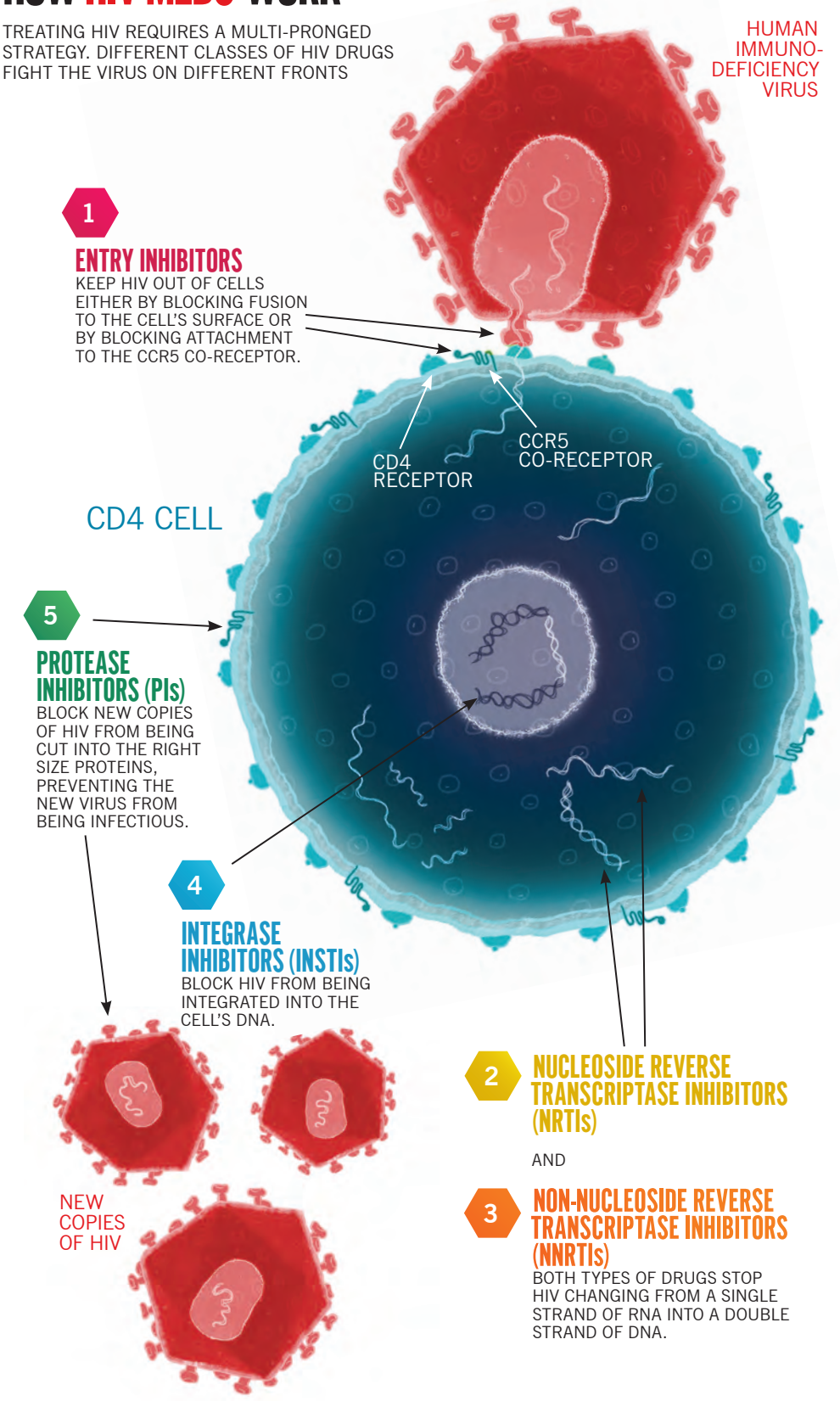

ILLUSTRATION: ABBEY DENLINGER

FIND YOUR HIV DRUG HERE

HIV drugs are grouped into the following categories—plus, one category for select non-HIV drugs.
Drugs listed as ONLINE can be found at positivelyaware.com.

- STR — SINGLE-TABLET REGIMEN
- INSTI — INTEGRASE STRAND TRANSFER INHIBITOR (INTEGRASE INHIBITOR)
- PI — PROTEASE INHIBITOR
- PKE — PHARMACO-KINETIC ENHANCER (BOOSTER)
- NRTI — NUCLEOSIDE / NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITOR ("NUKE")
- NNRTI — NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR ("NON-NUKE")
- EI — ENTRY INHIBITOR
- NON-HIV — NON-HIV DRUG

PAGE	BRAND NAME	GENERIC NAME	DRUG CLASS
ONLINE	Aptivus	tipranavir, or TPV	PI
29	Atripla	efavirenz / emtricitabine / tenofovir, or EFV / FTC / TDF	STR
ONLINE	Combivir	lamivudine / zidovudine, or 3TC / AZT	NRTI
30	Complera	rilpivirine / emtricitabine / tenofovir, or RPV / FTC / TDF	STR
ONLINE	Crixivan	indinavir, or IDV	PI
48	Edurant	rilpivirine, or RPV	NNRTI
43	Emtriva	emtricitabine, or FTC	NRTI
44	Epivir	lamivudine, or 3TC	NRTI
42	Epzicom	abacavir / lamivudine, or ABC / 3TC	NRTI
36	Evotaz	atazanavir / cobicistat, or ATV / COBI	PI/PKE
47	NO BRAND NAME YET	emtricitabine / tenofovir alafenamide, or FTC / TAF	NRTI/NtRTI
ONLINE	Fuzeon	enfuvirtide, T-20, or ENF	EI
26	Genvoya	elvitegravir / cobicistat / emtricitabine / tenofovir alafenamide, or EVG / COBI / FTC / TAF	STR
50	Intelence	etravirine, or ETR	NNRTI
ONLINE	Invirase	saquinavir, or SQV	PI
32	Isentress	raltegravir, or RAL	INSTI
38	Kaletra	lopinavir / ritonavir, or LPV / r	PI
ONLINE	Lexiva	fosamprenavir, or FPV	PI
39	Norvir	ritonavir, or RTV	PI
34	Prezcobix	darunavir / cobicistat, or DRV / COBI	PI/PKE
35	Prezista	darunavir, or DRV	PI
ONLINE	Rescriptor	delavirdine, or DLV	NNRTI
ONLINE	Retrovir	zidovudine, AZT, or ZDV	NRTI
37	Reyataz	atazanavir, or ATV	PI
31	NO BRAND NAME YET	rilpivirine / emtricitabine / tenofovir alfanemide, or RPV / FTC / TAF	STR
51	Selzentry	maraviroc, or MVC	EI
27	Stribild	elvitegravir / cobicistat / emtricitabine / tenofovir, or EVG / COBI / FTC / TDF	STR
49	Sustiva	efavirenz, or EFV	NNRTI
33	Tivicay	dolutegravir, or DTG	INSTI
28	Triumeq	dolutegravir / abacavir / lamivudine, or DTG / ABC / 3TC	STR
ONLINE	Trizivir	abacavir / lamivudine / zidovudine, or ABC / 3TC / AZT	NRTI/NtRTI
41	Truvada	emtricitabine / tenofovir, or FTC / TDF	NRTI/NtRTI
ONLINE	Truvada for PrEP	emtricitabine / tenofovir, or FTC / TDF	NRTI/NtRTI
40	Tybost	cobicistat, or COBI	PKE
ONLINE	Videx EC	didanosine, or ddI	NRTI
ONLINE	Viracept	nelfinavir, or NFV	PI
ONLINE	Viramune XR	nevirapine, or NVP	NNRTI
45	Viread	tenofovir disoproxil fumarate (tenofovir), or TDF	NtRTI
ONLINE	Vitekta	elvitegravir, or EVG	INSTI
ONLINE	Zerit	stavudine, or d4T	NRTI
46	Ziagen	abacavir, or ABC	NRTI
NON-HIV DRUGS			
56	Egrifta	tesamorelin for injection	FOR HIV-RELATED EXCESS BELLY FAT
56	Fulyzaq	crofelemer	FOR HIV/AIDS TREATMENT-ASSOCIATED DIARRHEA
57	Serostim	somatropin (rDNA origin) for injection	FOR HIV-RELATED WASTING

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ANTIRETROVIRAL THERAPY IN 2016

EXPERT GUIDANCE ON CHOOSING A DRUG REGIMEN

BY JOEL GALLANT, MD, MPH

In 2016, we'll continue to see new options for antiretroviral therapy (ART), including more single-tablet regimens (STRs) and simpler regimens for people with treatment experience and drug resistance. In this article, I'll discuss my choices for initial therapy, options for simplification and switching, and drugs in the pipeline.

INITIAL THERAPY

Although there are many options for first-line therapy, in actual practice we use only a few of them. The treatment guidelines from the U.S. Department of Health and Human Services (DHHS) list six "recommended" regimens; five of them contain integrase inhibitors. In trial after trial, the integrase inhibitors are either as good as or better than older regimens, with clear safety and tolerability advantages. When I talk about starting therapy with a treatment-naïve patient who has no baseline drug resistance, the choice of initial regimen generally comes down to four: two STRs and two 2-tablet regimens. Let's start with the STRs. If taking one pill a day is important to you, you'll probably be choosing between Genvoya and Triumeq.

GENVOYA, which includes the integrase inhibitor elvitegravir, is similar to Stribild except that it contains tenofovir alafenamide (TAF) rather than the original version of tenofovir, tenofovir disoproxil fumarate (TDF). TAF gets more tenofovir into cells with lower levels in the blood. As a result, it appears to have less kidney and bone toxicity than TDF. In fact we haven't seen *any* toxicity yet, though it will take time to know whether TAF is completely safe from a kidney and bone standpoint, or just safer than TDF. As I write this, Genvoya is the only approved agent that contains TAF, but that will change soon, as I discuss below. Since Genvoya has advantages over Stribild without any disadvantages or difference in cost, there's no reason to use Stribild anymore unless your insurance company just hasn't gotten around to approving Genvoya yet. The downside is that they both contain cobicistat, a booster that interacts with many other medications. In particular, be aware that cobicistat interacts with fluticasone, including Flonase, a widely used nasal steroid spray that's now available without a prescription.

TRIUMEQ is another effective STR. Like Genvoya, it includes an integrase inhibitor (dolutegravir). Unlike Genvoya, it doesn't need a booster, which means there are fewer drug interactions. Dolutegravir has a higher barrier to resistance than the other two integrase inhibitors. Fortunately, resistance is uncommon with any integrase inhibitor, and extremely unlikely to happen if you're taking your meds. But so far we haven't seen *any* resistance in people taking dolutegravir as part of a complete regimen for initial therapy. Unlike other STRs, Triumeq contains abacavir/lamivudine as its nucleoside "backbone." There is still a lingering debate about whether abacavir increases the risk of heart attack. Current guidelines recommend avoiding abacavir (including Triumeq) if you have heart disease or a lot of risk factors for heart disease. Pre-screening for abacavir hypersensitivity with an HLA-B*5701 test is necessary before starting Triumeq. (See more information on Triumeq under Prezcobix plus F/TAF.)

If taking an STR isn't a priority, let me mention two other regimens you could consider. I discuss them assuming the new TAF-containing version of Truvada (currently referred to as F/TAF) will be approved on schedule in April.

TIVICAY PLUS F/TAF: The problem with the two STRs I discuss above is that each involves a minor compromise. Triumeq has dolutegravir (available separately under the brand name Tivicay), everyone's favorite integrase inhibitor, but it requires taking abacavir, which has some disadvantages over tenofovir, especially now that TAF is available. Genvoya contains F/TAF, everyone's favorite new nucleoside backbone, but requires the cobicistat booster, which has drug interactions. If you want to avoid the compromise altogether, you could take the two-pill combination of F/TAF plus Tivicay (using Truvada plus Tivicay until F/TAF is approved). When I ask my HIV colleagues what they would take if they were HIV-positive, this is often the one they mention.

PREZCOBIX PLUS F/TAF: Protease inhibitors (PIs) used to be the drugs with the highest pill burden and the most side effects, but that's no longer the case. Two PIs, darunavir and atazanavir, are now coformulated with the cobicistat booster (Prezcobix and Evotaz, respectively), which means you can take a PI-based regimen with just two pills per day. They have a few more side effects than integrase inhibitors, but are still well tolerated, and without all the metabolic toxicity that used to come with the older PIs. Of the two, darunavir (either Prezista/Norvir or Prezcobix) is generally preferred over atazanavir (either Reyataz/Norvir or Evotaz) because of its better toxicity and tolerability profile.

It's almost impossible to become resistant to PIs, even with poor adherence. I sometimes choose them when adherence is uncertain: in patients with substance abuse or mental health issues, those who miss a lot of clinic appointments, those with no prior experience taking chronic medications, or the very young. There's always the option of switching to an STR later, once it's clear that nonadherence isn't a problem. In fact, the combination of Prezcobix and F/TAF is being developed as an STR. While I mentioned only F/TAF as the NRTI backbone, Prezcobix can also be combined with Truvada or Epzicom. Dolutegravir-based regimens, including Triumeq, look like they may have the same resistance advantage, although we don't have the many years of experience with dolutegravir that we have with PIs. Still, if a patient with poor adherence insists on an STR, I choose Triumeq.

SWITCHING

We're seeing a lot of data from "switch studies" these days. Drug companies obviously want you to switch from older drugs to their newer ones. Let's talk about when and why you might consider a switch. (Note that this discussion assumes you have an undetectable viral load on your current regimen and no prior drug resistance.) People on older regimens often worry that their combination is no longer "recommended," but the guidelines make it clear that what's no longer recommended for a person starting therapy may be fine for someone who's already taking it without problems. Let's discuss some specific examples.

COMPLERA: It's not on the recommended list because of lower effectiveness at high viral loads and low CD4 counts, the food requirements, and the need to avoid acid-reducing drugs. But it's well tolerated and effective for those who take it correctly. There will be a new TAF-containing version of Complera coming out soon, and it will make sense for someone taking Complera to switch to the new version if possible.

STRIBILD: As I mentioned above, there's no reason not to switch to Genvoya.

TRUVADA: People taking Truvada can switch to F/TAF after it's approved (in combination with a third agent).

ATRIPLA: While I no longer start this regimen because of its neuropsychiatric side effects, I've tended to leave people on Atripla if they're doing well, which means no sleep problems, disturbing dreams, depression, dizziness, or "cloudy thinking." However, unlike Complera, Truvada, and Stribild, there will be no TAF-containing version of Atripla. Many argue that a young person with healthy bones and no evidence of kidney toxicity has no reason to switch from TDF to TAF, but I'd prefer to use the safer form of tenofovir to avoid long-term toxicity. I'm now presenting this to my long-term Atripla patients as another reason to consider a switch. They can switch to one of the other STRs, or, if they love their wild efavirenz dreams, they can switch to F/TAF plus Sustiva.

PREZISTA/NORVIR: If you're taking it once a day, there's no reason not to switch to Prezcobix simply to reduce the number of pills you take. If you're taking it twice a day because of darunavir resistance, Prezcobix is not an option.

REYATAZ/NORVIR: There's no reason not to switch to Evotaz to reduce pill burden.

VIRAMUNE: For toxicity reasons, Viramune is no longer recommended for initial therapy. But since all Viramune toxicity occurs in the first few weeks to months of treatment, it's not necessary to switch if you've been doing well on it for years, unless you'd prefer to be on an STR.

OLDER NUCLEOSIDE ANALOGS: No one should be taking didanosine (ddI) or stavudine (d4T) anymore. I can't think of a reason to use zidovudine (AZT) either.

OLDER PROTEASE INHIBITORS: I can't think of a reason to use any PI other than the two I've mentioned. But if you're a creature of habit, you're happy with what you're taking, have no diarrhea, lipid problems, or blood sugar problems, and you don't mind the extra pills, you could choose to stay the course.

TREATMENT-EXPERIENCED PATIENTS

Before talking about new drugs, let's discuss some simplification options for treatment-experienced people taking what we used to call "salvage regimens." A recent study showed that in treatment-experienced people with drug resistance, switching to a two-pill combination of Genvoya and Prezista was more effective than remaining on the existing, multi-pill combination. However, this regimen isn't for everyone: People who enrolled in this study could have no integrase mutations, no darunavir mutations, and no more than 3 thymidine analog mutations (TAMs). An unstudied regimen that *might* also work in this situation would be Triumeq plus Prezcobix, but if you have drug resistance there are advantages of the F/TAF backbone in **GENVOYA** over the abacavir/lamivudine backbone in Triumeq.

At double the usual dose, **TIVICAY** is sometimes active against virus that's resistant to Isentress and elvitegravir, the integrase inhibitor in Stribild and Genvoya. The more mutations you have, the less likely you are to respond to Tivicay, so don't stay on other integrase inhibitors if they're not keeping your viral load suppressed. Integrase genotypes will tell you whether Tivicay still has activity.

DORAVIRINE, an investigational non-nucleoside reverse transcriptase inhibitor (NNRTI), has activity against common mutations that cause resistance to the existing NNRTIs (Viramune, Sustiva, and probably even Intelence).

Finally, there are **NEW DRUGS IN DEVELOPMENT** with entirely new mechanisms of action. Fostemsavir blocks entry of the virus into the cell by interfering with the attachment of the virus to the CD4 receptor, and ibalizumab is a monoclonal antibody that binds directly to the CD4 receptor. BMS 955176 is a maturation inhibitor that disrupts the final processing of viral proteins. These drugs have promise for people who have run out of other options.

OTHER NRTIs, integrase inhibitors, and protease inhibitors are also being developed, including long-acting drugs that can be given by intermittent injections. For example, the combination of the integrase inhibitor cabotegravir and a long-acting version of rilpivirine (Edurant) is being given by intermittent injection in clinical trials, and cabotegravir is also being studied as an injectable PrEP agent.

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KEEPING STANDARDS

DHHS HIV TREATMENT GUIDELINES FOR FIRST-TIME THERAPY

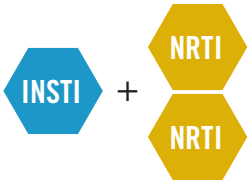
KEY TO ACRONYMS

3TC: lamivudine
ABC: abacavir
ARV: antiretroviral
ATV/COBI: cobicistat-boosted atazanavir
ATV/r: ritonavir-boosted atazanavir
CrCl: creatinine clearance
DRV/COBI: cobicistat-boosted darunavir
DRV/r: ritonavir-boosted darunavir
DTG: dolutegravir
EFV: efavirenz
EVG/COBI/FTC/TDF: elvitegravir/cobicistat/emtricitabine/tenofovir DF
EVG/COBI/FTC/TAF: elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide
FTC: emtricitabine
INSTI: integrase strand transfer inhibitor
LPV/r: ritonavir-boosted lopinavir
NNRTI: non-nucleoside reverse transcriptase inhibitor
NRTI: nucleoside reverse transcriptase inhibitor
PI: protease inhibitor
RAL: raltegravir
RPV: rilpivirine
RTV: ritonavir
TAF: tenofovir alafenamide
TDF: tenofovir disoproxil fumarate

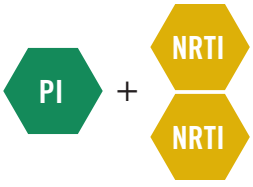
A regimen should be individualized on the basis of virologic efficacy (suppression of viral load to less than 50 copies per mL), toxicity, pill burden, dosing frequency, drug-drug interaction potential, resistance testing results, comorbid conditions (such as kidney disease, hepatitis B or C, etc.), and cost. More details including the strength of each recommendation and those for pregnant women are in the documents from the U.S. Department of Health and Human Services (DHHS) online. AIDSinfo has mobile applications that allow access to federally approved HIV/AIDS treatment and research information and are offered free of charge, including a new Guidelines app, at aidsinfo.nih.gov/apps.

Most patients new to antiretroviral therapy

should start on one of six regimens, based on two types of combination regimens:



INSTI-BASED REGIMEN:
One INSTI drug with two NRTIs



PI-BASED REGIMEN:
One boosted protease inhibitor and two NRTIs

RECOMMENDED REGIMEN OPTIONS

INSTI-baseD:
Genvoya (EVG/COBI/FTC/TAF)[2]
Isentress (RAL) + **Truvada** (FTC/TDF)[1]
Stribild (EVG/COBI/FTC/TDF)[3]
Triumeq (DTG/ABC/3TC)[4]
Tivicay (DTG) + **Truvada** (FTC/TDF)[1]

PI-BASED:
Boosted **Prezista** (DRV/r)
+ **Truvada** (FTC/TDF)[1]

ALTERNATIVE REGIMEN OPTIONS

Regimens that are effective and tolerable, but that have potential disadvantages when compared with the recommended regimens listed above, have limitations for use in certain patient populations, or have less supporting data from randomized clinical trials. An alternative regimen may be the preferred regimen for some patients.

NNRTI-BASED REGIMEN:
Atripla (EFV/FTC/TDF)[1]
Complera (RPV/FTC/TDF)[1,5]

PI-BASED REGIMEN:
Evotaz (ATV/COBI) + **Truvada** (FTC/TDF)[1]

Boosted **Reyataz** (ATV/r) + **Truvada** (FTC/TDF)[1]

Boosted Prezista (DRV/r or DRV/COBI) + Epzicom (ABC/3TC)[1,3,4]

Prezcobix (DRV/COBI) + Truvada (FTC/TDF)[1,3]

OTHER ANTIRETROVIRAL REGIMEN OPTIONS

Regimens that, in comparison with Recommended and Alternative regimens, may have reduced virologic activity, limited supporting data from large comparative clinical trials, or other factors such as greater toxicities, higher pill burden, drug interaction potential, or limitations for use in certain patient populations.

INSTI-BASED REGIMEN:
Isentress (RAL) + **Epzicom** (ABC/3TC)[1,4]

NNRTI-BASED REGIMEN:
Sustiva (EFV) + **Epzicom** (ABC/3TC)[1,4,6]

PI-BASED REGIMEN:
Boosted **Reyataz** (ATV/COBI or ATV/r) + **Epzicom** (ABC/3TC)[1,4,6]

Kaletra LPV/r (once[7] or twice daily) + **Epzicom** (ABC/3TC)[1,4]

Kaletra LPV/r (once[7] or twice daily) + **Truvada** (FTC/TDF)[1]

1 3TC may be substituted for FTC, or vice versa.
2 Only for patients with pre-antiretroviral therapy CrCl ≥30 mL/min
3 Only for patients with pre-antiretroviral therapy CrCl ≥70 mL/min
4 Only for patients who are HLA-B*5701 negative
5 Only for patients with pre-treatment HIV RNA <100,000 copies/mL and CD4 cell count >200 cells/mm^3
6 Only for patients who are HLA-B*5701 negative and with pre-treatment HIV RNA <100,000 copies/mL
7 Once-daily LPV/r is not recommended for pregnant patients.

THESE COMBINATIONS ARE AMONG THOSE AVAILABLE AS CO-FORMULATED FIXED DOSE COMBINATIONS:

ABC/3TC **(Epzicom)**

ATV/COBI **(Evotaz)**

DRV/COBI **(Prezcobix)**

DTG/ABC/3TC **(Triumeq)**

EFV/FTC/TDF **(Atripla)**

EVG/COBI/FTC/TAF **(Genvoya)**

EVG/COBI/FTC/TDF **(Stribild)**

FTC/TDF **(Truvada)**

LPV/r **(Kaletra)**

RPV/FTC/TDF **(Complera)**

* **Panel on Antiretroviral Guidelines for Adults and Adolescents.** Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL.pdf. Accessed January 28, 2016, page F-3, Table 6.

THE ART OF TREATING

A LOOK AT THE BENEFITS OF ANTIRETROVIRAL THERAPY AND RECOMMENDATIONS

Without HIV medications, known as antiretroviral therapy (ART), most people living with HIV will go on to develop severe depletion of their CD4 (T cells), leading to AIDS-related illnesses and premature death. The recommendations on when to start someone on ART and what to treat with has changed over the years due to both availability of strong evidence and potent drug options with minimal side effects.

The Department of Health and Human Services (DHHS) makes guidelines and recommendations on when to treat and what to treat with. Historically, individuals newly diagnosed with HIV present to care already with low CD4 count, and we started ART based on his or her CD4 level.

However, we know that durable viral suppression (being undetectable) using ART improves immune function, reduces the risk for complications and illnesses, and prolongs life. Furthermore, starting someone on ART early while their CD4 is still high better preserves the immune system and allows for more robust CD4 recovery. How well your CD4 bounces back is directly related to your CD4 level when ART is started. That is to say, the higher your CD4 is at the start of treatment, the better CD4 preservation and improvement you will see. Many people who start ART when their CD4 is too low do not see significant CD4 improvements at all, even years after they've been on treatment. For these reasons, individuals vulnerable to HIV infection should get tested regularly and be connected to care as soon as possible if a positive diagnosis is made.

TREATMENT FOR ALL

The DHHS panel has recommended starting ART in all individuals, regardless of CD4 count at diagnosis, since 2012. However, the strength of the recommendation differed based on a person's CD4 level because at that time, we didn't have enough evidence to make a strong recommendation to start ART in people with CD4 above 500 cells/mm^3. Recently, results from two large randomized controlled trials (the strongest type of study) definitively demonstrate the benefits of starting ART in those with high CD4 count.

The START and TEMPRANO studies randomized HIV-positive participants to two groups: one group received ART immediately when their CD4 count was still high (more than 500 cells/mm^3), and ART was delayed in the second group until their CD4 level dropped. In both studies, there was about a 50% reduction in morbidity and mortality (AIDS and non-AIDS related illnesses or serious events, and death) among individuals who received ART immediately versus those

HIV

who deferred treatment. The results from these studies allowed the panel to make strong recommendations to start ART in all individuals with HIV regardless of CD4 count.

REDUCING TRANSMISSION

Beyond the benefits to the individual living with HIV, viral suppression using ART significantly reduces the risk of transmission to HIV-negative partners.

The HPTN 052 study of serodiscordant couples (when one partner is HIV-negative and the other HIV-positive) showed a 96% reduction in risk of HIV transmission when the HIV-positive partner is on treatment. Most of the couples in the study were heterosexual.

In the PARTNER study, which included a good number of MSM serodiscordant couples, investigators found no cases of transmission. However, it does not mean that transmission cannot occur, especially for the most risky act (condomless receptive anal intercourse with ejaculation); but the investigators concluded that the risk is very low.

The PARTNER 2 study is underway which will hopefully give more precise estimates of transmission risk in the MSM population. Even though the results of these studies are dramatic, safer sex methods should be practiced, and additional information regarding HIV transmission can be found at aidsinfo.nih.gov.

STARTING THERAPY

The decision to initiate ART should be a conversation between you and your provider, taking into account the known benefits of starting early. The DHHS panel noted that the decision should always include consideration of an individual's other medical conditions and his or her willingness and readiness to initiate therapy. The success of ART is highly dependent on adherence to therapy.

The newer regimens, those recommended by the panel, are well tolerated in general. However, each person may react differently to the same medicine, and some side effects are more common than others. While taking medications, discuss any physical changes or new symptoms with your doctor and pharmacist. Some side effects can be managed or controlled, while others require intervention or medication changes. Some side effects are rare.

One potential reaction when someone starts ART is known as immune reconstitution inflammatory syndrome (IRIS), which may occur as the immune system regains strength and viral load drops following initiation of therapy. Low CD4 at the start of treatment is a risk factor for IRIS, another reason why you should start early. Symptoms of illnesses such as shingles and tuberculosis should be reported to a health care provider immediately. See drug page or package insert for more information. **—BY DR. CHRIS M. NGUYEN**

PHOTO: ISTOCKPHOTO

Genvoya™

elvitegravir 150mg/cobicistat 150mg/emtricitabine 200mg/tenofovir alafenamide 10mg tablets

New Genvoya® is now available

GILEAD

Actual Size

One pill contains
elvitegravir, cobicistat, emtricitabine,
and tenofovir alafenamide (TAF).

Ask your healthcare provider if GENVOYA is right for you.

To learn more visit
GENVOYA.com

Please see Brief Summary of Patient Information with important warnings on the following pages.

Brief Summary of Patient Information about GENVOYA

GENVOYA (jen-VOY-uh)
(elvitegravir, cobicistat, emtricitabine, and tenofovir alafenamide) tablets

Important: Ask your healthcare provider or pharmacist about medicines that should not be taken with GENVOYA.

There may be new information about GENVOYA. This information is only a summary and does not take the place of talking with your healthcare provider about your medical condition or treatment.

What is the most important information I should know about GENVOYA?

GENVOYA can cause serious side effects, including:

- **Build-up of lactic acid in your blood (lactic acidosis).** Lactic acidosis may happen in some people who take GENVOYA. Lactic acidosis is a serious medical emergency that can lead to death. Lactic acidosis can be hard to identify early, because the symptoms could seem like symptoms of other health problems. **Call your healthcare provider right away if you get any of the following symptoms, which could be signs of lactic acidosis:**
  - feel very weak or tired
  - have unusual (not normal) muscle pain
  - have trouble breathing
  - have stomach pain with nausea or vomiting
  - feel cold, especially in your arms and legs
  - feel dizzy or lightheaded
  - have a fast or irregular heartbeat
- **Severe liver problems.** Severe liver problems may happen in people who take GENVOYA. In some cases, these liver problems can lead to death. Your liver may become large and you may develop fat in your liver.

  Call your healthcare provider right away if you get any of the following symptoms of liver problems:
  - your skin or the white part of your eyes turns yellow (jaundice)
  - dark "tea-colored" urine
  - light-colored bowel movements (stools)
  - loss of appetite for several days or longer
  - nausea
  - stomach pain
- **You may be more likely to get lactic acidosis or severe liver problems if you are female, very overweight (obese), or have been taking GENVOYA for a long time.**
- **Worsening of Hepatitis B infection.** GENVOYA is not for use to treat chronic hepatitis B virus (HBV). If you have HBV infection and take GENVOYA, your HBV may get worse (flare-up) if you stop taking GENVOYA. A "flare-up" is when your HBV infection suddenly returns in a worse way than before.
  - Do not run out of GENVOYA. Refill your prescription or talk to your healthcare provider before your GENVOYA is all gone.
  - Do not stop taking GENVOYA without first talking to your healthcare provider.
  - If you stop taking GENVOYA, your healthcare provider will need to check your health often and do blood tests regularly for several months to check your HBV infection. Tell your healthcare provider about any new or unusual symptoms you may have after you stop taking GENVOYA.

What is GENVOYA?

GENVOYA is a prescription medicine that is used without other HIV-1 medicines to treat HIV-1 in people 12 years of age and older:

- who have not received HIV-1 medicines in the past **or**
- to replace their current HIV-1 medicines in people who have been on the same HIV-1 medicines for at least 6 months, have an amount of HIV-1 in their blood ("viral load") that is less than 50 copies/mL, and have never failed past HIV-1 treatment

HIV-1 is the virus that causes AIDS.

GENVOYA contains the prescription medicines elvitegravir (VITEKTA®), cobicistat (TYBOST®), emtricitabine (EMTRIVA®) and tenofovir alafenamide.

It is not known if GENVOYA is safe and effective in children under 12 years of age.

When used to treat HIV-1 infection, GENVOYA may:

- Reduce the amount of HIV-1 in your blood. This is called "viral load".
- Increase the number of CD4+ (T) cells in your blood that help fight off other infections.

Reducing the amount of HIV-1 and increasing the CD4+ (T) cells in your blood may help improve your immune system. This may reduce your risk of death or getting infections that can happen when your immune system is weak (opportunistic infections).

GENVOYA does not cure HIV-1 infection or AIDS. You must stay on continuous HIV-1 therapy to control HIV-1 infection and decrease HIV-related illnesses.

Avoid doing things that can spread HIV-1 infection to others:

- Do not share or re-use needles or other injection equipment.
- Do not share personal items that can have blood or body fluids on them, like toothbrushes and razor blades.
- Do not have any kind of sex without protection. Always practice safer sex by using a latex or polyurethane condom to lower the chance of sexual contact with semen, vaginal secretions, or blood.

Ask your healthcare provider if you have any questions about how to prevent passing HIV-1 to other people.

Who should not take GENVOYA?

Do not take GENVOYA if you also take a medicine that contains:

- alfuzosin hydrochloride (Uroxatral®)
- carbamazepine (Carbatrol®, Epitol®, Equetro®, Tegretol®, Tegretol-XR®, Teril®)
- cisapride (Propulsid®, Propulsid Quicksolv®)
- ergot-containing medicines, including: dihydroergotamine mesylate (D.H.E. 45®, Migranal®), ergotamine tartrate (Cafergot®, Migergot®, Ergostat®, Medihaler Ergotamine®, Wigraine®, Wigrettes®), and methylergonovine maleate (Ergotrate®, Methergine®)
- lovastatin (Advicor®, Altoprev®, Mevacor®)
- midazolam, when taken by mouth
- phenobarbital (Luminal®)
- phenytoin (Dilantin®, Phenytek®)
- pimozide (Orap®)
- rifampin (Rifadin®, Rifamate®, Rifater®, Rimactane®)
- sildenafil (Revatio®), when used for treating lung problems
- simvastatin (Simcor®, Vytorin®, Zocor®)
- triazolam (Halcion®)
- the herb St. John's wort or a product that contains St. John's wort

What should I tell my healthcare provider before taking GENVOYA?

Before taking GENVOYA, tell your healthcare provider if you:

- have liver problems including hepatitis B infection
- have kidney or bone problems
- have any other medical conditions
- are pregnant or plan to become pregnant. It is not known if GENVOYA can harm your unborn baby. Tell your healthcare provider if you become pregnant while taking GENVOYA.

  Pregnancy registry: there is a pregnancy registry for women who take HIV-1 medicines during pregnancy. The purpose of this registry is to collect information about the health of you and your baby. Talk with your healthcare provider about how you can take part in this registry.
- are breastfeeding or plan to breastfeed. Do not breastfeed if you take GENVOYA.
  - You should not breastfeed if you have HIV-1 because of the risk of passing HIV-1 to your baby.
  - At least one of the medicines in GENVOYA can pass to your baby in your breast milk. It is not known if the other medicines in GENVOYA can pass into your breast milk.
  - Talk with your healthcare provider about the best way to feed your baby.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. Other medicines may affect how GENVOYA works. Some medicines may interact with GENVOYA. **Keep a list of your medicines and show it to your healthcare provider and pharmacist when you get a new medicine.**

- You can ask your healthcare provider or pharmacist for a list of medicines that interact with GENVOYA.
- Do not start a new medicine without telling your healthcare provider. Your healthcare provider can tell you if it is safe to take GENVOYA with other medicines.

How should I take GENVOYA?

- Take GENVOYA exactly as your healthcare provider tells you to take it. GENVOYA is taken by itself (not with other HIV-1 medicines) to treat HIV-1 infection.
- GENVOYA is usually taken 1 time each day.
- Take GENVOYA with food.
- If you need to take a medicine for indigestion (antacid) that contains aluminum and magnesium hydroxide or calcium carbonate during treatment with GENVOYA, take it at least 2 hours before or after you take GENVOYA.
- Do not change your dose or stop taking GENVOYA without first talking with your healthcare provider. Stay under a healthcare provider's care when taking GENVOYA.
- Do not miss a dose of GENVOYA.
- If you take too much GENVOYA, call your healthcare provider or go to the nearest hospital emergency room right away.
- When your GENVOYA supply starts to run low, get more from your healthcare provider or pharmacy. This is very important because the amount of virus in your blood may increase if the medicine is stopped for even a short time. The virus may develop resistance to GENVOYA and become harder to treat.

What are the possible side effects of GENVOYA?

GENVOYA may cause serious side effects, including:

- **See "What is the most important information I should know about GENVOYA?"**
- **Changes in body fat can happen in people who take HIV-1 medicine.** These changes may include increased amount of fat in the upper back and neck ("buffalo hump"), breast, and around the middle of your body (trunk). Loss of fat from the legs, arms and face may also happen. The exact cause and long-term health effects of these conditions are not known.
- **Changes in your immune system** (Immune Reconstitution Syndrome) can happen when you start taking HIV-1 medicines. Your immune system may get stronger and begin to fight infections that have been hidden in your body for a long time. Tell your healthcare provider right away if you start having any new symptoms after starting your HIV-1 medicine.
- **New or worse kidney problems, including kidney failure.** Your healthcare provider should do blood and urine tests to check your kidneys before you start and while you are taking GENVOYA. Your healthcare provider may tell you to stop taking GENVOYA if you develop new or worse kidney problems.
- **Bone problems** can happen in some people who take GENVOYA. Bone problems may include bone pain, softening or thinning (which may lead to fractures). Your healthcare provider may need to do tests to check your bones.

The most common side effect of GENVOYA is nausea.

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

- These are not all the possible side effects of GENVOYA. For more information, ask your healthcare provider or pharmacist.
- Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

General information about the safe and effective use of GENVOYA.

Medicines are sometimes prescribed for purposes other than those listed in a Patient Information leaflet. Do not use GENVOYA for a condition for which it was not prescribed. Do not give GENVOYA to other people, even if they have the same symptoms you have. It may harm them.

This Brief Summary summarizes the most important information about GENVOYA. If you would like more information, talk with your healthcare provider. You can ask your healthcare provider or pharmacist for information about GENVOYA that is written for health professionals.

For more information, call **1-800-445-3235** or go to **www.GENVOYA.com.**

Keep GENVOYA and all medicines out of reach of children.

Issued: November 2015

Genvoya™
elvitegravir 150mg/cobicistat 150mg/emtricitabine 200mg/tenofovir alafenamide 10mg tablets

GILEAD

Genvoya

elvitegravir/cobicistat/emtricitabine/
tenofovir alafenamide, or EVG/COBI/FTC/TAF

STR SINGLE-TABLET REGIMEN
BOOSTED INSTI AND NRTIs

DHHS RECOMMENDED
FOR FIRST-LINE USE

STANDARD DOSE

One tablet (150 mg elvitegravir / 150 mg cobicistat / 200 mg emtricitabine / 10 mg tenofovir alafenamide) once daily with food, in adults and children 12 years of age and older weighing at least 77 lbs (35 kg).

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Genvoya is not recommended for people with severe kidney problems (CrCl less than 30 mL/minute) or severe liver problems.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$3,244.78 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Genvoya: Emtriva and Tybost (elvitegravir and TAF are not marketed separately). Common side effects seen in at least 5% of study participants include nausea, diarrhea, headache, and fatigue. Cobicistat can cause a small, reversible increase in kidney function test (serum creatinine) within the first few weeks of treatment without affecting actual kidney function (see Tybost for more, and reassuring, information).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with Stribild, Atripla, Combivir, Complera, Emtriva, Epivir, Epivir-HBV, Epzicom, Hepsera, Isentress, Kaletra, Norvir, Tivicay, Triumeq, Trizivir, Truvada, Tybost, or Viread, since these medications are already in this drug or it has equivalent medications. Separate by at least 2 hours from antacids containing aluminum, magnesium hydroxide, or calcium carbonate. Safe to take with other medications used for heartburn and GERD such as Nexium, Pepcid, Prevacid, Prilosec, Tagamet, and Zantac. Cobicistat has many drug interactions similar to those seen with Norvir. Do not take with cholesterol-lowering drugs containing lovastatin or simvastatin (Advicor, Altoprev, Mevacor, Simcor, Vytorin, Zocor), alfuzosin, carbamazepine, phenobarbital, phenytoin, ergotamine, dihydroergotamine, methylergonovine, oral midazolam, pimozide, Revatio, rifampin, rifabutin, rifapentine, Serevent, triazolam, or St. John's wort. Dose of clarithromycin may need to be reduced based on kidney function. An alternative corticosteroid to systemic dexamethasone should be considered. Risks vs. benefits of using with voriconazole should be assessed. Cholesterol-lowering drugs such as atorvastatin should be used with caution and started at the lowest dose possible. Monitor closely for increased side effects from these medications, such as muscle pain. Concentrations of antidepressants such as trazodone or fluoxetine may be increased, and their doses may need to be reduced. Use with caution and therapeutic monitoring, if available, for antiarrhythmic drugs like digoxin. Genvoya increases levels of nasal/inhaled fluticasone (found in Advair, Flonase, and Flovent) which may lead to symptoms of Cushing's syndrome (such as rounded face). An alternative corticosteroid is recommended. Use caution with beta blockers and calcium channel blockers. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Effectiveness of birth control pills may be decreased; consider using alternative contraception methods. Use with caution with bosentan and immunosuppressants like Prograf, Gengraf, Neoral, and Sandimmune. Taking with Olysio, Viekira Pak, or Zepatier is not recommended.

MORE INFORMATION

Genvoya was recently approved by the FDA, and is the new version of Stribild. Instead of TDF, however, this medication contains TAF. It is the only single-tablet regimen that can be given to people with impaired kidney function. A study in hemodialysis is underway. In clinical trials, less kidney and bone issues were seen with TAF versus TDF. The TAF substitution also allows Genvoya to be used with the hepatitis C medication Harvoni, which is not recommended with Stribild. Genvoya was studied in patients with kidney impairment and was found to be safe and effective in people with CrCl equal to or greater than 30 mL/min. It was also studied in adolescents between 12–18 years of age, and was found to be as effective in getting this patient population to undetectable viral loads as in adults. In two clinical trials comparing Genvoya to Stribild in treatment-naïve patients, Genvoya was non-inferior to Stribild in keeping patients undetectable after 48 weeks. Genvoya also has an FDA indication (use) for people switching from another HIV regimen if they have a viral load less than 50 on a stable regimen and no history of drug resistance to the medications in Genvoya or treatment failure. The indication was granted based on a switch study showing that Genvoya was non-inferior in people with undetectable viral load changing from Atripla, Stribild, or boosted Reyataz/Truvada. People should be checked for hepatitis B before starting therapy (see Emtriva and Viread).

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Elvitegravir/cobicistat/FTC/TAF represents the first FDA approval for the "TAF Family," a group of combination drugs (see FTC/TAF and RPV/FTC/TAF) that substitute tenofovir alafenamide (TAF) for tenofovir disoproxil fumarate (TDF). TAF and TDF are prodrugs that are converted to tenofovir inside the body. The benefit of TAF is that it delivers tenofovir primarily inside the target cells instead of releasing it in the blood where it is delivered to undesirable sites like kidney and bone, causing bystander toxicity. In fact, studies show less kidney and bone toxicity with E/C/F/TAF compared with E/C/F/TDF (Stribild) and the drug is approved for people with moderate impairment of kidney function (creatinine clearance at least 30 ml/min). When switching from E/C/F/TDF to E/C/F/TAF, improvements were seen both in bone density and kidney markers. Note, however, that the risk of bone and kidney side effects with TAF is less than with TDF, but not entirely absent. It is not yet clear whether E/C/F/TAF is desirable for use by persons with substantial kidney or bone impairment. Also, both "bad" LDL and "good" HDL cholesterol are higher with TAF than with TDF, and it is not known whether this is clinically important. As with all cobicistat-containing regimens, watch out for drug interactions, and expect a small increase in blood creatinine level that does not mean a change in kidney function. Patients co-infected with hepatitis B (HBV) and stable on E/C/F/TDF also were stable and virally suppressed when switched to E/C/F/TAF. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Clinical trials have shown that TAF reaches higher levels of drug in the cell with less dosing compared to TDF. This translates into a safer yet more potent drug. The potential for kidney damage and loss of bone density are reduced with Genvoya because of TAF. Cobicistat or COBI can cause stomach discomfort. —MOISÉS AGOSTO-ROSARIO

Stribild

elvitegravir/cobicistat/emtricitabine/tenofovir DF, or EVG/COBI/FTC/TDF

STR SINGLE-TABLET REGIMEN INSTI and NRTIs

DHHS RECOMMENDED FOR FIRST-LINE USE

STANDARD DOSE

One tablet (150 mg elvitegravir / 150 mg cobicistat / 200 mg emtricitabine / 300 mg tenofovir disoproxil fumarate) once daily with food.

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems. Stribild should not be started in individuals with estimated creatinine clearance (CrCl) less than 70 mL/minute and should be discontinued if CrCl decreases to less than 50 mL/minute.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$3,244.78 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Stribild: Emtriva, Viread, and Tybost (elvitegravir is not marketed separately). Common side effects seen in 10% or more of study participants include nausea and diarrhea. Other less common side effects include abnormal dreams and headache. Small changes in kidney function tests can be seen during the first few weeks of treatment, but these changes do not affect actual kidney function (see Tybost for more, and reassuring, information).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with Atripla, Combivir, Complera, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Isentress, Kaletra, Norvir, Tivicay, Triumeq, Trizivir, Truvada, Tybost, or Viread, since these medications are already in Stribild or it has equivalent medications. Separate by at least 2 hours from antacids containing aluminum, magnesium hydroxide, or calcium carbonate. Stribild is safe to take with other medications used for heartburn and GERD such as Nexium, Pepcid, Prevacid, Prilosec, Tagamet, and Zantac. Cobicistat has many drug interactions similar to those seen with Norvir. Do not take Stribild with cholesterol-lowering drugs containing lovastatin or simvastatin (Advicor, Altoprev, Mevacor, Simcor, Vytorin, Zocor), alfuzosin, carbamazepine, phenobarbital, phenytoin, ergotamine, dihydroergotamine, methylergonovine, oral midazolam, pimozide, Revatio, rifampin, rifabutin, Serevent, triazolam, or St. John's wort. Risks vs. benefits of using Stribild and voriconazole together should be assessed. Cholesterol-lowering drugs such as rosuvastatin and atorvastatin should be used with caution and started at the lowest dose possible. Monitor closely for increased side effects from these medications, such as muscle pain. Concentrations of antidepressants such as trazodone or fluoxetine may be increased by Stribild, and their doses may need to be reduced. Use with caution and therapeutic monitoring, if available, for antiarrhythmic drugs like digoxin. Stribild increases levels of nasal/inhaled fluticasone (found in Advair, Flonase, and Flovent) which may lead to symptoms of Cushing's syndrome (such as rounded face). An alternative corticosteroid is recommended. Use caution with beta blockers and calcium channel blockers. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Effectiveness of birth control pills may be decreased; consider using alternative contraception methods. Use with caution with bosentan and immunosuppressants like Prograf, Gengraf, Neoral, and Sandimmune. Reduce Daklinza dose to 30 mg. Taking with Harvoni, Olysio, Viekira Pak, or Zepatier is not recommended.

MORE INFORMATION

Stribild is a DHHS-recommended regimen for HIV treatment-naïve people with CrCl (creatinine clearance) equal to or greater than 70 mL/min. Data through 144 weeks confirmed that Stribild remained non-inferior to Atripla and Norvir-boosted Reyataz with Truvada. Stribild also has an FDA indication (use) for people switching from another HIV regimen if they have a viral load less than 50 on a stable therapy and no history of drug resistance to the medications in Stribild or treatment failure. The indication was granted based on two switch studies showing that Stribild was non-inferior in people with undetectable viral load changing their PI/Truvada or NNRTI/Truvada regimen. Stribild should not be started in people with severe liver impairment or impaired kidney function (creatinine clearance less than 70 mL per minute), due to the increased potential for toxicity from combining cobicistat with TDF. People should be checked for hepatitis B before starting therapy (see Emtriva and Viread).

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Ditto what was said for Genvoya, add a little renal and bone toxicity, and subtract a little cholesterol, and you have Stribild (E/C/F/TDF), the first four-drug combination regimen ever licensed. Some were surprised that Gilead was willing to cannibalize its own drug so quickly with the TAF-containing four-drug regimen. The emergence of TAF, however, was driven by the impending loss of brand protection for TDF, the ability to use smaller doses of TAF to facilitate new boosted combination regimens, and, of course, safety. As long as the drugs are neutrally priced, most will likely choose the TAF compound.
—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Stribild is comprised of four drugs—three very potent antiretrovirals and a boosting agent known as cobicistat. The advantage of once-a-day single-tablet regimens is that they make adherence easier. HIV drug regimens are reduced to one pill once a day. Those taking them must discuss the side effects of each one of the drugs with their doctors. The four drugs in Stribild are almost the same in Genvoya; the difference is that Stribild does not contain the new and improved version of tenofovir, tenofovir alafenamide fumarate (TAF). Stribild is proven to be effective and it is strongly recommended for those starting treatment for the first time and patients who need to switch regimens. Patients taking Stribild could still experience kidney toxicity and bone loss density due to tenofovir's old version: tenofovir disoproxil fumarate or TDF. As a boosting agent, cobicistat acts very similar to ritonavir, affecting liver enzymes that can change the amount of other drugs in the bloodstream. Therefore drug-drug interactions associated with the liver enzymes could occur. —MOISÉS AGOSTO-ROSARIO

Triumeq

dolutegravir/abacavir/lamivudine, or DTG/ABC/3TC

STR SINGLE-TABLET REGIMEN INSTI and NRTIs

DHHS RECOMMENDED FOR FIRST-LINE USE

STANDARD DOSE

One tablet (50 mg dolutegravir / 600 mg abacavir / 300 mg lamivudine) once a day, with or without food, for people with no evidence of INSTI resistance. An additional 50 mg dose of dolutegravir (brand name Tivicay) separated by 12 hours from Triumeq is required for people who have resistance to Isentress or elvitegravir (found in Stribild), or are taking certain other medications (Aptivus/Norvir, Lexiva/Norvir, rifampin, carbamazepine, or Sustiva).

Take missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney or liver problems so Triumeq should not be used in people with kidney impairment (CrCl less than 50 ml/min) or liver impairment.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$2,753.44 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Triumeq: Tivicay, Ziagen, and Epivir. Triumeq is in general well tolerated. Most common side effects that occurred in 2–3% of study subjects are insomnia, headache, and fatigue. A small increase in serum creatinine may be seen, but is only a benign laboratory finding and not a sign of kidney toxicity. Conflicting data suggest a small risk for heart problems when using abacavir-containing regimens in people with high blood pressure, high cholesterol, diabetes, smoking, or a previous heart attack or stroke. The risk should be considered and action taken to reduce risk factors, if possible, before starting treatment. Monitor for signs of hypersensitivity reaction (HSR) to abacavir (may include fever, rash, nausea, vomiting, diarrhea, abdominal pain, fatigue, muscle or joint aches, difficulty breathing, blisters, sores in the mouth, skin peeling, facial swelling, cough, or sore throat), especially in the first six weeks after starting therapy. All individuals prior to starting Triumeq should be given a blood test for HLA-B*5701 (a genetic marker) to identify patients at risk for this reaction. This test is covered by most insurance and also by LabCorp/ViiV (see co-pay chart, page 58). Symptoms of HSR usually worsen, very slowly, with each dose. If HSR occurs or is suspected, Triumeq should be discontinued immediately, and a patient should never be given an abacavir-containing medication again (rechallenged). Liver enzymes should be monitored in people with hepatitis B or C. Stop taking Triumeq if you experience signs of liver problems (yellowing of the skin or whites of the eyes, dark or tea-colored urine, pale-colored bowel movements, nausea or vomiting, loss of appetite, or tenderness on the right side below the ribs).

POTENTIAL DRUG INTERACTIONS

See the individual drugs contained in Triumeq: Tivicay, Ziagen, and Epivir. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with the anti-arrhythmic dofetilide (Tikosyn), due to the potential for serious or life-threatening reaction. Do not take Triumeq with Atripla, Combivir, Complera, Emtriva, Epivir, Epivir-HBV, Epzicom, Isentress, Stribild, Tivicay (unless required), Trizivir, Truvada, Vitekta, or Ziagen, since these medications are already in Triumeq or they have equivalent medications. Triumeq should not be taken with Viramune. Intelence decreases dolutegravir levels by 88%, so your HIV provider would also need to prescribe Kaletra, boosted Prezista, or boosted Reyataz. Triumeq should be taken two hours before or six hours after taking antacids (like Maalox), the ulcer medication Carafate, iron or calcium supplements, or buffered medications. These medications reduce the absorption of dolutegravir; however, Triumeq can be taken together with iron- or calcium-containing supplements if taken with food. Other acid reducers/heartburn medications (like Prilosec, Pepcid, Zantac, Prevacid) are okay to use. Avoid taking with some seizure medicines (oxcarbazepine, phenobarbital, and phenytoin) and St. John's wort. Metformin levels are increased by dolutegravir; limit metformin dose to 1,000 mg/day. Monitor blood sugar when Triumeq and metformin are started or when Triumeq is discontinued.

MORE INFORMATION

Triumeq was FDA approved in 2014. See the individual drugs contained in Triumeq—Tivicay, Ziagen, and Epivir as well as Epzicom (Ziagen/Epivir)—for more information. Triumeq is one of the recommended initial regimens in U.S. HIV treatment guidelines. Based on the current data, Triumeq appears to be an exciting addition to the current antiretrovirals. It gives us another single-tablet complete regimen. Dolutegravir in studies thus far seems to have a high barrier to resistance similar to protease inhibitors. Triumeq has relatively few drug interactions and is well tolerated. Check for hepatitis B before starting therapy and if Triumeq is discontinued monitor hepatitis B (HBV) closely (see Epivir).

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Dolutegravir/abacavir/3TC is the only approved once daily, single-tablet integrase inhibitor regimen that does not require pharmacokinetic boosting, thus diminishing the number of drug interactions. There are, however, some drug interactions of note. Triumeq should not be taken with dofetilide, a drug used for atrial fibrillation, and should not be combined with etravirine (Intelence). Dolutegravir causes a slight increase in blood creatinine levels without affecting kidney function, similar to cobicistat. Recently, suicidal ideation and suicide attempts, as well as lesser central nervous system side effects, have been recognized with dolutegravir and the other INSTIs. Because it contains abacavir, all patients should be screened for B*5701 to decrease the risk of developing abacavir hypersensitivity before beginning Triumeq.

—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Triumeq is a single-tablet regimen (STR) containing the drugs dolutegravir, abacavir, and lamivudine. In clinical trials Triumeq has proven to be better tolerated and more effective than Atripla. It is important to be aware of the side effects in each of its components. Some patients taking Triumeq can develop a hypersensitivity reaction due to its abacavir component, and possibly increase their risk for cardiovascular disease, although data are conflicting. A blood test that can predict predisposition to the hypersensitivity reaction is required. Dolutegravir, another component, is the newest integrase inhibitor, from ViiV Healthcare, proven to be safe, effective, and potent. Its other drug, lamivudine, also has shown a safe profile. Patients with family history of heart disease or that engage in activities that could increase cardiovascular disease (smoking) must discuss this with their doctor and closely monitor the heart condition.

—MOISÉS AGOSTO-ROSARIO

Atripla

efavirenz/emtricitabine/tenofovir disoproxil fumarate, or EFV/FTC/TDF

STR SINGLE-TABLET REGIMEN
NNRTI AND NRTIs

DHHS ALTERNATIVE

STANDARD DOSE

One tablet (600 mg efavirenz / 200 mg emtricitabine / 300 mg tenofovir disoproxil fumarate), once daily, preferably at bedtime, on an empty stomach or with a light, low-fat snack. However, to minimize potential side effects it is often recommended to take Atripla on an empty stomach at bedtime. For patients 12 years and older weighing at least 88 pounds.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Do not split or crush the tablet. Dose cannot be adjusted for people with kidney problems and Atripla should not be used in people with moderate or severe kidney or liver impairment.

MANUFACTURER

Bristol-Myers Squibb
bms.com
atripla.com
(800) 321-1335

Gilead Sciences, Inc.
(800) GILEAD-5
(445–3235)

AWP

$2,586.01 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Atripla—Sustiva, Emtriva, and Viread. Use with caution in individuals with depression or other psychiatric issues who are not under a psychiatrist's care. A 2014 study reviewed four previously published AIDS Clinical Trials Group (ACTG) studies regarding efavirenz and suicidal ideation and re-stressed the fact that efavirenz has an association with suicidality, and should be used with caution in patients with severe or uncontrolled depression and/or a history of suicidality. Common side effects may include dizziness, abnormal or vivid dreams, difficulty concentrating, rash, diarrhea, nausea, fatigue, headache, and insomnia. These side effects may go away after a few weeks. Kidney function should be assessed before initiating treatment and throughout therapy as determined by a provider. Women should not become pregnant on efavirenz (in Atripla) or for 12 weeks after discontinuation, because of the slight risk of a serious birth defect (greatest in the first trimester). However, because the birth defect risk is limited to the first 13 weeks of pregnancy and pregnancy is rarely recognized before six weeks, the recommendation is that women in their first trimester continue taking efavirenz as long as their viral load remains undetectable; however, efavirenz should only be used if the potential benefit outweighs the potential risk (as when other treatment options are not available). The efavirenz in Atripla can cause a false positive for marijuana on certain drug tests. A more specific confirmatory test can be done.

POTENTIAL DRUG INTERACTIONS

See the individual drugs contained in Atripla: Sustiva, Emtriva, and Viread. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Do not take Atripla with Combivir, Complera, Edurant, Emtriva, Epivir, Epivir-HBV, Epzicom, Hepsera, Intelence, Rescriptor, Stribild, Sustiva, Triumeq, Trizivir, Truvada, Viramune, or Viread, since these medications are already in Atripla or they have equivalent medications. Atripla should not be taken with voriconazole, ergot derivatives, midazolam, pimozide, triazolam, bepridil, or St. John's wort. No dose adjustment of Atripla needed with Sovaldi or Harvoni. If Atripla is taken with Harvoni, tenofovir (Viread) levels should be monitored due to potential increased tenofovir levels and risk of tenofovir toxicity. Use with caution. Increase dose of Daklinza to 90 mg when used with Atripla. Atripla should not be taken with Olysio, Viekira Pak, or Zepatier.

MORE INFORMATION

Atripla was downgraded from recommended to alternative regimen in the DHHS HIV treatment guidelines last year, based on a high rate of central nervous system side effects and a possible association with suicidality. Most treatment-experienced people (those who've already been on HIV therapy) may not be able to use Atripla due to having developed drug resistance (when their medications may no longer work against the virus). Drug resistance most commonly occurs when people don't take their HIV medicine as prescribed, but some may also be infected with a drug-resistant virus against which some (or all) of the medications in Atripla will not work. Be careful when stopping Atripla, so that you avoid the rapid development of HIV resistance to it—check with your provider or pharmacist first. Use of tenofovir disoproxil fumarate (in Atripla) must be monitored in people with underlying kidney problems. In this co-formulation, the Viread and Emtriva dose cannot be adjusted. Therefore, Atripla should not be used in people with moderate to severe kidney problems. Check for hepatitis B before starting therapy (see Emtriva). Gilead and BMS are forever to be commended for working together to bring Atripla to market, the first collaboration of its kind.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

One of the biggest changes in 2015 was efavirenz/FTC/TDF's downgrade from preferred to alternative for initial therapy by the DHHS Antiretroviral Guidelines Panel. As the first single-tablet regimen, EFV/FTC/TDF had been the "go-to" workhorse of HIV therapy since its debut in 2006, in spite of substantial mood and sleep side effects of efavirenz. Many tolerated the vivid dreams and grogginess it caused, while others simply could not tolerate the drug because of these toxicities, as well as exacerbation of pre-existing mental health disorders. Publication of data implicating efavirenz in suicidality, concurrent with the emergence of potent once-daily integrase inhibitors, finally resulted in the decision to move our old friend down to the B team. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Before the approval of Atripla, HIV treatment regimens involved taking three or more different drugs at different times. The first single-tablet regimen approved by the FDA became the drug of choice for treatment-naïve and -experienced patients who were not affected by efavirenz-related central nervous system side effects. As the most potent yet easier to take treatment regimen at the time, Atripla became the king of HIV treatment regimens. Eventually, new, more potent drugs with better safety profiles were developed, forming new single-tablet regimens with more potency and tolerability. Nowadays Atripla is not commonly used for treatment-naïve patients. Previously classified as a recommended regimen by the DHHS HIV Treatment Guidelines panel, it now has been moved to the alternative category.
—MOISÉS AGOSTO-ROSARIO

Complera

rilpivirine/emtricitabine/tenofovir disoproxil fumarate, or RPV/FTC/TDF

STR SINGLE-TABLET REGIMEN
NNRTI and NRTIs

DHHS RECOMMENDED ONLY IF
HIV RNA < 100,000 C/ML AND CD4 > 200 CELLS/MM^3

STANDARD DOSE

One tablet (25 mg rilpivirine / 200 mg emtricitabine / 300 mg tenofovir disoproxil fumarate) once daily, with a standard meal. Nutritional drinks, even high-calorie protein shakes or products like Ensure, should not be used in place of a meal where you chew the food. Taken with a protein shake, rilpivirine levels were still half of what they are with a meal.

Take a missed dose as soon as possible unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems and Complera should not be used in people with moderate or severe kidney impairment.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
complera.com
(800) GILEAD-5
(445–3235)

AND

Janssen Therapeutics
janssentherapeutics.com
(800) JANSSEN
(526-7736)

AWP

$2,815.06 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Complera—Edurant and Truvada. Moderate to severe side effects are uncommon. Insomnia, headache, and depressive disorders (depression, negative thoughts, suicidal thoughts or actions) were each seen in 2% of study participants. Cases of rash and increased liver enzymes have also been reported with regimens containing rilpivirine (in Complera).

POTENTIAL DRUG INTERACTIONS

Do not take this drug with Atripla, Combivir, Edurant, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Intelence, Rescriptor, Stribild, Sustiva, Triumeq, Trizivir, Truvada, Viramune, or Viread, since Complera contains these medications or has equivalent medication. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Proton pump inhibitors (PPIs, stomach acid drugs like Nexium, Prevacid, Prilosec, etc.) can't be taken with Complera. Antacids can be taken at least two hours before or at least four hours after a Complera dose. Acid reducing drugs like Pepcid, Tagamet, and Zantac can be taken at least 12 hours before or at least four hours after a Complera dose. Do not take Complera with carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifampin, rifapentine, or the herb St. John's wort (other herbs have not been studied with Complera, but use caution if planning to take any herbs). Rifabutin must be taken with an extra Edurant tablet in addition to Complera. Do not take with more than one dose of the injectable steroid dexamethasone (sometimes given in the ER or hospital). Use caution if used with fluconazole, itraconazole, ketoconazole, posaconazole, and voriconazole. Use azithromycin when possible instead of the antibiotics clarithromycin, erythromycin, or telithromycin, because these drugs increase rilpivirine levels, which can increase the risk for side effects. Reduced methadone levels can be seen and while dose adjustments are not necessary, it is recommended to monitor for withdrawal. Complera may be taken with Daklinza , Harvoni, Olysio, Sovaldi, and Zepatier. Complera cannot be taken with Viekira Pak.

MORE INFORMATION

Complera was downgraded from recommended to alternative regimen in the DHHS HIV treatment guidelines last year. Complera can be difficult to take because of its food requirement and drug interactions, and excellent adherence is critical. Moreover, the risk of virologic failure (not achieving undetectable viral load) is greater with rilpivirine than with efavirenz in treatment-naïve people starting with viral loads greater than 100,000 copies or with a CD4 count less than 200 according to the studies ECHO and THRIVE. In contrast, the STaR study, which compared the two single-tablet regimens Complera and Atripla instead of the components, showed that the risk of virologic failure was greater with Complera only in those with a viral load of 500,000 or more. In the STaR study, Complera was better tolerated than Atripla, with only 3% of study participants stopping Complera due to a side effect compared to 9%, and had significantly lower cholesterol elevations. Central nervous system and psychiatric events were the most common side effects, but higher in the Atripla group.

Complera can also be used in those with undetectable viral loads (less than 50) who are switching from another regimen and have never had treatment failure before. Concerns about switching from Atripla to Complera were eased when decreases in Complera levels were only seen in the first few weeks of a 12-week study (when Atripla levels were still high enough to be effective against HIV), and participants maintained their undetectable viral loads. Complera pills are smaller in size than Atripla. Check for hepatitis B before starting therapy (see Emtriva and Viread). Two of the components in Complera also work against hepatitis B (HBV); HBV/HIV co-infected patients should be monitored closely if Complera is discontinued, because of the risk of flare-ups. A new version of Complera that replaces TDF with TAF is on the way; see rilpivirine/emtricitabine/tenofovir alafenamide. See package insert for more information about side effects and drug interactions.

DOCTOR'S COMMENTS

Rilpivirine/FTC/TDF has the benefit of fewer mood and sleep disturbances than efavirenz/FTC/TDF, but still has been associated with depression and occasional suicidality. It can only be used in the setting of lower viral loads (less than 100,000 copies/mL), higher CD4 cells (above 200/μL), and in the absence of acid-blockers. It is best absorbed when taken with food. Because of these limitations, and the presence of more potent and tolerable drugs, it was downgraded in 2015 to alternative status for initial therapy. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Complera was intended to offer an option for patients taking Atripla but who could not tolerate the annoying efavirenz neurotoxicities such as dizziness, depression, and weird dreams. However, Complera is not as potent as Atripla. Complera is not recommended for patients with viral loads more than 100,000 copies. Issues of drug resistance to other NNRTIs can emerge. That's why it is important to have an undetectable viral load if switching from Atripla to Complera. Monitoring renal functions and liver enzymes is recommended. It is a more gentle combination of drugs with uncommon moderate to severe side effects. —MOISÉS AGOSTO-ROSARIO

Brand name yet to be determined

rilpivirine/emtricitabine/tenofovir alafenamide, or RPV/FTC/TAF

STR SINGLE-TABLET REGIMEN
NNRTI AND NRTIs

DHHS RATING
NOT YET ESTABLISHED

STANDARD DOSE

One tablet (25 mg rilpivirine / 200 mg emtricitabine / 25 mg TAF) once daily, with a standard meal. Nutritional drinks, even high-calorie protein shakes or products like Ensure, should not be used in place of a meal where you chew the food. Taken with a protein shake, rilpivirine levels were still half of what they are with a meal.

Take a missed dose as soon as possible unless it is closer to the time of your next dose. Do not double up on your next dose. Dose cannot be adjusted for people with kidney problems and this drug should not be used in people with moderate or severe kidney impairment.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AND

Janssen Therapeutics
janssentherapeutics.com
(800) JANSSEN
(526-7736)

AWP

Not yet available.

POTENTIAL SIDE EFFECTS AND TOXICITY

The following side effect profile is based on Complera. See the individual drugs contained in this medication—Edurant and Emtriva (TAF not available separately). Moderate to severe side effects are uncommon: insomnia, headache, and depressive disorders (depression, negative thoughts, suicidal thoughts or actions) were each seen in 2% of study participants. Cases of rash and increased liver enzymes have also been reported with regimens containing rilpivirine.

POTENTIAL DRUG INTERACTIONS

The following drug interactions are based on Complera. Do not take this drug with Atripla, Combivir, Complera, Edurant, Emtriva, Epivir, Epivir-HBV, Epzicom, Hepsera, Intelence, Stribild, Sustiva, Triumeq, Trizivir, Truvada, or Viread, since this drug contains these medications or has equivalent medication. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Proton pump inhibitors (PPIs, stomach acid drugs like Nexium, Prevacid, Prilosec, etc.) can't be taken with rilpivirine. Antacids can be taken two hours before or four hours after rilpivirine. Acid reducing drugs like Pepcid, Tagamet, and Zantac can be taken 12 hours before or four hours after a dose. Do not take with carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifampin, rifapentine, or the herb St. John's wort (other herbs have not been studied with this medication, but use caution if planning to take any herbs). Rifabutin must be taken with an extra Edurant tablet in addition to this drug. Do not take with more than one dose of the injectable steroid dexamethasone (sometimes given in the ER or hospital). Use caution if used with fluconazole, itraconazole, ketoconazole, posaconazole, and voriconazole. Use azithromycin when possible instead of the antibiotics clarithromycin, erythromycin, or telithromycin, because these drugs increase rilpivirine levels, which can increase the risk for side effects. Reduced methadone levels can be seen and while dose adjustments are not necessary, it is recommended to monitor for withdrawal. May be taken with Daklinza, Harvoni, Olysio, Sovaldi, or Zepatier. Cannot be taken with Viekira Pak.

MORE INFORMATION

Expected to be on the market March 2016, this medication is the new version of Complera. Instead of TDF, however, it contains TAF. In clinical trials, less kidney and bone issues were seen with TAF versus TDF. This regimen will be FDA approved based on bioequivalency data (showing similar drug levels when compared to an established drug). Rilpivirine-containing regimens can be difficult to take because of its food requirement and drug interactions, and excellent adherence is critical. Moreover, the risk of virologic failure (not achieving undetectable viral load) is greater with rilpivirine than with efavirenz (in Atripla) in treatment-naïve people starting with viral loads greater than 100,000 copies or with a CD4 count less than 200 according to the studies ECHO and THRIVE. See Edurant for more information. Check for hepatitis B before starting therapy (see Emtriva). Two of the components in this medication also work against hepatitis B (HBV), thus patients who have both HIV and HBV should be monitored closely if this drug is discontinued, because of the risk of flare-up.

See package insert, when available, for more information on potential side effects and interactions.

DOCTOR'S COMMENTS

The third member of the TAF Family, rilpivirine/FTC/TAF, is pending an FDA approval decision by April 1, 2016. This drug is being studied in switch studies for patients currently virally suppressed on EFV/FTC/TDF or RPV/FTC/TDF, but its requested indication includes initial therapy. If approved, it is likely that the same rilpivirine caveats for viral load, CD4, drug interactions, and many side effects will apply to the TAF formulation.
—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

A new version of Complera has been developed containing TAF, replacing TDF. TAF does not present the same challenges regarding kidney toxicity and bone loss density as does TDF. This means that the kidney toxicity and bone loss density side effects traditionally seen with TDF are expected to decrease in the new version of Complera. Like the old version of Complera, the new Complera is a single-tablet regimen that contains rilpivirine and emtricitabine, plus TAF instead of TDF. TAF is more potent than TDF, therefore the potency of the new version of Complera may improve. The caveat excluding those with more than 100,000 copies of viral load may still apply. Issues of drug resistance to other NNRTIs can emerge. —MOISÉS AGOSTO-ROSARIO

Isentress raltegravir, or RAL

INSTI INTEGRASE STRAND TRANSFER INHIBITOR (INTEGRASE INHIBITOR)

DHHS RECOMMENDED FOR FIRST-LINE USE

STANDARD DOSE

One 400 mg film-coated tablet twice a day, with or without food, for adults and children weighing at least 55 lbs (25 kg). Dosing is based on weight for children less than 55 lbs.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose.

Pediatric formulations are available as an oral suspension and chewable tablet. The banana-flavored suspension may be used for children ages four weeks and up, weighing at least 7 lbs (3 kg). The chewable tablet, which may also be swallowed, is available in a 25 mg or 100 mg banana-orange-flavored tablet, and may be taken with or without food. The chewable tablets and oral suspension are not bioequivalent to the film-coated tablets; therefore, do not substitute chewable tablets or oral suspension for film-coated tablets.

MANUFACTURER

Merck and Co.
isentress.com
(800) 622–4477

AWP

$1,539.15 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

In general, very well tolerated with infrequent side effects. Those reported in 3–4% of study subjects include insomnia, nausea, and headache. The side effect profile in children is comparable to adults. Isentress may cause elevated levels of creatine kinase (a muscle enzyme). Inform your provider or pharmacist if you have a history of rhabdomyolysis, myopathy, or increased creatine kinase, or if you also take medications that may contribute to these conditions such as statins, fenofibrate, or gemfibrozil. Contact your health care provider if you experience dark or tea-colored urine, or if you experience unexplained muscle pain, tenderness, or weakness. Increases in ALT, AST, and total bilirubin (signs of liver toxicity) have been seen in around 8% of people taking Isentress, especially those co-infected with hepatitis B or C. Although very rarely seen, severe and potentially fatal skin and hypersensitivity (allergic) reactions including Stevens-Johnson Syndrome have been reported. Seek medical attention and immediately stop taking Isentress and your other HIV medications if you develop a rash associated with any of the following symptoms: fever; general ill feeling; extreme tiredness; muscle or joint aches; blisters; oral lesions; swelling of the eyes, lips, mouth, or face; difficulty breathing; and/or signs and symptoms of liver problems (such as yellowing of the skin or whites of the eyes, dark or tea-colored urine, pale stools/bowel movements, nausea, vomiting, loss of appetite, or pain, aching, or sensitivity on the right side below the ribs). Chewable tablets contain phenylalanine, which can be harmful to patients with phenylketonuria.

POTENTIAL DRUG INTERACTIONS

Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. If used with rifampin, increase dose of Isentress to 800 mg twice a day. Remember to decrease the Isentress dose back to 400 mg twice a day when you finish taking rifampin. There are no data on dosing of the chewable tablets with rifampin. There is no need to increase the Isentress dose with rifabutin. Avoid Gaviscon and other antacids containing aluminum or magnesium. Calcium-containing antacids like Tums (calcium carbonate) can be used. Other acid reducers (such as Pepcid, Zantac, Prilosec, and Prevacid) are okay to use. There is no interaction with methadone. Isentress can be used with Daklinza, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier.

MORE INFORMATION

According to DHHS HIV treatment guidelines, all three INSTIs on the market are recommended drugs. Long-term Isentress data show efficacy with great tolerability in both first-time therapy and in treatment-experienced people with resistance to other antiretroviral drug classes. When taken with Truvada, it was found to be non-inferior in efficacy to and better tolerated than Atripla. When compared with a boosted-PI or NNRTI regimen, treatment-naïve individuals achieved faster viral suppression on INSTIs such as Isentress. For combined virologic efficacy and tolerability, Isentress was shown to be superior to two boosted-PI regimens. DHHS guidelines note drawbacks with the use of Isentress: twice-a-day dosing and a lower barrier to drug resistance than boosted PIs. Greater tolerability may help overcome those issues and result in greater adherence. A 1,200 mg once-daily Isentress tablet is under development, which would help improve adherence and would offer a third once-daily INSTI option. Adherence is important because of the drug's short half-life and its low genetic barrier to drug resistance (meaning that it may only take very few missed doses for this medication to stop working). If resistance to Isentress develops, elvitegravir (part of Stribild and Genvoya) will likely not work. However, Tivicay, part of the recently introduced single-tablet regimen Triumeq, may still be an effective option due to Tivicay's higher barrier for resistance. Last year, Isentress was listed as a preferred drug in HIV treatment guidelines for pregnancy. See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Highly effective, well tolerated, and still recommended as initial therapy (with TDF/FTC), raltegravir is a twice-daily drug with a rather fragile resistance profile. For these reasons, it is prescribed less frequently these days than its once-daily INSTI competitors. There are reports of suicidality with raltegravir, as with all integrase inhibitors. It remains to be seen whether Merck can refresh this drug as a once-daily formulation that will make it more competitive with its peers.
—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Isentress or raltegravir, as known by its generic name, is from a newer class of HIV drugs called integrase inhibitors, and the first in its class to be approved. The addition of raltegravir to the menu of choices for HIV treatment was much welcomed by those with drug resistance and who were not able to build a new regimen. Taken twice a day, it has been shown to be effective and well tolerated. Concerns about drug resistance exist, but its quick ability to suppress HIV has made it a choice for those with multidrug resistance and for those starting treatment for the first time. —MOISÉS AGOSTO-ROSARIO

Tivicay dolutegravir, or DTG

INSTI INTEGRASE STRAND TRANSFER INHIBITOR (INTEGRASE INHIBITOR)

DHHS RECOMMENDED FOR FIRST-LINE USE

STANDARD DOSE

One 50 mg tablet once daily for people on HIV therapy for the first time or treatment-experienced people who have never taken an INSTI. One 50 mg tablet twice daily when also taking Sustiva, Atripla, Lexiva/Norvir, Aptivus/Norvir, carbamazepine, or rifampin, or in people with INSTI (Isentress, Stribild, and Genvoya) drug resistance or suspected resistance. Take with or without food. Tivicay is approved for patients 12 years and older weighing at least 88 pounds, but a pediatric formulation is being studied in children 6 weeks and older.

Take a missed dose as soon as possible, unless it is within 4 hours of your next dose, then skip the missed dose. Do not double up on your next dose. Not recommended for people with severe liver impairment. Use with caution in people with severe kidney impairment who have INSTI drug resistance or suspected resistance, because Tivicay levels may be decreased.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$1,581.69 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

In general, very well tolerated with infrequent side effects. The most common moderate to severe side effects in clinical studies were insomnia (3%), headache (2%), and fatigue (2%). Mild insomnia was seen in 7% of participants in one study. Rarely, hypersensitivity (an allergy-like reaction) may occur. Stop taking Tivicay if signs or symptoms of hypersensitivity occur (including but not limited to severe rash or rash with: a fever, feeling ill, muscle or joint aches, blisters or skin peeling, blisters or sores in the mouth, redness or swelling of the eyes, facial swelling, signs and symptoms of liver problems (such as yellowing of the skin or whites of the eyes, dark or tea colored urine), angioedema [swelling under the skin], and difficulty breathing). Tivicay is associated with a small laboratory increase in creatinine (a marker of kidney function) but Tivicay does not affect kidney function or cause kidney toxicity). Liver enzymes should be monitored in people with hepatitis B or C and taking Tivicay. Stop taking Tivicay if you experience signs of liver problems (yellowing of the skin or whites of the eyes; dark or tea-colored urine; pale-colored bowel movements; nausea or vomiting; loss of appetite; and pain, aching, or tenderness on the right side below the ribs).

POTENTIAL DRUG INTERACTIONS

Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with the anti-arrhythmic dofetilide (Tikosyn), due to the potential for serious or life-threatening reaction. Intelence decreases Tivicay levels by 88%; the addition of Kaletra, boosted Prezista, or boosted Reyataz is required. Tivicay should be taken two hours before or six hours after taking laxatives or antacids, the ulcer medication sucralfate, oral iron or calcium supplements, or buffered medications. When taken together, these medications can reduce the absorption of Tivicay; however, it can be taken with iron- or calcium-containing supplements if taken together with food. Acid reducers (Pepcid, Zantac) and proton pump inhibitors (such as Prilosec, Prevacid, Protonix, Nexium) are okay to use. Avoid taking with Viramune, oxcarbazepine, phenytoin, phenobarbital, and St. John's wort. Metformin levels are increased by Tivicay and a maximum metformin dose of 1,000 mg per day is recommended when starting either metformin or Tivicay. Use alternatives to rifampin, carbamazepine, efavirenz, Aptivus/Norvir, and Lexiva/Norvir when possible in people with INSTI drug resistance or clinically suspected resistance. Should be okay to take with Daklinza, Harvoni, Olysio, Sovaldi, Viekira Pak, or Zepatier.

MORE INFORMATION

According to DHHS HIV treatment guidelines, all three INSTIs on the market are recommended as initial drugs. Tivicay is a second-generation INSTI, meaning that it may work in many individuals whose virus has developed resistance to the other drugs in its class (Isentress, Stribild, and Genvoya), but it needs to be dosed twice daily in these people. Tivicay is part of the single-tablet regimen Triumeq. In clinical studies to date, Tivicay seems to have a high barrier to resistance, similar to the protease inhibitors. Drug resistance has not been seen in treatment-naïve people (those on HIV therapy for the first time) whose therapy with Tivicay has stopped working; this potentially gives them more options for future treatment. In various studies in this group, Tivicay has been shown to be superior to Atripla and Prezista/Norvir, mainly due to tolerability. It also outperformed Isentress in treatment-experienced patients naïve to INSTIs. A Phase 3 study is evaluating the nuke-sparing combination of Tivicay and Edurant, while one with Tivicay and Epivir is beginning (see A5353 at actgnetwork.org).

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Recommended as initial therapy with ABC/3TC or TDF/FTC, this potent once-daily INSTI was the first drug to trounce EFV/FTC/TDF in clinical trials of initial therapy (mostly due to fewer side effects.) A similar study showed superiority to ritonavir-boosted darunavir, and another showed non-inferiority against raltegravir. Likewise, dolutegravir has activity against many raltegravir- or elvitegravir-resistant viruses. Recent data suggest suicidality may be associated with dolutegravir and other INSTIs, but less often than with efavirenz. Dolutegravir should never be taken with dofetilide, a drug used for atrial fibrillation. Nor should it be taken with etravirine, unless a booster is present, because of drug interactions. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Tivicay (dolutegravir) is considered a second-generation integrase inhibitor because it appears to work in people who have developed resistance to the other two integrase inhibitors—raltegravir and elvitegravir. In clinical trials, Tivicay was proven to be well tolerated and potent. Dolutegravir is in the single-tablet regimen Triumeq. It could be taken once a day without boosting, as in the case of Triumeq, and should be taken twice a day for treatment-experienced individuals who have developed resistance to either raltegravir or elvitegravir. The DHHS HIV Treatment Guidelines panel classified dolutegravir and the other two integrase inhibitors on the market as recommended for first-time therapy.
—MOISÉS AGOSTO-ROSARIO

Prezcobix darunavir/cobicistat, or DRV/COBI

PI PROTEASE INHIBITOR/PHARMACOKINETIC ENHANCER (BOOSTER) | FIXED-DOSE COMBINATION

DHHS ALTERNATIVE

STANDARD DOSE

One tablet (800 mg darunavir/150 mg cobicistat) once daily with food, in patients with no darunavir drug resistance. When coadministered with drugs containing tenofovir disoproxil fumarate (Viread, Truvada) the kidney function should be above 70 mL/min.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Cobicistat should be used in pregnancy only if the benefits justify the risks. There is only animal data in pregnancy. Cobicistat has not been studied in individuals under 18 years of age, thus Prezcobix should not be used in pediatric patients. Do not use in people with severe liver impairment.

MANUFACTURER

Janssen Therapeutics
prezcobix.com
(800) JANSSEN
(526-7736)

AWP

$1,862.13 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in this medication—Prezista and Tybost. Prezcobix was FDA approved based on bioequivalency data (similar drug levels in blood when compared to its FDA approved equivalent). In clinical trials with Prezista/Norvir, the most common side effects seen of at least moderate intensity in 5% or more of participants taking it were diarrhea, nausea, rash, headache, abdominal pain, and vomiting. There may be a small increase in serum creatinine (SCr) and decrease in estimated creatinine clearance (CrCl), but this does not affect actual kidney function. However, patients experiencing a confirmed increase in serum creatinine of greater than 0.4 mg/dL from baseline should be closely monitored for renal safety. Serum phosphorus in patients with or at risk for kidney impairment should also be monitored. Kidney impairment, including cases of acute kidney failure and Fanconi syndrome, have been reported in patients taking both cobicistat and Viread (tenofovir DF or TDF, also found in Truvada). When used with TDF, a baseline CrCl, urine glucose, and urine protein is needed; CrCl, urine glucose, and urine protein should be monitored regularly while taking Tybost-containing regimens. As darunavir (contained in Prezcobix) contains a sulfa component, patients with a known sulfonamide allergy should be monitored for rash after starting it.

POTENTIAL DRUG INTERACTIONS

See the pages for the individual drugs contained in this medication—Prezista and Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements that you're taking or thinking of taking, prescribed or not, before starting on a regimen that contains Prezcobix. Do not take with Evotaz, Genvoya, Kaletra, Norvir, Prezista, Stribild, or Tybost; all or part of these medications are already in Prezcobix or contain equivalent medication. Use with other protease inhibitors or Intelence, Sustiva, or Viramune is not recommended. Do not take with ergot derivatives, triazolam, oral midazolam, lurasidone, pimozide, Revatio, simvastatin, lovastatin, St. John's wort, alfuzosin, ranolazine, rifampin, or dronedarone. Do not take with colchicine if there is kidney or liver impairment. Can be used with Daklinza. Based on the mechanism, drug interactions with other hepatitis C medications are probably similar to the interactions with Prezista/Norvir, but we are not certain. See the page for Prezista for those interactions.

MORE INFORMATION

Prezcobix is an alternative PI for first-time therapy in Department of Health and Human Services (DHHS) HIV treatment guidelines, and is one of two PIs that is co-formulated with a booster (the other is Evotaz). Since Prezista must be used with a PK enhancer like cobicistat (Tybost) or ritonavir (Norvir), this formulation makes for greater convenience, one less pill, and one less co-pay. Tybost is not an HIV medication; like ritonavir (which is an HIV medication), it is used to boost blood levels of other drugs. The two PK enhancers have a long list of drug interactions.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

The combination of darunavir and cobicistat was approved based upon data showing bioequivalence with darunavir and ritonavir. Because fewer data are available to support this regimen, and because this small bioequivalence study found darunavir levels at the end of a dosing period to be higher with ritonavir than with cobicistat, this compound was ranked as alternative by the DHHS guidelines panel. The advantages are consolidation of two pills into one, and a single drug co-pay. But the drug may be on a high formulary tier requiring higher cost sharing on the part of the patient. Do the math! For those who are eligible, co-pay cards can alleviate this burden. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Prezcobix is the brand name of the single-tablet co-formulation of the PI darunavir (Prezista) and the drug booster cobicistat. As with Evotaz and other co-formulated fixed-dose combinations, it is important to be aware of the particular side effects and drug-drug interactions of each of the drugs. Atazanavir/cobicistat brings the same advantages in Evotaz: fewer pills and co-pays. This co-formulation is not inferior to boosting with ritonavir. —MOISÉS AGOSTO-ROSARIO

Prezista darunavir, or DRV

PI PROTEASE INHIBITOR

DHHS RECOMMENDED FOR FIRST-LINE USE

STANDARD DOSE

One 800 mg tablet with 100 mg Norvir or 150 mg Tybost (cobicistat) once daily with food for first-time therapy and treatment-experienced adults without Prezista-related resistance. One 600 mg tablet with 100 mg Norvir twice daily with food for pregnant women and those whose HIV therapy has failed in the past and who have at least one Prezista-related resistance mutation. Prezista should never be taken without Norvir or Tybost. 75 mg, 150 mg, and 300 mg tablets available for children older than three, dose based on weight. An oral suspension for children three and older and adults who can't swallow pills is available.

See the package insert for specific dose of oral suspension based on weight. As with the tablet, Prezista oral suspension needs to be taken with Norvir or Tybost.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose.

MANUFACTURER

Janssen Therapeutics
prezista.com
(800) JANSSEN
(526-7736)

AWP

$1,629.05 / month for all strengths for 600 mg, 800 mg tablets, and 100 mg/mL suspension (assuming 360 mL suspension is needed)

POTENTIAL SIDE EFFECTS AND TOXICITY

As Prezista contains a sulfa component, use with caution in patients with sulfa allergies. Most common side effects may include diarrhea, nausea, headache, rash, vomiting, and abdominal pain. Measure liver function before starting and then monitor, with perhaps closer monitoring for those with underlying liver problems, especially during the first several months. No dose adjustment necessary with mild to moderate liver disease, but Prezista/Norvir is not recommended for those with severe liver impairment. While very rare, severe rash (in less than 0.4% of those taking it), accompanied in some cases by fever and/or elevations of AST/ALT (liver enzymes), can be life-threatening. Seek medical attention immediately. When used with Tybost a small increase in serum creatinine (SCr) may be seen which does not translate to a decrease in kidney function, and Tybost is not recommended in individuals with a creatinine clearance less than 70 mL/min if used in regimen containing tenofovir disoproxil fumarate (TDF).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list of interactions. Drug interactions of Prezista/Norvir may be different than those for Prezista/Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not take with alfuzosin, dronedarone, colchicine in patients with kidney or liver impairment, ranolazine, pimozide, ergot derivatives, triazolam, oral midazolam, rifampin, Revatio, Xarelto, and St. John's Wort. May decrease levels of phenytoin and phenobarbital, and increase levels of carbamazepine; levels should be monitored. Reduced dose of rifabutin is recommended. Do not use lovastatin or simvastatin, or co-formulations containing these drugs (Advicor and Vytorin), for the treatment of high cholesterol. Cholesterol-lowering alternatives are rosuvastatin, atorvastatin (should not exceed 20 mg a day), pitavastatin, and pravastatin, but should be used with caution and started at the lowest dose possible. Monitor for increased side effects from these medications. Reduce clarithromycin dose by 50 to 70% in kidney impairment. The antifungal drugs itraconazole or ketoconazole should be used with caution (maximum dose is 200 mg a day for either). Voriconazole should not be used unless the benefits outweigh the risks. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Prezista may increase levels of calcium channel blockers (like amlodipine) and beta blockers; clinical monitoring is recommended. A lower dose of trazodone and desipramine may be recommended. Close monitoring of INR levels required when using warfarin. Increases levels of fluticasone (found in Advair, Flonase, and Flovent) and budesonide; use alternative corticosteroid and monitor for signs of Cushing's syndrome (increased abdominal fat, hump between the shoulders, rounded face, red/purple stretch marks, bone loss, high blood pressure, and sometimes diabetes). Effectiveness of birth control pills may be decreased; consider other methods of contraception. Use lowest dose of digoxin; monitor and titrate. No dose adjustment required with buprenorphine or methadone. Monitoring of antidepressant response is recommended with selective serotonin reuptake inhibitors (such as paroxetine and sertraline). Use cautiously with bosentan, immunosuppressants, and colchicine; use lower dose of colchicine. Can be used with Sovaldi and Daklinza. Avoid with Harvoni if tenofovir disoproxil fumarate (TDF) is part of HIV regimen. Do not take with Olysio, Viekira Pak, or Zepatier.

MORE INFORMATION

Prezista in combination with Norvir and Truvada is the only PI recommended for initial therapy in U.S. HIV treatment guidelines. A single-tablet, once-daily regimen containing Prezista, Tybost, TAF, and Emtriva is being studied and will be the first one-tablet, once-daily PI-containing regimen. It worked as well as a similar regimen containing the older tenofovir disoproxil fumarate (Viread) formulation in a small pilot study, but it had less detrimental effects on kidney function and bone density. Prezista/Norvir was added as a preferred combination last year in HIV treatment guidelines for pregnancy. A fixed-dose tablet containing Prezista and Tybost is available; see Prezcobix.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Ritonavir-boosted darunavir is now the only PI preferred for initial therapy, and only when given with TDF/FTC. It probably works well with ABC/3TC but fewer data are available, thus that combination is alternative rather than preferred. It is potent, once daily, and offers a high barrier to resistance. Lipid elevations do occur, but liver enzyme elevations and rash are only occasional. Its cobicistat-boosted co-formulation is discussed under Prezcobix, and a single-tablet regimen with cobicistat, FTC, and TAF is in clinical trials.
—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Prezista (darunavir) is the only ritonavir-boosted protease inhibitor that, when used with Truvada, is categorized as one of the five recommended regimens by the DHHS HIV Treatment Guidelines panel. Prezista is taken once a day and boosted with ritonavir or cobicistat. In clinical trials it was shown to equally work for men and women. Its efficacy and tolerability are superior to Kaletra (lopinavir/ritonavir) and it is lipid friendly, less likely to cause metabolic complications such as diabetes, lipodystrophy, and high cholesterol. A single-tablet PI-based regimen is under study combining it with cobicistat, TAF, and Emtriva. —MOISÉS AGOSTO-ROSARIO

Evotaz atazanavir/cobicistat, or ATV/COBI

PI PROTEASE INHIBITOR/PHARMACOKINETIC ENHANCER (BOOSTER) | FIXED-DOSE COMBINATION

DHHS ALTERNATIVE

STANDARD DOSE

One tablet (300 mg atazanavir/150 mg cobicistat) once daily with food. Use in treatment-experienced patients depends on protease inhibitor drug resistance substitutions. Coadministration with drugs containing tenofovir disoproxil fumarate (Viread, Truvada) is not recommended if kidney function is below 70 ml/min. Not recommended in people with liver impairment or those who are treatment-experienced and on hemodialysis.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Cobicistat should be used in pregnancy only if the benefits justify the risks. There is only animal data in pregnancy. Cobicistat has not been studied in individuals under 18 years of age, thus Evotaz should not be used in pediatric patients.

MANUFACTURER

Bristol-Myers Squibb
evotaz.com
(800) 321-1335

AWP

$1,817.52 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in this medication—Reyataz and Tybost. The most common side effects (greater than 10%) seen in clinical trials were nausea, ocular icterus (yellowing of the eyes), and jaundice. Rash has also been reported, though less common. There may be a small increase in serum creatinine (SCr) and decrease in estimated creatinine clearance (CrCl). However, this does not affect actual kidney function. However, patients experiencing a confirmed increase in serum creatinine of greater than 0.4 mg/dL from baseline should be closely monitored for renal safety. Serum phosphorus in patients with or at risk for kidney impairment should also be monitored. Kidney impairment, including cases of acute kidney failure and Fanconi syndrome, has been reported in patients taking both cobicistat and Viread (tenofovir DF or TDF, also found in Truvada). When used with TDF, a baseline CrCl, urine glucose, and urine protein is needed; CrCl, urine glucose, and urine protein should be monitored regularly while taking Tybost-containing regimens.

POTENTIAL DRUG INTERACTIONS

See the pages for the individual drugs contained in this medication—Reyataz and Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements that you're taking or thinking of taking, prescribed or not, before starting on a regimen that contains Evotaz. Do not take with Genvoya, Kaletra, Norvir, Prezcobix, Reyataz, Stribild, or Tybost; all or part of these medications are already in Evotaz or contain equivalent medication. Use with other protease inhibitors or with Intelence, Sustiva, or Vitekta is not recommended. Do not take with ergot derivatives, triazolam, oral midazolam, lurasidone, pimozide, Revatio, simvastatin, lovastatin, St. John's wort, Viramune, alfuzosin, ranolazine, rifampin, dronedarone, or irinotecan. Do not take with colchicine if there is kidney or liver impairment. Do not use with Olysio, Viekira Pak, or Zepatier. Can be used with Sovaldi, Daklinza (reduce Daklinza dose to 30 mg), or Harvoni (if TDF is not part of the HIV regimen).

MORE INFORMATION

Evotaz is an alternative PI for first-time therapy in Department of Health and Human Services (DHHS) HIV treatment guidelines, and is one of two PIs that are co-formulated with the booster cobicistat (the other is Prezcobix). Since most people who take Reyataz must use it with a PK enhancer like cobicistat (Tybost) or ritonavir (Norvir), this formulation makes for greater convenience, one less pill, and one less co-pay. Tybost is not an HIV medication; like ritonavir, it is used to boost blood levels of other drugs. The two PK enhancers have a long list of drug interactions.

See package insert for more information on side effects and drug interactions.

DOCTOR'S COMMENTS

The once-daily tablet combining atazanavir and cobicistat was shown to be non-inferior to atazanavir and ritonavir in a controlled clinical trial. The practical advantage for patients is that the boosted combo is a single pill with a single co-pay. The downside may be that some insurers place combo regimens on higher drug formulary tiers, requiring higher co-pays or coinsurance. Do the math! Co-pay cards can help with this, as long as you have an insurance plan. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Evotaz is the brand name of the single-tablet co-formulation of Reyataz (atazanavir) and Tybost (cobicistat). It is important to be aware of the side effects in each one of the drugs as well as the drug-drug interactions. Cobicistat is a pharmacokinetic enhancer used to boost the drug levels of other HIV drugs, and was developed to take the place of ritonavir in boosted PIs. It is not clinically inferior to boosting with ritonavir, and it makes it easier for individuals by eliminating one more pill and an extra co-payment. Abbott (AbbVie), the manufacturer of ritonavir, never licensed ritonavir to be used in co-formulation with other companies' drugs, which translated into an extra pill and co-pay.
—MOISÉS AGOSTO-ROSARIO

Reyataz atazanavir sulfate (atazanavir), or ATV

PI PROTEASE INHIBITOR DHHS ALTERNATIVE

STANDARD DOSE

One 300 mg capsule plus 100 mg Norvir or 150 mg Tybost, once daily with food (this boosted dose should be used if taking Viread or Truvada). Two 200 mg capsules (without Norvir or Tybost), once daily with food may be considered for treatment-naïve adults in some cases; however, the boosted dose is preferred. The boosted dosing should be used during pregnancy, and dosing depends on the trimester, previous ARV experience, and drug interactions—ask your doctor.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Swallow capsules whole—do not open or mix with anything. Take Norvir or Tybost pill when you take Reyataz.

See kidney and liver disease dose information at positivelyaware.com/reyataz.

Children 6 to 18 years old weighing at least 33 lbs (15 kg) can use the capsules; dosing is based on weight. A powder formulation, taken with Norvir, is available for children 3 months and older weighing at least 11 lbs (5 kg).

Also available in 150 and 200 mg capsules, and 50 mg oral powder packets.

MANUFACTURER

Bristol-Myers Squibb
reyataz.com
(800) 321-1335

AWP

$1,656.52 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Most common side effects may include nausea, yellowing of the skin or eyes (a result of increased bilirubin levels), and rash. Other less common side effects may include kidney stones, gall stones, abnormal heart rhythm, and elevated liver enzymes (more common in people with hepatitis B or C). Capsules do not contain phenylalanine but oral powder does; thus use with caution in individuals with phenylketonuria (PKU).

POTENTIAL DRUG INTERACTIONS

See package inserts for Reyataz, Norvir, and Tybost. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Do not use with alfuzosin, rifampin, irinotecan, ergot derivatives, triazolam, oral midazolam, St. John's wort, Revatio, or Viramune (nevirapine). Do not use lovastatin, simvastatin, or the co-formulations containing them (Advicor and Vytorin) for treatment of high cholesterol. Alternatives for these are atorvastatin, rosuvastatin, pravastatin, pitavastatin, and fluvastatin, but should be used with caution and started at the lowest dose possible; monitor for increased side effects. Proton pump inhibitors (PPIs, like Protonix, Nexium, and Prevacid) and H2-receptor antagonists (H2RAs, like Pepcid, Zantac, and Tagamet) can stop Reyataz from being absorbed. Treatment-experienced people should not take PPIs while on Reyataz. Treatment-naïve people can take a PPI at a low dose (such as 20 mg Prilosec OTC) 12 hours before Reyataz/Norvir. H2RAs like Pepcid may be taken (no more than 20 mg twice a day if treatment-experienced or 40 mg twice a day if treatment-naïve) at the same time as Reyataz/Norvir or at least 10 hours later. When taking Reyataz without Norvir, the dose can be taken at least two hours before and at least 10 hours after an H2RA. If taking chewable antacids like Rolaids and Tums, take Reyataz two hours before or one hour after. Treatment-experienced people should not take Reyataz with Sustiva. Viread decreases the levels of Reyataz and Reyataz/Norvir increases Viread levels; monitor for adverse events. Reyataz can be taken unboosted with Epzicom if necessary. Bepridil, amiodarone, quinidine, and lidocaine should be used cautiously because of the risk of worsening heart rhythm. Monitoring may be required when used with warfarin. Calcium channel blockers should be monitored. Use caution when using the antifungals itraconazole or ketoconazole. Voriconazole is not recommended. Reducing dose and frequency of rifabutin to 150 mg every other day or three times a week is recommended. Reyataz/Norvir increases levels of fluticasone (found in Advair, Flonase, and Flovent); monitor for signs of Cushing's syndrome, including rounded face. An alternative corticosteroid is recommended. Reyataz can be taken with birth control pills that contain no more than 30 mcg of ethinyl estradiol if taking Reyataz without Norvir and at least 35 mcg if taken with Norvir. Use caution with carbamazepine, phenobarbital, and phenytoin. ED drugs should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. A lower dose of trazodone is recommended. Use with caution with bosentan, salmeterol, and immunosuppressants, and use lower dose of colchicine. Use with Norvir when taking buprenorphine. Monitor before sedation. Taking with Olysio or Zepatier is not recommended. Reyataz/Norvir is not recommended with Harvoni if tenofovir disoproxil fumarate (TDF, in Truvada) is part of HIV regimen. Take Reyataz with morning Viekira Pak dose, without Norvir.

MORE INFORMATION

Norvir-boosted Reyataz was downgraded from recommended to alternative regimen in the DHHS HIV treatment guidelines last year, based on a high discontinuation rate due to side effects in a large study in which it was inferior to Prezista and Isentress due to tolerability. This is due mainly to increased bilirubin levels that is not harmful to health but causes yellowing of the eyes and skin. It is still a recommended drug for pregnancy. It is now available as a boosted tablet; see Evotaz.

See package insert for details of potential side effects and interactions.

DOCTOR'S COMMENTS

In 2015, atazanavir was downgraded to alternative status for initial therapy in the DHHS guidelines. The downgrade was based both on safety and efficacy. Safety concerns include the predictable elevation in bilirubin concentrations that sometimes leads to mild jaundice ("yellow eyes"), as well as an increased risk of kidney stones and gallstones. In clinical trials, atazanavir was beaten by both raltegravir and darunavir. Additionally, certain acid blocking drugs (proton pump inhibitors) can compromise efficacy. Likewise both atazanavir and its required boosting agents, ritonavir or cobicistat, are associated with many drug interactions that can cause additional toxicities. Unboosted atazanavir is not recommended by guidelines, and should generally not be used, but if it is used, it should never be given with TDF.
—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Reyataz (atazanavir) was the first protease inhibitor (PI) to be used once a day. Compared to previous PIs it has a friendly lipid profile, eliminating any worries about metabolic complications. It is used with ritonavir or cobicistat as boosters, more so if it is used in combination with Truvada. If not boosted, atazanavir will decrease blood levels of TDF alone or within Truvada, and should not be used. Drug interactions are a concern. Medications for acid reflux can interfere with the absorption of atazanavir. With atazanavir there is an increase of bilirubin that, although not harmful, causes yellowing of the eyes and skin. —MOISÉS AGOSTO-ROSARIO

Kaletra

lopinavir/ritonavir, or LPV/r

PI PROTEASE INHIBITOR
FIXED-DOSE COMBINATION WITH NORVIR BOOSTER

DHHS OTHER

STANDARD DOSE

Two tablets (200 mg lopinavir / 50 mg ritonavir) twice daily with food. All four tablets can be taken once daily for people with less than three lopinavir resistance associated mutations. Do not use once daily if taken with Sustiva, Viramune, phenytoin, carbamazepine, phenobarbital, or if pregnant. If taken with Sustiva or Viramune, an additional 100 / 25 mg tablet twice daily must be added. Three 200 / 50 mg tablets twice a day may be considered for treatment-experienced people or pregnant women during the second and third trimesters. Avoid oral solution in pregnant women. Kaletra should not be taken once a day by children under 18; twice-daily dosing is based on weight and concomitant medications. The oral solution cannot be given to premature babies until 14 days after their due date because it contains propylene glycol. Other available formulations include: 100 mg lopinavir / 25 mg ritonavir tablets and an oral solution lopinavir 80 mg/mL / ritonavir 20 mg/mL.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose.

MANUFACTURER

AbbVie
kaletra.com
(800) 222–6885

AWP

$1,106.30 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Diarrhea is the most common, and occurs more often in people taking Kaletra once daily versus twice daily. Other more common side effects may include nausea, vomiting, and stomach pain. Elevated cholesterol and triglycerides, as well as insulin resistance, can also occur, especially later in treatment. Elevated liver enzymes (a sign of liver damage—may be more common in people with hepatitis B or C) may also occur.

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list of interactions. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or are considering taking, prescribed or not. Do not take with alfuzosin, Revatio, oral midazolam, rifampin, pimozide, ergot derivatives, triazolam, or the herb St. John's wort. Do not use lovastatin and simvastatin or co-formulations containing these drugs (Advicor and Vytorin). Alternatives are atorvastatin, rosuvasatin, pravastatin, pitavastatin, and fluvastatin, but should be used with caution and started at the lowest dose possible; monitor for increased side effects. Oral solution contains alcohol, so do not use with disulfiram or metronidazole. Use calcium channel blockers with caution. Dosage of methadone may need to be increased. May lower levels of AZT and Ziagen. If taking Kaletra with Viread or other combinations containing tenofovir disoproxil fumarate, monitor for side effects from tenofovir. Kaletra should not be taken with Stribild; however, Kaletra may be taken with Tivicay. Rifabutin dose should be reduced to 150 mg every other day (or 150 mg three times per week) when used with Kaletra. Effectiveness of birth control pills may be decreased; consider the use of other contraception. Atovaquone levels may be reduced with Kaletra. Avoid itraconazole or ketoconazole doses greater than 200 mg per day with Kaletra. Monitor for side effects when taken with posaconazole. Avoid with voriconazole—alternative antifungal is recommended. People with kidney impairment may require lower clarithromycin doses with Kaletra. Kaletra may alter warfarin levels; additional monitoring may be required. Steroids, especially dexamethasone, may decrease Kaletra levels. Kaletra increases levels of steroids, particularly fluticasone (Advair, Flonase, Flovent, etc.). Use an alternative to fluticasone, and monitor for signs of Cushing's syndrome (increased abdominal fat, fatty hump between the shoulders, rounded face, and more). Kaletra increases levels of trazodone. Bupropion levels are lowered; titrate dose based on clinical response. Doses of certain erectile dysfunction drugs should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Use with caution with bosentan, salmeterol, and immunosuppressants, and use lower dose of colchicine. Monitor blood levels of immunosuppressants because levels may increase. Kaletra can decrease the effects of Malarone. Kaletra may be taken with Sovaldi and Daklinza. May be taken with Harvoni unless Viread (tenofovir disoproxil fumarate) is part of HIV regimen. Kaletra should not be taken with Olysio, Viekira Pak, or Zepatier.

MORE INFORMATION

According to U.S. treatment guidelines, the 200 mg of Norvir and the higher rate of gastrointestinal side effects compared to other PIs using 100 mg Norvir, make Kaletra a less attractive drug option. It is neither a recommended nor alternative drug for first-time therapy. Last year, Kaletra plus Epivir was listed as an "other" regimen by DHHS HIV treatment guidelines for people who cannot take abacavir or tenofovir DF. Kaletra is recommended for pregnancy and pediatrics (as is boosted Reyataz), but data from 2012 adds to concerns about a link to premature births with Kaletra and other Norvir-boosted PIs. Taking with food and anti-diarrheal medicine helps lessen diarrhea. See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

The first co-formulated boosted PI, lopinavir/ritonavir was an important staple for HIV care in the early years of the millennium. Give credit where credit is due. That said, it is hard to imagine why it would be used in the U.S. today, given other drugs with longer half-lives, lower pill burden, and better tolerability and efficacy. One wonders whether usage will increase at all when this drug becomes generic, but again, the issue will be cost versus improved safety, tolerability, and performance for preferred therapies. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Kaletra is the name of a co-formulated protease inhibitor tablet. It contains lopinavir and ritonavir, which acts as a boosting agent. Proven to be more effective, Kaletra was approved at a time when already available PIs were failing patients. Many switched to Kaletra and continued taking it for many years without developing resistance. But as with most PIs, drug-drug interactions present a challenge. It's strongly recommended to read the label for the list of drug interactions and to discuss with a doctor all over-the-counter supplements and herbals, such St. John's wort, also being taken. The downside of Kaletra is the gastrointestinal side effects such as diarrhea, which could be managed if taken with food and anti-diarrhea medication. It could be prescribed two or three tablets twice a day or four tablets once a day, depending on the individual situation. In the treatment guidelines, Kaletra belongs to the other regimens with a moderate rate of recommendations. The DHHS guidelines demoted the use of Kaletra during pregnancy from preferred to alternative. —MOISÉS AGOSTO-ROSARIO

Norvir ritonavir, or RTV

PI PROTEASE INHIBITOR

USED ONLY AS A BOOSTER FOR OTHER DRUGS

STANDARD DOSE

Used as a boosting agent for other PIs (increases the levels of other PIs), at smaller doses of 100 to 200 mg, taken either once or twice a day with a meal.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Do not crush or chew tablets, always swallow whole. See drug label of the other PIs. Always take Norvir at the same time as the other PI prescribed. Approved for children older than one month; however, since it is only used as a booster, the use in children depends on the other PI. Capsule formulation requires refrigeration. Tablet formulation does not require refrigeration. Liquid formulation available, but is not very palatable. The taste of the liquid can be improved by mixing with chocolate milk, Ensure, or Advera within one hour of dosing. Liquid formula should not be taken by pregnant women, as it contains 43% alcohol.

MANUFACTURER

AbbVie
norvir.com
(800) 633-9110

AWP

$308.60 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

The side effect potential of Norvir is much lower now that we only use it as a booster at low doses. Most common side effects include stomach pain, nausea, diarrhea, and vomiting. Other less common side effects may include fatigue; tingling/numbness around the mouth, hands, or feet; loss of appetite; and taste disturbances. Norvir can also increase cholesterol and triglyceride levels.

POTENTIAL DRUG INTERACTIONS

Norvir interacts with many drugs. See package insert for the most complete list of interactions. Tell your provider or pharmacist about all medications, herbals, supplements, or over-the-counter (OTC) products you are taking or thinking of taking, prescribed or not, as there are many other drug interactions which are not listed here. Do not take with alfuzosin, Revatio, flecainide, propafenone, amiodarone, oral midazolam, triazolam, pimozide, rifapentine, rifampin, voriconazole, ergot derivatives, or the herb St. John's wort. Do not use lovastatin and simvastatin or co-formulations containing these drugs (Advicor and Vytorin) for the treatment of high cholesterol. Cholesterol-lowering alternatives are atorvastatin, rosuvastatin, pravastatin, pitavastatin, and fluvastatin, but should be used with caution and started at the lowest dose possible; monitor for increased side effects. Increases levels of fluticasone (found in Advair, Flonase, and Flovent) which may lead to Cushing's syndrome. Use an alternative corticosteroid and monitor for signs of Cushing's syndrome (increased abdominal fat, fatty hump between the shoulders, rounded face, red/purple stretch marks, bone loss, possible high blood pressure, and sometimes diabetes). Trazodone concentrations may increase; a lower dose of trazodone is recommended. Norvir may decrease levels of methadone, which may need to be increased. Use caution with anticonvulsants such as carbamazepine, phenobarbital, and phenytoin. Use calcium channel blockers (amlodipine, nifedipine, and others) with caution. Norvir may alter warfarin levels; additional monitoring may be required. Do not take Xarelto as Norvir can increase Xarelto concentrations and increase risk of bleeding. Cialis, Levitra, and Viagra levels are increased; doses should not exceed 10 mg Cialis or 2.5 mg Levitra per 72 hours, or 25 mg Viagra per 48 hours. Effectiveness of birth control pills may be decreased; consider the use of other contraception. Levels of the street drug ecstasy are greatly increased by Norvir, and at least one death has been attributed to the combination. GHB, another street drug, is also dangerous with Norvir. Clarithromycin levels can increase by up to 80%. Use with caution with bosentan, salmeterol, and immunosuppressants; use a lower colchicine dose. Norvir, when combined with another PI (Norvir + PI) may be taken with Sovaldi, Daklinza (dose may need adjustment), and Harvoni (if tenofovir disoproxil fumarate is not part of HIV regimen). Norvir + PI should not be taken with Olysio, Viekira Pak, or Zepatier.

MORE INFORMATION

The real strength of Norvir is its use with other PIs as a boosting agent. An alternative to Norvir was approved in 2014 (see Tybost page). Stomach side effects are reduced by taking Norvir with high-fat foods—however, some other HIV medicines should not be taken with high-fat foods. See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Ritonavir has long been abandoned as an antiviral drug. Its use as a pharmacokinetic booster is on the wane with the introduction of the booster cobicistat in combination with darunavir, atazanavir, and elvitegravir. Once a required component of all boosted PI regimens, there are diminishing reasons to prescribe ritonavir. Because it boosts the levels of many drugs, drug interactions must be carefully watched with ritonavir. Triglycerides and other lipids must be watched, too. While Norvir is on the wane, the situation will become more interesting when ritonavir is generic and available for new and possibly cheaper PI combos. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Once upon a time, Norvir (ritonavir) was approved as a treatment for HIV. It was one of the first PIs that slowed death rates due to HIV. For many, it was the rescuer from death. As with the other first-generation PIs, it caused many debilitating side effects, including gastrointestinal problems and increased risk for liver toxicity. Because of the way it is metabolized, ritonavir increases blood levels of other drugs. It was hard to take it and manage its toxicities and drug interactions. Even though it failed as a treatment, Norvir proved that at a lower dose, it was an effective booster for newer, more effective, and safer PIs. —MOISÉS AGOSTO-ROSARIO

Tybost cobicistat, or COBI

PKE PHARMACOKINETIC ENHANCER (BOOSTER); NOT AN ANTIRETROVIRAL

USED ONLY AS A BOOSTER FOR OTHER DRUGS

STANDARD DOSE

150 mg once a day with food taken at the same time with either Prezista 800 mg or Reyataz 300 mg.

Tybost is not an HIV drug, but is a "booster" used to increase the levels of Prezista 800 mg once daily or Reyataz 300 mg once daily. Tybost is not interchangeable with Norvir when used to increase the levels of other HIV medications.

Take a missed dose as soon as possible, unless it is closer in time to your next dose. Do not double up on your next dose.

Tybost should only be used in pregnancy if the benefits justify the risks. There are only animal data in pregnancy. Tybost has not been studied in individuals under 18 years of age, thus it should not be used in pediatric patients.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$230.90 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Common side effects (greater than 10%) seen in clinical studies include nausea, jaundice, and yellowing of the eyes. However, it was studied with Reyataz so the jaundice and yellowing of eyes were most likely due to the Reyataz. There may be a small increase in serum creatinine (SCr) and decrease in estimated creatinine clearance (CrCl). However, this does not affect actual kidney function. The SCr increase occurred within weeks of starting cobicistat and was reversible within a few days after stopping Tybost. The coadminstration of Tybost and Viread (tenofovir DF or TDF, also found in Atripla, Complera, Truvada, and Stribild) is not recommended if the CrCl is less than 70 mL/min.

POTENTIAL DRUG INTERACTIONS

Tybost interacts with many drugs, because as a booster it inhibits liver enzymes involved in drug metabolism. See the package insert for the most complete list of interactions. Tell your provider or pharmacist about all medications, herbals, and supplements that you're taking or thinking of taking, prescribed or not, before starting on a regimen that contains cobicistat. Do not take with alfuzosin, simvastatin, lovastatin, rifampin, irinotecan, pimozide, triazolam, oral midazolam, Revatio, and St. John's wort. Tybost may increase levels of fluticasone (Flonase, Advair, Flovent). Use an alternative corticosteroid and monitor for signs of Cushing's syndrome (increased abdominal fat, fatty hump between the shoulders, rounded face, red/purple stretch marks, bone loss, possible high blood pressure, and sometimes diabetes). Tybost may increase levels of certain calcium channel blockers, beta blockers, HMG-CoA reductase inhibitors (statins), antiarrhythmics, antidepressants, sedative-hypnotics, erectile dysfunction agents, inhaled corticosteroids, and norgestimate. Caution should be taken, with possible dose adjustments of these medications, when used with Tybost. Sporonox (antifungal) and Biaxin (antibiotic) may increase Tybost concentrations. Tybost may increase Biaxin levels. Rifabutin and some anti-seizure medications, such as carbamazepine (Tegretol) and phenytoin (Dilantin) may decrease Tybost levels. Do not take with Olysio, Viekira Pak, or Zepatier. Avoid Harvoni if tenofovir disoproxil fumarate (TDF) is part of the HIV regimen. Tybost has similar drug interactions as Norvir, but they are not interchangeable and there may be some drug interactions with Tybost that are not seen with Norvir.

MORE INFORMATION

Tybost is not an HIV medication. It is used to boost blood levels of Prezista and Reyataz, and is available in fixed-dose tablets with those medications (see Evotaz and Prezcobix). Cobicistat is also part of the single-tablet regimens Genvoya and Stribild, both recommended therapies in U.S. HIV treatment guidelines. Tybost shares some of the same side effects of increased cholesterol and increased triglycerides as Norvir; however in clinical trials they were less pronounced.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Cobicistat is not an antiviral drug. It only boosts levels of other drugs, thus it is a useful replacement for ritonavir. It causes small elevations (less than 0.4 mg/dL within the first 12 weeks of dosing) in blood levels of creatinine, a measure of kidney function, but does not affect kidney function itself. It also has the same drug interactions as ritonavir through its effects on cytochrome P450 pathways, and is associated with similar increases in lipids, particularly triglycerides. Its main advantage is that its owner, Gilead, has been willing to develop the drug in combination regimens with drugs owned by other companies, thus giving us COBI-boosted atazanavir and darunavir. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Tybost, or cobicistat, is a drug developed to work as an enhancer that boosts the level of other HIV drugs. Cobicistat is not an antiviral. This enhancer inhibits liver enzymes used by many HIV drugs to be metabolized in the liver. Being a CYP3A4 inhibitor like ritonavir, it causes the same side effects as ritonavir; it increases triglycerides and cholesterol, and has interactions with many other drugs. One good thing about cobicistat is, contrary to the greedy manufacturer of ritonavir (which raised the price 400% when the only use of the drug was as a booster), it is less expensive and licensed for use in fixed-dose combination by other companies.
—MOISÉS AGOSTO-ROSARIO

Truvada

emtricitabine/tenofovir disoproxil fumarate, or FTC/TDF

NRTI NUCLEOSIDE/NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOSIDE, OR "NUKE") | FIXED-DOSE COMBINATION

DHHS RECOMMENDED FOR FIRST-LINE USE

STANDARD DOSE

For adults and children 12 years or older weighing more than 77 pounds (35 kg), one tablet (200 mg emtricitabine / 300 mg tenofovir disoproxil fumarate) once daily, with or without food.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. The dosing frequency needs to be adjusted for people with decreased kidney function. Truvada should not be used if kidney function is less than 30 mL/min or if you are on dialysis. Truvada once daily is also approved for prevention (pre-exposure prophylaxis, or PrEP) in confirmed HIV-negative adults; go to positivelyaware.com/truvada-for-prep.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$1,761.36 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the pages for the individual drugs contained in Truvada—Viread and Emtriva. Overall, it is well tolerated, but some may experience nausea, headache, stomach pain, or weight loss. Skin discoloration on palms and soles may also occur. The tenofovir disoproxil fumarate (Viread) in Truvada is associated with decreases in bone mineral density (BMD). BMD monitoring should be considered in people who have a history of bone fracture due to disease or are at risk for osteopenia or osteoporosis. It is unknown if calcium supplements with or without vitamin D would be beneficial. While calcium and vitamin D levels can be checked to assess the need for these supplements, talk with your provider before starting on your own. Truvada can cause kidney toxicities. Tell your provider about any pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. If Emtriva, Viread, or Truvada are discontinued abruptly in HBV-co-infected patients, exacerbation of hepatitis may occur. See Emtriva for hepatitis B information.

POTENTIAL DRUG INTERACTIONS

See the pages for the individual drugs contained in Truvada—Viread and Emtriva. Do not take with Atripla, Combivir, Complera, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, or Viread since all or part of these medications are already in Truvada or it contains equivalent medications. Tenofovir decreases the concentration levels of Reyataz, therefore when Reyataz is taken with Truvada or Viread, it is recommended that Reyataz 300 mg is taken with Norvir 100 mg or Tybost 150 mg (all as a single daily dose with food). In addition, Reyataz/Norvir, Prezista/Norvir, and Kaletra increase tenofovir concentrations. It is recommended that patients taking Reyataz/Norvir, Prezista/Norvir, or Kaletra with Truvada should be monitored for Truvada-associated adverse events, particularly decreases in kidney function. Avoid taking Truvada with drugs that negatively affect the kidneys, including chronic use or high doses of anti-inflammatory drugs like Advil, Aleve, and Motrin. Truvada may be used with hepatitis C drugs such as Daklinza, Harvoni, Sovaldi, Olysio, Viekira Pak, or Zepatier, depending on the third drug in the HIV regimen.

MORE INFORMATION

Currently, DHHS HIV treatment guidelines recommend Truvada over Epzicom as the NRTI component for first-time therapy (unless Epzicom is paired with Tivicay). Studies reported that while both Epzicom and Truvada reduced viral load, for those people who started treatment with a viral load of more than 100,000, Epzicom was "less effective at controlling HIV" in the regimens tested. In studies using Tivicay in the regimen, Truvada and Epzicom were equally effective regardless of viral load. Kidney function must be monitored before and during treatment with Truvada and it may not be a good option for patients with underlying kidney problems. A new version of this drug, substituting tenofovir alafenamide (TAF) for TDF, will be on the market soon (see emtricitabine/tenofovir alafenamide page). Less kidney and bone issues were seen with TAF than TDF in clinical trials. The components of Truvada are also contained in three once-daily single-tablet regimens: Atripla, Complera, and Stribild.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

The most commonly used backbone in U.S. regimens is FTC/TDF. Generally well tolerated and potent, with a relatively high genetic barrier, this backbone does have the downside of lowering of bone density over time, and affecting kidney biomarkers, and sometimes kidney function. Kidney toxicity is relatively infrequent and usually mild and reversible, but occasionally can be severe. It is interesting to watch the clinical trials of TAF shed light on the renal toxicity of TDF. Truvada, so far, is the only drug that also has an FDA-approved indication for HIV prevention as pre-exposure prophylaxis (PrEP). Both drugs in the compound have activity against hepatitis B (HBV), and stopping abruptly can cause a flare of HBV in co-infected individuals. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Truvada is the brand name of a fixed-dose combination containing emtricitabine and tenofovir disoproxil fumarate, or TDF. Both drugs have long half-lives and can be taken once a day. Truvada is a component of four of the five first-line recommended regimens by the DHHS HIV treatment guidelines. It is the most prescribed NRTI fixed-dose combination with other antiretrovirals. Truvada may cause damage to the kidneys and loss of bone density, which is why it's important to monitor kidney function and bone density. Yet, Truvada is well tolerated and potent. It is approved for vulnerble HIV-negative individuals to prevent HIV infection.
—MOISÉS AGOSTO-ROSARIO

Epzicom

abacavir sulfate (abacavir)/lamivudine, or ABC/3TC

NRTI NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOSIDE, OR "NUKE") | FIXED-DOSE COMBINATION

DHHS ALTERNATIVE (UNLESS WITH TIVICAY)

STANDARD DOSE

One tablet (600 mg abacavir / 300 mg lamivudine), once a day, with or without food.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Approved for children weighing 55 pounds (25 kg) or more. Not recommended for those with decreased kidney function (creatinine clearance less than 50 mL/min), or those with liver problems, because dose adjustments are not possible with this fixed-dose combination.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$1,413.59 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

See the individual drugs contained in Epzicom—Epivir (lamivudine) and Ziagen (abacavir). Common side effects may include headache, nausea, fatigue, and insomnia. Of note is the hypersensitivity reaction (HSR, an allergic-like reaction) warning on abacavir (see Ziagen for details of symptoms). To avoid HSR, a blood test for HLA-B*5701 (a genetic marker) can identify patients at risk for this reaction. This test is covered by most insurance and also by LabCorp/ViiV (see co-pay chart). About 90% of HSR occurs within the first six weeks of treatment. Symptoms of HSR usually worsen, very slowly, with every dose. Treatment should be immediately discontinued and you can never take another product containing abacavir, such as Epzicom, Triumeq, Trizivir, or Ziagen, again (called "rechallenging"). Rechallenging could cause a rare life-threatening reaction. (This does not apply to missed doses when there's no HSR, but watch for symptoms if you've stopped the drug for at least a few days.) If you are co-infected with HIV and HBV and you stop Epzicom, your HBV may reactivate and you may experience signs and symptoms of acute HBV. You should be closely monitored by your physician. Some observational studies have seemed to indicate that abacavir may increase the risk of cardiovascular events, including heart attacks, in people with greater risk factors (such as smoking, diabetes, high blood pressure, older age, high cholesterol, and drug use), though other studies have found no increased risk. The consensus on whether abacavir truly has this risk has not been reached. People who have high risk for heart disease should be monitored more closely; the decision to stop or never start a regimen containing abacavir is up to you and your provider.

POTENTIAL DRUG INTERACTIONS

See the individual drugs contained in Epzicom, Epivir and Ziagen. Do not take with Atripla, Combivir, Complera, Emtriva, Epivir, Epivir-HBV, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, Truvada, or Ziagen, since all or part of these medications are already in Epzicom or contain medications equivalent to it. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, whether they are prescribed or not. Alcohol can increase the levels of abacavir and therefore can increase the possibility of side effects.

Epzicom may be used with hepatitis C drugs such as Daklinza, Harvoni, Sovaldi, Olysio, Viekira Pak, or Zepatier, depending on the third drug in the HIV regimen.

MORE INFORMATION

Triumeq, a single-tablet regimen (STR) containing Tivicay and Epzicom, is a recommended therapy under Department of Health and Human Services (DHHS) HIV guidelines. Otherwise, DHHS guidelines recommend Truvada over Epzicom as the backbone for the NRTI component of an HIV drug combination for first-time therapy, with Epzicom listed as an alternative NRTI backbone. The lamivudine portion of Epzicom is also used to treat the hepatitis B virus (HBV); see Epivir. See information about generics on the Epivir page.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Abacavir/3TC is recommended in combination with boosted darunavir as alternative initial therapy for persons with negative HLA-B*5701. Although each of the components is generic, the combination is still patent protected. In patients with viral loads above 100,000 copies/mL, ABC/3TC was found to be inferior to TDF/FTC when given with EFV or ATV/r. The same cautions about abacavir hypersensitivity and potential cardiovascular risk apply as for Ziagen.

—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Epzicom is a fixed-dose combination tablet containing abacavir (Ziagen) and lamivudine (Epivir). Epzicom is used as an alternative to Truvada in patients who can't tolerate TDF due to kidney toxicity or loss of bone density. Epzicom may increase the risk of heart attacks and cardiovascular disease. In patients whose viral load is more than 100,000 copies it can sometimes be not as effective (unless taken in combination with Tivicay or as Triumeq). —MOISÉS AGOSTO-ROSARIO

Emtriva emtricitabine, or FTC

NRTI NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOSIDE, OR "NUKE")

DHHS RECOMMENDED FOR FIRST-LINE USE (A COMPONENT OF TRUVADA)

STANDARD DOSE

One 200 mg capsule once a day, with or without food. The dosing needs to be adjusted for children and people who have decreased kidney function.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. It is also available as an oral solution for children any age and adults who are not able to swallow the capsules.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

$644.44 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Emtriva (emtricitabine) is very well tolerated. The most common side effects (rarely seen) may include headache, diarrhea, and nausea. Emtriva also treats hepatitis B virus (HBV), therefore, a person co-infected with HIV and HBV may experience a flare-up of HBV when stopping Emtriva (see "More information"). Skin discoloration (darkening of the skin on the palms and the soles) can occur, but is generally mild and otherwise harmless.

POTENTIAL DRUG INTERACTIONS

No significant drug interactions. Do not take Emtriva with Atripla, Combivir, Complera, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, or Truvada, since they contain emtricitabine or medication equivalent to it. Emtriva may be used with hepatitis C drugs such as Daklinza, Harvoni, Sovaldi, Olysio, Viekira Pak, or Zepatier, depending on the other components in the HIV regimen.

MORE INFORMATION

Emtriva (emtricitabine) is similar to Epivir (lamivudine); both treat HIV and HBV and have the same resistance profile, meaning that if your virus is resistant to one drug, it will be resistant to the other. Emtriva is active against chronic hepatitis B (though it is not FDA approved for this indication). You should never be treated only for HBV without treatment for HIV. If you have HIV and HBV and your HBV needs treatment, guidelines recommend treatment for both viruses. Emtriva and tenofovir (available as one tablet, Truvada) can be used as the NRTI backbone to treat HIV and HBV simultaneously. However, there are also other HBV treatments that can be combined with HIV meds. If you are co-infected with HIV and HBV and you stop Emtriva, your HBV may reactivate and you may experience signs and symptoms of acute HBV. You should be closely monitored by your provider. If your HIV develops resistance to Epivir or Emtriva, it does not mean that your HBV is also resistant to them. Truvada is approved for HIV treatment and for HIV prevention as PrEP (pre-exposure prophylaxis; go to positivelyaware.com/truvada-for-prep). Truvada is a recommended NRTI combination in the Department of Health and Human Services (DHHS) HIV treatment guidelines for first-time therapy. Sometimes, drug resistance that the virus develops against emtricitabine makes the virus less able to reproduce, meaning that it multiplies at a slower rate. It also improves the antiviral activity of Retrovir (zidovudine) and Viread (tenofovir), and for that reason, some providers continue Emtriva treatment in combination with other NRTIs after resistance develops. Emtriva oral solution should be kept in the refrigerator. If kept at room temperature, the oral solution should be used within three months. Emtriva is part of the single-tablet regimens Atripla, Complera, Genvoya, and Stribild.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

FTC is mostly used in combination with TDF, largely because they are Gilead-siblings. As a close cousin to 3TC, they share a similar resistance pattern, and the presence of M184V actually improves virologic response to TDF. Although it is a nucleoside, it does not seem to be strongly associated with many of the class effects such as lactic acidosis and lipodystrophy. FTC is active against HBV and can precipitate a flare-up upon discontinuation. Although its half-life is slightly longer, FTC and 3TC are generally regarded as interchangeable from a clinical perspective. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Emtriva or emtricitabine is a very safe and well tolerated drug. Its chemical structure is the same as lamivudine. They both show equal safety and effectiveness. The only difference is that emtricitabine has a longer half-life than lamivudine. Emtriva is one of the two drugs in Truvada, which became an alternative to Combivir, the first fixed-dose combination tablet containing zidovudine and lamivudine. It is also in the single-tablet regimens Atripla, Complera, Genvoya, and Stribild. It is also used to treat HBV. —MOISÉS AGOSTO-ROSARIO

Epivir lamivudine, or 3TC

NRTI NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOSIDE, OR "NUKE")

DHHS RECOMMENDED (CAN BE USED INTERCHANGEABLY WITH FTC)

STANDARD DOSE

One 300 mg tablet once a day (or one 150 mg tablet twice daily), with or without food

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dose should be adjusted for people with kidney impairment. Dose for children 3 months to 16 years of age is 4 mg per 2.2 pounds (1 kg) twice daily to a maximum of 150 mg twice daily. A strawberry/banana-flavored liquid (10 mg/1 mL) is available. Generic is available.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$477.92 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Epivir is very well tolerated. Side effects (though rarely seen) may include headache, nausea, fatigue, insomnia, malaise (general ill feeling), nasal symptoms, and cough. Flare-up of hepatitis B (HBV) in people co-infected with HBV has occurred when Epivir was discontinued because it also treats HBV (see "More information").

POTENTIAL DRUG INTERACTIONS

No significant drug interactions. Do not take Epivir with Atripla, Combivir, Complera, Emtriva, Epivir-HBV, Epzicom, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, or Truvada, since they contain Epivir or medication equivalent to it. Epivir may be used with hepatitis C drugs such as Daklinza, Harvoni, Sovaldi, Olysio, Viekira Pak, or Zepatier, depending on the other components in the HIV regimen.

MORE INFORMATION

One benefit of Epivir is that the drug resistance the virus develops against the drug makes the virus less able to reproduce. This mutation also slightly improves the antiviral activity of Retrovir (zidovudine or AZT) and Viread (tenofovir disoproxil fumarate), and for that reason, some doctors will continue to use Epivir after resistance develops. Epivir is also approved for the treatment of hepatitis B virus (HBV), under the brand name Epivir-HBV, which has a lower dose than traditional Epivir. Epivir-HBV is used only in people without HIV. It is important to note that if you have HIV and HBV, you will need to take full-dose Epivir along with a complete HIV regimen to treat both infections. You should never be treated only for HBV without treatment for HIV. Epivir and Viread both work against HBV and HIV and can be used together as the NRTI backbone to increase activity and decrease the risk of HBV drug resistance, but there are other HBV treatments available that can be combined with HIV meds. Truvada, for example, contains Viread and a medication very similar to Epivir, formulated in one pill. If you are co-infected with HIV and HBV and you stop taking Epivir, your HBV may reactivate and you may experience signs and symptoms of acute HBV. You should be closely monitored by your physician. If your HIV develops resistance to lamivudine, it doesn't mean that your HBV is also resistant to it. Lamivudine is also available in four combination products: Combivir (with zidovudine); Epzicom (with abacavir); Trizivir (with zidovudine and abacavir); and Triumeq (with dolutegravir and abacavir).

Epivir is available as generic lamivudine, which should be as effective and well tolerated as the brand name drug Epivir. Some insurers may require patients to take regimens containing generics rather than brand name drugs, including simpler co-formulated products. For example, since both zidovudine (Retrovir) and lamivudine are available in generic form, a person might have to take these two generic pills instead of the fixed-dose combination tablet Combivir. The availability of generics might also limit choices of therapy. For example, newer brand name drugs and co-formulations, such as Genvoya or Triumeq, might be restricted to patients who can't physically tolerate generic regimens.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

The oldest HIV drug currently still recommended for preferred use, 3TC is truly the long-term survivor of HIV therapeutics. Apparently it can do no wrong as even its low resistance barrier and ubiquitous M184V mutation have a positive effect in increasing sensitivity to TDF and AZT. Some even add 3TC to failing regimens for a "fitness" advantage, although the clinical benefit of this approach is difficult to prove. Toxicity to 3TC is mild and does not appear to be a major contributor to well known "nuke" class effects such as lactic acidosis and lipodystrophy. Like FTC, 3TC is active against HBV and carries the same risk of flare-up when discontinued in co-infected persons. Similar to FTC in most respects, it will probably be included in generic combinations when TDF loses patent protection in 2017.

—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Epivir (lamivudine) is the oldest antiretroviral still in use today. It is well tolerated, very effective, and has no drug-drug interactions. It has been used in combination with other NRTIs like zidovudine (Combivir) and abacavir (Epzicom), and is a component of the recently approved single-tablet regimen Triumeq. It is used to treat individuals co-infected with HIV and HBV and if discontinued may cause a flare up of the HBV disease. It seems to work best in combination with other nukes as the backbone of a regimen. The only downside is its resistance profile. One mutation (M184V) can reduce its effectiveness. —MOISÉS AGOSTO-ROSARIO

Viread

tenofovir disoproxil fumarate, or TDF

NRTI NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOTIDE, OR "NUKE")

DHHS RECOMMENDED (A COMPONENT OF TRUVADA)

STANDARD DOSE

One 300 mg tablet once a day, with or without food, for adults and children 12 years and older weighing at least 77 lbs (35 kg).

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Dosing frequency needs to be adjusted for people with decreased kidney function. 150 mg, 200 mg, 250 mg tablets, and oral powder are available for children ages 2 to 12 weighing at least 37 lbs (17 kg); dose is based on weight. FDA approved for chronic HBV in patients 12 years and older.

MANUFACTURER

Gilead Sciences, Inc.
viread.com
(800) GILEAD-5
(445–3235)

AWP

$1,109.64 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Well tolerated, but may include nausea, diarrhea, vomiting, and gas. Decreases in bone mineral density (BMD) have been observed. BMD monitoring should be considered in people who have a history of bone fracture due to bone disease or are at risk for osteopenia or osteoporosis. Viread may cause kidney toxicities. Creatinine clearance (CrCl) should be assessed before initiating treatment. In addition to CrCl, glucose and protein in the urine and serum phosphorus should be monitored more often in patients at risk for kidney problems. Tell your provider about any pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. Since Viread is not metabolized by the liver, it is believed there should be minimal impact on individuals with liver disease.

POTENTIAL DRUG INTERACTIONS

Do not take Viread (TDF) with Atripla, Complera, Hepsera (adefovir), Stribild, Genvoya, or Truvada, since TDF is in these drugs or they contain a similar medication. Viread decreases the levels of Reyataz, therefore, Reyataz 300 mg must be boosted with Norvir 100 mg or Tybost 150 mg (taken together with food) when used in combination with TDF. Kaletra, Prezista/Norvir, and Reyataz/Norvir increase Viread levels, but there is no dose adjustment needed. Patients taking Kaletra, Prezista/Norvir, or Reyataz/Norvir with TDF should be monitored for Viread side effects (including kidney disorders) due to the higher TDF levels. Avoid taking Viread with drugs that negatively affect the kidneys, including chronic use or high doses of NSAIDS (non-steroidal anti-inflammatory drugs, such as Advil, Aleve, or Motrin). Viread may be used with hepatitis C drugs such as Daklinza, Harvoni, Sovaldi, Olysio, Viekira Pak, or Zepatier, depending on the other components in the HIV regimen.

MORE INFORMATION

TDF with emtricitabine, as Truvada, is a recommended NRTI combination by DHHS HIV treatment guidelines for first-time therapy. A new version of tenofovir, called tenofovir alafenamide (TAF), will replace TDF in certain fixed-dose combinations. Genvoya is the first single-tablet regimen to contain TAF instead of TDF, and others will be available soon. In clinical trials, TAF had less kidney and bone issues than TDF. The NIH reported last year that infants exposed in the womb to TDF may have lower bone mineral content than those exposed to other antivirals. Tenofovir DF was approved in 2012 as part of Truvada for HIV prevention as PrEP (pre-exposure prophylaxis; see Truvada for PrEP page online). Serious kidney problems have been rare and mostly in those with pre-existing kidney disease or taking other kidney-toxic drugs. Two large observational studies found a greater risk of kidney toxicity with TDF than with other HIV meds. It is recommended that individuals with impaired kidney function be monitored closely. Remember that HIV itself has a negative effect on kidneys and bones. TDF is FDA approved for hepatitis B treatment, but should not be used alone by people with both hep B and HIV. If you have HIV and HBV coinfection, you should never be treated for HBV only since guidelines recommend treatment for both viruses to avoid losing HIV treatment options. Truvada can be used as the NRTI backbone to treat HIV and HBV simultaneously; however, HIV treatment requires a third medication. If your HIV develops resistance to TDF or emtricitabine, it doesn't mean that your HBV is also resistant to them. If you have HIV and HBV and you stop TDF, you may experience symptoms of acute HBV. You should be closely monitored by your provider. TDF is part of the single-tablet regimens Atripla, Complera, Genvoya, and Stribild.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Tenofovir DF is only occasionally used as a single drug, even in the setting of 3TC/FTC resistance, because the M184V mutation confers additional sensitivity to TDF without additional toxicity. With few short-term side effects and a forgivingly long half-life, it plays an important role as a component of several combination regimens. It also has substantial activity against HBV and discontinuation can provoke a flare. Its Achilles' heel is its well-characterized bone and kidney toxicity. Tenofovir DF should become generic in 2017, opening up interesting possibilities for fully and partially generic combinations. Apparently TAF will not be developed as a stand-alone drug. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Viread or tenofovir disoproxil fumarate (TDF) is potent and well tolerated, and has a long half-life. Monitoring kidney function is important while taking TDF. It has been shown to cause kidney toxicity as well as loss of bone density. These side effects tend to disappear when discontinued. It is a component of Atripla, Complera, Stribild, and Genvoya single-tablet regimens as well as of Truvada, a widely used fixed-dose combination as a nuke backbone and as a prophylaxis for HIV infection. Its manufacturer has developed a pro-drug or improved version of TDF known as TAF or tenofovir alafenamide fumarate. TAF is a component of the single-tablet regimen Genvoya and eventually will replace TDF in most of the fixed-dose combinations and single-tablet regimens that use it. —MOISÉS AGOSTO-ROSARIO

Ziagen

tenofovir disoproxil fumarate, or TDF

NRTI NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOSIDE, OR "NUKE")

DHHS ALTERNATIVE (A COMPONENT OF EPZICOM) UNLESS IN TRIUMEQ

STANDARD DOSE

Adults: two 300 mg tablets once a day (or one 300 mg tablet twice a day), with or without food. Children 3 months and older: Dose varies with weight. Scored tablets and strawberry-banana flavored liquid available.

Dose adjustment is not needed for people with kidney impairment. Dose adjustment is needed for people with mild liver impairment (200 mg twice daily). Abacavir should not be used for people with moderate or severe liver disease.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$669.06 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

More common side effects may include nausea, vomiting, diarrhea, fatigue, headache, fever, rash, and trouble sleeping. In pediatric patients, the more common side effects were fever and/or chills, nausea and vomiting, skin rashes, and ear/nose/throat infections.

Approximately 8% of people who took abacavir in clinical trials (where screening for HLA-B*5701, a genetic marker associated with abacavir hypersensitivity, was not performed) experienced hypersensitivity reaction (HSR), an allergic-like reaction. To avoid HSR, a blood test for HLA-B*5701 should be done to identify patients at risk for this reaction. This test is covered by most insurance and also by LabCorp/ViiV (see co-pay chart, page 58). If the HLA-B*5701 test is positive, you are at an increased risk for HSR and abacavir should not be used. An allergy to it should be entered in your medical record. A negative HLA-B*5701 test does not mean you won't have HSR, but the risk is very low. Symptoms of HSR usually include some combination of the following: fever, skin rash, malaise (general ill feeling), severe nausea, headache, muscle ache, chills, diarrhea, vomiting, abdominal pain, respiratory symptoms (cough, difficulty breathing, sore throat), and/or joint pain. Symptoms are listed on the patient information sheet and warning card that you receive each time you fill your prescription. You should keep the warning card with you. HSR might be confused with flu, but symptoms of HSR usually worsen, very slowly, with every dose.

People who think they are experiencing HSR must be evaluated by an experienced HIV provider right away before they stop taking abacavir. Do not use a skin patch test to confirm HSR. Symptoms usually resolve after permanent discontinuation. If you develop HSR, abacavir should be stopped and you can never take abacavir or any product containing abacavir (Epzicom, Trizivir, Ziagen, or Triumeq) again (starting again is called rechallenging). Rechallenging can cause a rare life-threatening reaction. This does not apply to missed doses when there is no HSR, but watch for symptoms if you've stopped the drug for a few days, preferably under the observation of others who can call for medical help if you develop symptoms.

Some observational studies seem to suggest that abacavir may increase the risk of cardiovascular events, including heart attacks, in people with risk factors (such as older age, smoking, diabetes, high blood pressure, high cholesterol, and drug use), especially within the first 6 months of therapy. However, other studies, including a large meta-analysis, have shown no increase in cardiovascular risk. To date, no consensus has been reached on the association of abacavir with cardiac risk or a possible mechanism for the association. People who have high risk for heart disease are monitored more closely and the decision to stop or never start a regimen containing abacavir is of course up to you and your provider.

POTENTIAL DRUG INTERACTIONS

Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, whether they are prescribed or not. Do not take with Epzicom, Triumeq, or Trizivir, since abacavir is already in these medications. Excessive alcohol use increases abacavir levels and may increase side effects.

MORE INFORMATION

One of the reasons abacavir is a DHHS alternative drug is that one study found that abacavir/lamivudine (Epzicom) was inferior to tenofovir/emtricitabine (Truvada) in getting people undetectable when their pre-treatment viral load was over 100,000. However, when combined with Tivicay (dolutegravir), Epzicom performed just as well as Truvada in people with high viral loads (over 100,000). Hence, Triumeq is the only abacavir-containing regimen recommended by DHHS for initial therapy. It is recommended that people with symptoms of acute respiratory disease consider HSR even if another diagnosis such as pneumonia, bronchitis, or flu is possible. FDA researchers reported finding a mechanism for auto-immune drug reactions, including abacavir HSR, and hope it helps improve drug safety in the future. Abacavir is part of Epzicom, Trizivir, and Triumeq; see those pages.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

The second-oldest drug still in widespread use, abacavir is generally well tolerated as long as hypersensitivity does not occur. The abacavir hypersensitivity syndrome can be fatal if the drug is taken again (rechallenge) after an initial hypersensitivity reaction has occurred. With physician and patient education, and the use of a genetic test (HLA-B*5701) that is quite successful in predicting risk for hypersensitivity, the reaction is currently rarely seen and, if seen, can be easily managed by experienced practitioners. There are persistent concerns that abacavir is associated with a higher incidence of cardiovascular diseases in several large observational studies. Currently it is only preferred for initial use as part of fixed-dose dolutegravir/abacavir/3TC. Although not used for HBV treatment, it has some activity against the virus and can precipitate flares when discontinued.
—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Ziagen (abacavir) was well received when approved in the 90's because of its once-a-day dosing and ability to work against HIV resistant to zidovudine or lamivudine. During the first years after approval it was associated with a very severe hypersensitivity reaction. Later on a blood test was developed to identify the genetic variation HLA-B*5701 that caused the reaction. The blood test is a requirement for individuals considering abacavir as a stand-alone drug or as a component of Epizom or the single-tablet regimen Triumeq. Ziagen has also been associated with cardiovascular disease and heart attacks. —MOISÉS AGOSTO-ROSARIO

Brand name yet to be determined

emtricitabine/tenofovir alafenamide, or FTC/TAF

NRTI NUCLEOSIDE/NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITOR (NUCLEOSIDE, OR "NUKE") | FIXED-DOSE COMBINATION

DHHS RATING NOT YET ESTABLISHED

STANDARD DOSE

The dosing guidelines are based on Truvada. For adults and children 12 years or older weighing more than 77 pounds (35 kg), one tablet (200 mg emtricitabine / 25 mg tenofovir alafenamide) once daily, with or without food.

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. Should not be used if kidney function is less than 30 mL/min or if you are on dialysis.

MANUFACTURER

Gilead Sciences, Inc.
gilead.com
(800) GILEAD-5
(445–3235)

AWP

Not yet available.

POTENTIAL SIDE EFFECTS AND TOXICITY

The side effect profile is based on Truvada. Overall, it is well tolerated, but some may experience nausea, headache, stomach pain, or weight loss. Skin discoloration on palms and soles may also occur. May affect the bones and kidneys. In clinical trials, less bone and kidney issues were seen with TAF versus TDF. Tell your provider about any pain in extremities, persistent or worsening bone pain and fractures, with or without muscular pain or weakness, as these could be signs of kidney problems. If discontinued abruptly in HBV-co-infected patients, exacerbation of hepatitis may occur. See Emtriva for hepatitis B information.

POTENTIAL DRUG INTERACTIONS

Drug interaction potential is based on Truvada. Do not take with Atripla, Combivir, Complera, Emtriva, Epivir, Epivir-HBV, Epzicom, Genvoya, Hepsera, Stribild, Triumeq, Trizivir, Truvada, or Viread since all or part of these medications are already in this drug or it contains equivalent medications. Tenofovir decreases the concentration levels of Reyataz, therefore when Reyataz is taken with tenofovir-containing drugs, it is recommended that Reyataz 300 mg be taken with Norvir 100 mg or Tybost 150 mg (all as a single daily dose with food). In addition, Reyataz/Norvir, Prezista/Norvir and Kaletra increase tenofovir concentrations. It is recommended that patients taking Reyataz/Norvir, Prezista/Norvir, or Kaletra with tenofovir-containing drugs should be monitored for tenofovir-associated adverse events, particularly decreases in kidney function. This interaction may have less clinical significance because there is a 90% lower serum (blood) tenofovir concentration with TAF versus TDF. Avoid taking with drugs that negatively affect the kidneys, including chronic use or high doses of anti-inflammatory drugs like Advil, Aleve, and Motrin. Can be used with hepatitis C drugs such as Harvoni, Sovaldi, Olysio, Daklinza, Viekira Pak, or Zepatier, depending on the third drug in the HIV regimen.

MORE INFORMATION

Expected to be on the market April 2016, this is the new version of Truvada, which is currently recommended by the Department of Health and Human Services (DHHS) HIV treatment guidelines for first-time therapy. Instead of TDF, however, this drug uses TAF, which reduces serum tenofovir concentration by 90%. A separate fixed-dose combination is expected to be approved at the same time, containing 10 mg of TAF and to be used with protease inhibitors as well as regimens containing the boosters Norvir or Tybost. Less kidney and bone issues were seen with TAF than TDF in clinical trials.

See package insert, when available, for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

FTC/TAF, the kinder, gentler (to kidneys and bone) cousin of FTC/TDF (Truvada), is likely to be approved by FDA based upon data submitted for the approval of E/C/F/TAF, data from a study that switched patients from FTC/TDF to FTC/TAF, and data showing that the drugs are bioequivalent. All evidence points to fewer kidney and bone toxicities with the TAF formulation, even though cholesterol may rise somewhat (see Genvoya). The expected FDA ruling date is April 7. It is important to note that, although Truvada is approved for pre-exposure prophylaxis (PrEP), FTC/TAF has not been tested for PrEP so far, and the expected FDA approval will only be for treatment. FTC/TAF is being studied in monoinfected persons with HBV and Gilead has said that it will file for approval this spring and that data will be presented at conferences in 2016. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

A better version of Truvada is in the making. It contains tenofovir alafenamide fumarate (TAF), instead of the original tenofovir disoproxil fumarate (TDF). Clinical trials have shown that this improved fixed-dose combination is not inferior to the original Truvada in suppressing viral load, when combined with another drug. The advantage of TAF is that it reaches higher levels of drug inside the cell and lower levels in the blood with less dosing, compared to TDF. This translates into a more potent and safer drug. Kidney toxicity and loss of bone density have been significantly reduced with TAF. The new version of Stribild (Genvoya) contains TAF. Eventually, TAF will replace TDF. TAF will not be used for PrEP until clinical trials using it for prevention are conducted.
—MOISÉS AGOSTO-ROSARIO

Edurant rilpivirine, or RPV

NNRTI NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NON-NUCLEOSIDE, OR "NON-NUKE")

DHHS ALTERNATIVE WITH LIMITATIONS (A COMPONENT OF COMPLERA) AND ONLY WITH TRUVADA

STANDARD DOSE

One 25 mg tablet once daily with a meal, in patients 12 years of age and older weighing at least 77 lbs (35 kg).

Take a missed dose as soon as possible with a meal, unless it is closer to the time of your next dose. Do not double up on your next dose. For proper absorption, it must be taken with a meal that you chew, not nutritional drinks or protein shakes. Taking Edurant without food could result in a 40% decrease in the drug absorption and may lead to HIV resistance.

MANUFACTURER

Janssen Therapeutics
edurant.com
(800) JANSSEN
(526-7736)

AWP

$1,075.16 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Most common side effects occurring in 3–5% of study subjects were insomnia, headache, rash, and depressive disorders. Tell your doctor right away if you experience feelings of sadness, hopelessness, anxiety, or restlessness, or have suicidal thoughts or actions. Skin rash can be serious; call your doctor if you get a rash. Stop Edurant and seek medical help right away if the rash is accompanied by other symptoms such as swelling of face, mouth, tongue, or throat; mouth sores or blisters on body; inflamed eye; fever; dark urine; or pain on the right side of stomach.Two different studies comparing Edurant to Sustiva showed that Edurant was slightly better tolerated. Edurant also has minimal negative effects on "bad" cholesterol, total cholesterol, and triglycerides when compared to Sustiva. Edurant improved "good" cholesterol slightly less than Sustiva. Liver problems can occur with Edurant (even in patients without a history of liver disease).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbs, and supplements you are taking or thinking of taking, prescribed or not. Edurant should not be taken with other non-nukes or Complera, as the latter contains rilpivirine. Cannot be taken with the anti-seizure medications carbamazepine, oxcarbazepine, phenobarbital, and phenytoin; the anti-TB drugs rifampin and rifapentine; proton pump inhibitors (Aciphex, Nexium, Prevacid, Protonix, and Prilosec); or the herb St. John's wort. Do not take with more than one systemic dose of the steroid dexamethasone. Antacids should be taken two hours before or at least four hours after Edurant. Acid-reducing drugs (Pepcid, Tagamet, Zantac, and Axid) should be taken 12 hours before or four hours after an Edurant dose. If administered with rifabutin, the dose of Edurant should be increased to two 25 mg tablets once daily with a meal. When rifabutin is stopped, Edurant dose should be decreased to 25 mg daily. Monitor for worsening of any fungal infections when Edurant is used with anti-fungal medications like fluconazole, itraconazole, ketoconazole, posaconazole, and voriconazole; dose adjustment for these medications may be needed. Use azithromycin when possible instead of the antibiotics clarithromycin, erythromycin, and telithromycin. Methadone levels are reduced slightly and patients should be monitored for symptoms of withdrawal. Should be used with caution when taken with medications with a known risk of Torsades de Pointes or QT prolongation (these abnormal heart rhythms can make the heart stop). No dose adjustment needed with hepatitis C medications Daklinza, Harvoni, Olysio, Sovaldi, or Zepatier. Cannot be taken with Viekira Pak.

MORE INFORMATION

Edurant is not recommended for treatment-naïve patients with a pre-treatment viral load greater than 100,000 or CD4 less than 200. ECHO and THRIVE studies showed that Edurant is non-inferior (a term used in scientific research that means the drug is no better or worse than those it's compared to) to Sustiva in efficacy—76% vs. 77% of patients achieved a viral load of less than 50 copies (undetectable) and CD4 count increases of 228 vs. 219 when comparing Edurant and Sustiva, respectively. While its tolerability and safety profiles are advantages for Edurant, the greater potential for virologic failure in patients with high viral loads or low CD4, food restriction, and cross-resistance to the other NNRTIs puts Edurant at a disadvantage for first-time treatment (because patients may not be able to switch to another NNRTI if their HIV develops NNRTI resistant mutations to Edurant). While Sustiva is associated with a risk of birth defects during the first trimester, Edurant can be used in pregnancy, and has been added as a DHHS alternative NNRTI to use in pregnancy. A pediatric dose for ages 12 to 18 was added last year; a small study showed a higher rate of depressive disorders in adolescents (19.4%—seven out of 36 youths—vs. 9% for adults), which may or may not have been related to Edurant.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Rilpivirine is indicated as an alternative for initial therapy, but only in those who have baseline viral loads below 100,000 copies/mL and more than 200 CD4 cells/mL. It has a slightly higher genetic barrier to resistance—and a different resistance pattern—than efavirenz and nevirapine. Proton-pump type acid-blocking drugs can compromise effectiveness, and rilpivirine should be taken with food. Although causing less dramatic and frequent central nervous system toxicities than efavirenz, it is still associated with depression. Rash is sometimes seen, but often is not dose-limiting. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Endurant or rilpivirine is an NNRTI shown to be non-inferior to efavirenz in individuals with fewer than 100,000 viral load copies. First approved as a single agent, nowadays it is used in the single-tablet regimen Complera. The resistance profile of this drug is complicated. If resistance to rilpivirine develops, cross resistance to Intelence (etravirine) occurs. It is well tolerated and needs to be taken with food. It works well when used to switch regimens in individuals with an undetectable viral load. It is important to know the drug-drug interactions of rilpivirine. It should not be taken with antacids because they will affect drug absorption.
—MOISÉS AGOSTO-ROSARIO

Sustiva efavirenz, or EFV

NNRTI NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NON-NUCLEOSIDE, OR "NON-NUKE")

DHHS ALTERNATIVE WITH LIMITATIONS (A COMPONENT OF ATRIPLA)

STANDARD DOSE

One 600 mg tablet, once a day, typically at bedtime, on an empty stomach or with a light, low-fat snack. However, to minimize potential side effects it is often recommended to take Sustiva (efavirenz) on an empty stomach at bedtime.

Take a missed dose as soon as possible, unless it is closer in time to your next dose. Do not double up on your next dose. Also available in 50 mg and 200 mg capsules.

Approved for adults and children 3 months and older weighing at least 7.7 lbs. (3.5 kg). For children weighing less than 88 lbs. (40 kg), the dose is based on weight. For children weighing at least 88 lbs., use the standard adult dose. For those who can't swallow capsules, administer by capsule sprinkle method. See below or drug label for instructions or watch video at sustiva.com.

MANUFACTURER

Bristol-Myers Squibb
bms.com
(800) 321-1335

AWP

$1,110.12 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Central nervous system (CNS) symptoms (dizziness, insomnia, impaired concentration, abnormal or vivid dreams, hallucinations) are most common at the start of treatment and usually diminish in two to four weeks. Bedtime dosing on an empty stomach may help reduce symptoms. Less common psychiatric symptoms (depression, suicidal thoughts or actions, aggression, paranoid/manic reactions) may also occur. Additional side effects may include rash, nausea, vomiting, diarrhea, and fever. Rash in children is more common and more severe. Efavirenz may raise levels of triglycerides (fat in the blood) and cholesterol. It also may lead to false positive urine tests for marijuana; a confirmatory test is available. Risk of birth defects (see Atripla). Regular monitoring for increased liver enzyme levels is recommended initially and during treatment for people with hepatitis B/C or liver disease. Use with caution in mild liver impairment; not recommended with moderate or severe liver impairment.

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, supplements, and over-the-counter products you are taking or thinking of taking. Sustiva should not be taken with other NNRTIs or medications that contain them (Atripla and Complera). Do not take Sustiva with midazolam, pimozide, ergot derivatives, St. John's wort, or triazolam. Sustiva may affect warfarin levels. Sustiva can decrease levels of buprenorphine and methadone—monitor for withdrawal. Increase Kaletra to two 200/50 mg tablets plus one 100/25 mg tablet twice daily (total 1000/250 mg per day) with food when taken with Sustiva. Kaletra cannot be taken once daily with Sustiva. When using with Tivicay, increase the Tivicay dose to 50 mg twice daily. Treatment-experienced people should not take Reyataz with Sustiva, but for treatment-naïve people, Reyataz once-daily dose should be 400 mg with Norvir boost. Boost once-daily Lexiva with 300 mg Norvir. Increase Selzentry to 600 mg twice daily. Increase the Sustiva dose to 800 mg once daily with rifampin for people weighing 110 pounds (50 kg) or more. Rifabutin can be used as an alternative, but dose adjustment is needed. When taken with anticonvulsants carbamazepine, phenobarbital, or phenytoin, periodic monitoring of anticonvulsant and Sustiva levels should be done or alternative anti-seizure drugs, such as levetiracetam, should be considered. Effectiveness of birth control pills may be decreased; consider the use of other contraceptives. Closer monitoring and dose adjustments may be required with azole antifungal agents posaconazole (avoid unless benefit outweighs potential risk) and itraconazole (should consider an alternative, as no dose recommendation can be made). The dose of voriconazole should be increased to 400 mg every 12 hours and the Sustiva dose should be decreased to 300 mg once daily using capsules; tablets should not be broken. Monitor effectiveness of clarithromycin or consider azithromycin. Levels of immunosuppressants should be monitored when starting or stopping Sustiva. Cardizem, Lipitor, Pravachol, and Zocor doses may need to be adjusted. Titrate dose of bupropion and sertraline based on clinical response. No dose adjustment with Harvoni or Sovaldi. Increase Daklinza dose to 90 mg with Sustiva. Don't take with Olysio, Viekira Pak, or Zepatier.

MORE INFORMATION

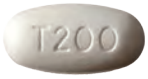
According to DHHS HIV treatment guidelines, Sustiva is an alternative drug, used as part of the Atripla single-tablet regimen. If you can't sleep, ask about switching the timing of your dose little by little until it's taken in the daytime. A rare genetic trait affecting drug metabolism of Sustiva, leading to a higher rate of side effects, occurs more in African Americans. See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Most who can tolerate it take efavirenz as part of Atripla rather than as a separate drug. That could change in 2017 when efavirenz is scheduled to become generic in the U.S. Fully generic single-tablet regimens incorporating efavirenz are likely to emerge shortly thereafter, in combination with lamivudine and potentially tenofovir DF (once it crosses its own generic milestone). Who knows, we may even see a 400 mg dose (shown in one clinical trial to be equal to 600 mg in efficacy but with lower side effects). The tension, then, will be between whether less expensive "alternative or other" generic single-tablet regimens will be prescribed instead of less toxic and more potent preferred regimens. Stay tuned! One important point is that the long half-life of efavirenz can cause problems when stopping therapy abruptly. This could leave efavirenz in the system as "monotherapy," and with high risk for resistance. This is particularly true for those (especially African Americans) who carry a genetic mutation that prolongs clearance by weeks. Consult a doctor when interrupting efavirenz so that a boosted PI can be temporarily substituted until efavirenz is cleared. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Sustiva or efavirenz is a very potent and long-acting antiviral. When my PI options became limited, Sustiva became the backbone drug of my eight-drug mega-HAART. PIs did not get me undetectable, but efavirenz did. Sustiva is the anchor drug of Atripla, the first and most widely used single-tablet regimen for the last 10 years. Sustiva's central nervous system side effects are challenging. Dizziness, weird dreams, depression, and feeling tired constantly are some of the side effects reported. Some individuals tolerate Sustiva well and others manage to overcome its side effects after three months. Thanks to the development of other NNRTIs with no CNS side effects, I—and others whose treatment included Sustiva—have been able to move on to a better regimen. —MOISÉS AGOSTO-ROSARIO



Intelence etravirine, or ETR

NNRTI NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR (NON-NUCLEOSIDE, OR "NON-NUKE")

ONLY FOR TREATMENT-EXPERIENCED INDIVIDUALS

STANDARD DOSE

One 200 mg tablet, or two 100 mg tablets, twice a day, with food. 25 mg tablets available for children 6–18 years old weighing at least 35 lbs (16 kg) (dose based on weight).

Take a missed dose as soon as possible, unless it is closer to the time of your next dose. Do not double up on your next dose. People unable to swallow pills (Intelence tablets are chalky) can dissolve tablets in 5 mL (1 teaspoon) of water, or at least enough liquid to cover the medication, stir well until the water looks milky, add more water if desired—can use orange juice or milk as an alternative (always placing tablets in water first). Avoid grapefruit juice and warm (over 104° F) or carbonated beverages. Drink it immediately, rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure the entire dose is taken. See commentary in the More Information section.

MANUFACTURER

Janssen Therapeutics
intelence.com
(800) JANSSEN
(526-7736)

AWP

$1,308.07 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

Generally well tolerated, but most common side effects may include mild rash and diarrhea. Rare side effects include severe rash and peripheral neuropathy. The FDA advises, "Discontinue Intelence immediately if signs or symptoms of severe skin reactions or hypersensitivity reactions develop (including, but not limited to, severe rash or rash accompanied by fever, malaise [general ill feeling], fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis [eye inflammation], facial edema [swelling], hepatitis, and eosinophilia [increased levels of the white blood cells called eosinophils, a sign of an allergic reaction])." In addition, levels of liver enzymes called transaminases should be monitored. Rash is associated with all of the current NNRTIs, but if you develop a rash from Intelence, you may still be able to take one of the other NNRTIs.

POTENTIAL DRUG INTERACTIONS

Refer to package insert for complete list. Tell your provider or pharmacist about all medications, herbal products, and supplements you are taking or thinking of taking, prescribed or not. Intelence should not be taken with other NNRTIs or medications that contain them (Atripla and Complera). If Intelence is taken in combination with a protease inhibitor, it must be boosted with low-dose Norvir. Avoid Intelence in combination with the following PIs: Boosted Aptivus or Lexiva. It should be avoided with Tivicay unless administered with one of the following combinations: Reyataz/Norvir, Prezista/Norvir, or Kaletra. Taking it in combination with Selzentry requires a Selzentry dose adjustment to 600 mg twice daily when used without a boosted PI and 150 mg twice daily when used with a boosted PI. In people who've failed therapy with other NNRTIs, Intelence should not be taken with NRTIs alone. Do not take Intelence with Tegretol, Luminal, Dilantin, Priftin, Rifadin, or the herb St. John's wort. Use with caution when combined with the antifungals Diflucan and Vfend. Dose adjustments of the antifungals ketoconazole, itraconazole, and posaconazole may be needed. Dosage adjustments of certain cholesterol medications may be needed based on clinical response, including Lipitor, Lescol, Mevacor, Livalo, and Zocor.

Monitor the effectiveness of Coumadin (warfarin) and adjust dose as needed based on clinical response. Alternatives to Plavix should be considered when used with Intelence. Alternatives to clarithromycin, such as azithromycin, should be considered for treatment of MAC. Lower Valium dose may be needed. Use caution with systemic dexamethasone or consider alternatives. Intelence can be taken with Mycobutin 300 mg daily; however, it should be avoided by those who are also taking a boosted PI. Intelence can be safely combined with methadone or buprenorphine with additional monitoring for potential signs of withdrawal. Intelence can also be safely combined with Viagra, Cialis, and Levitra, though a dosage adjustment of Viagra may be necessary. Can be taken with Daklinza (increase Daklinza dose to 90 mg). Interactions with Sovaldi and Harvoni have not been studied; but based on the metabolism, a clinically significant interaction is not expected. Taking with Olysio, Viekira Pak, or Zepatier is not recommended.

MORE INFORMATION

This second-generation NNRTI was developed to have a higher genetic barrier to drug resistance. It has shown significant viral load reduction in people with drug resistance to Sustiva or Viramune. The older NNRTIs can develop resistance quickly, requiring only one viral mutation. For patients who have had virologic failure on an NNRTI-containing regimen, do not use Intelence in combination with a nucleoside backbone alone. Although taking once daily is not FDA approved, some providers are prescribing Intelence once daily (2 of the 200 mg tablets) based on clinical trials that showed that once-daily Intelence was not inferior to Sustiva-based regimens. The once-daily dosing may improve patient adherence. Some patients complain of hard-to-swallow, large chalky pills; see dissolving instructions in dose section. Comparative studies between the 100 mg and 200 mg tablets showed a high rate of patient preference for the 200 mg tablets as they are dissolvable and thus, easier to swallow, but some prefer the smaller 100 mg tablets.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Etravirine hit its heyday shortly after it was approved, as a trifecta of new drugs emerged simultaneously (including raltegravir and darunavir), thus providing an instant and potent new regimen for many people with viral resistance who were greatly in need of new drugs. It was never even studied as initial therapy. But etravirine has been largely supplanted by rilpivirine, not only because of rilpivirine's inclusion in Complera, but because it can be given once daily and also has a good genetic barrier to resistance. Etravirine should not be given with atorvastatin (Lipitor) or clopidogrel (Plavix), or with dolutegravir unless given with a boosted PI.

—MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Intelence or etravirine is a second generation NNRTI that has shown significant viral load reduction in individuals who developed resistance to the first generation of NNRTIs (efavirenz and nevirapine). Like other NNRTIs, etravirine's drug-drug interactions are numerous and complicated. It is important to understand the interactions and inform your doctor of all over-the-counter medications, supplements and herbals. These might affect the absorption of etravirine. Intelence is well tolerated, but may cause rare side effects such as rash or increased cholesterol levels. It is a good second-line alternative for treatment-experienced people. The size of the pill makes it hard to swallow, and it leaves a chalky taste in the mouth, but there is the option of dissolving it in water. —MOISÉS AGOSTO-ROSARIO

Selzentry maraviroc, or MVC

EI ENTRY INHIBITOR (CCR5 ANTAGONIST)

USED ONLY IN CERTAIN SITUATIONS

STANDARD DOSE

The recommended dose varies, depending on other medications being taken, kidney function, and symptoms of orthostatic hypotension (feeling faint or dizzy when sitting or standing up too quickly), but will be either 150, 300, or 600 mg twice daily (available in 150 mg and 300 mg tablets). Can be taken with or without food. Your provider or pharmacist can determine which medications will affect Selzentry levels and recommend the appropriate dose for you.

Take a missed dose as soon as possible, unless it is closer in time to your next dose. Do not double up on your next dose. Before you start Selzentry, you will need a specific blood test (a tropism assay: Trofile, Trofile DNA, or HIV-1 Coreceptor Tropism with Reflex to UDS) to determine if this medication will work for you. Results of a phenotypic tropism test (Trofile or Trofile DNA) may take up to a month. Genotypic tests are also available and may provide a faster and less expensive alternative. Selzentry only works for those people with CCR5-tropic virus.

MANUFACTURER

ViiV Healthcare
viivhealthcare.com
(877) 844-8872

AWP

$1,453.71 / month

POTENTIAL SIDE EFFECTS AND TOXICITY

The most common side effects include cough, fever, cold, rash, muscle and joint pain, stomach pain, dizziness, and trouble sleeping. Other less common side effects may include allergic reactions, liver toxicity, and heart problems in those with a history of heart disease. Rarely, Selzentry can cause dizziness or fainting when standing up due to low blood pressure. In March 2014, the FDA updated the Selzentry label stating, "Caution should be used when administering Selzentry in patients with a history of or risk factors for postural hypotension, cardiovascular comorbidities, or on concomitant medication known to lower blood pressure. Patients with cardiovascular comorbidities could be at increased risk of cardiovascular adverse events triggered by postural hypotension." Stop taking Selzentry and contact your provider right away if you develop a rash, yellowing of your eyes or skin, dark urine, vomiting, or upper stomach pain. Selzentry should not be used in people with severe or end-stage kidney disease who are taking medications that can affect the levels of Selzentry (check with your provider). Selzentry affects immune system cells and could possibly increase the risk of infections and cancer, although this has not been observed in studies indicate up to five years of follow-up, and some data indicate it may be beneficial in cancer or for preventing metastasis (the spread of cancer to other parts of the body).

POTENTIAL DRUG INTERACTIONS

See package insert for the most complete list. Tell your provider or pharmacist about all medications, herbals, and supplements you are taking or thinking of taking, prescribed or not. Dose adjustments with other medications and anti-HIV drugs include: 150 mg twice daily if taken with medications that increase the levels of Selzentry such as boosted protease inhibitors (except for Aptivus), Stribild, Genvoya, Tybost, Rescriptor, clarithromycin, and itraconazole; 300 mg twice daily if taken with Aptivus, Viramune, Isentress, Tivicay, Triumeq, Fuzeon, and all of the NRTIs and medications that do not affect the levels of Selzentry; and 600 mg twice daily if taken with medications that decrease the levels of Selzentry such as Atripla, Sustiva, Intelence, rifampin, and some anti-convulsants such as carbamazepine (Tegretol), phenobarbital, and phenytoin (Dilantin). Likely dose with rifapentine is 600 mg twice daily, but use with caution. Not recommended with St. John's wort. There is data supporting Vitekta 150 mg plus Norvir 100 mg and co-administering Selzentry 150 mg twice daily. Selzentry may be co-administered with the hepatitis C medications Sovaldi, Olysio, Harvoni, and Daklinza at a dose of 300 mg twice daily, however, ledipasvir (in Harvoni) may have potential to increase Selzentry levels.

MORE INFORMATION

Selzentry is now generally recommended only when anti-HIV medications from other classes cannot be used or when a new class of medication is needed to construct a treatment regimen for patients who have drug resistance. Complex dosing, the need for a tropism test, and competition from newer drugs have dimmed some of the initial enthusiasm for this drug. Viral tropism refers to the types of HIV that a person can have, CCR5 (R5), CXCR4 (X4), or Dual-Mix Tropic (R5 and X4). Selzentry blocks CCR5, a receptor on the outside of a cell, and shuts down this point of entry for the virus. Most people are infected with R5 virus initially, and then over time, X4 and mixed viruses may predominate. Blocking R5 with Selzentry does not cause a shift to X4 or negatively affect disease progression or CD4 count in people whose virus can use dual-mix. In the MERIT clinical trial, the initial analysis suggested that Selzentry was inferior to Sustiva in getting people's viral loads to less than 50 copies (undetectable), but a re-analysis of the data with a more sensitive tropism test showed the regimens to be comparable in achieving undetectable viral loads in treatment-naïve participants at 96 weeks, leading to FDA approval for this group. There have since been several trials attempting to utilize Selzentry and another anti-HIV drug for only a 2-drug regimen, however, results have not been promising compared to the traditional 3-drug regimens, thus it is not recommended to use Selzentry as only a 2-drug regimen. The tropism test needed is now generally paid for by public health departments, Medicare, and private insurance, though ACA insurance exchange policies may not cover it. ViiV may cover the payment for the Trofile test if someone is ADAP-eligible and insurance doesn't cover the test. Selzentry seems to have minimal impact on lipid levels.

See package insert for more complete information on potential side effects and interactions.

DOCTOR'S COMMENTS

Maraviroc is the only chemokine receptor inhibitor currently licensed for use. It blocks cell entry at the CCR5 chemokine receptor, but only for viruses that are "CCR5 tropic," meaning that they use the CCR5 doorway to enter the cell. This means that a special—and expensive—test called a tropism assay must be done before using maraviroc to assure that the virus will respond. This adds to the expense and the burden of using the drug. While companies are working on better ways to measure tropism, for now maraviroc is hampered by this limitation. Maraviroc is recommended as an "other" therapy, owing to its modest potency and twice-daily dosing. —MELANIE THOMPSON, MD

ACTIVIST'S COMMENTS

Selzentry or maraviroc is an entry inhibitor. It is a CCR5 antagonist that blocks one of the two receptors (CCR5) on the CD4 cell, used by the virus to enter and infect it. People with HIV need to have a tropism test that will determine if the virus uses CCR5 to enter the cell. In treatment-experienced patients HIV may adapt to target CXCR4. When this occurs, individuals are unable to benefit from a CCR5 inhibitor. Even though it is not as popular as expected, it has become an important option when needed to add extra help to an HIV regimen.
—MOISÉS AGOSTO-ROSARIO

Egrifta tesamorelin for injection

NON-HIV NON-HIV DRUG
FOR HIV-RELATED VISCERAL BELLY FAT

STANDARD DOSE
2 mg via subcutaneous (under the skin) injection once daily in the abdomen, rotating injection sites and avoiding scar tissue, bruises, and the navel (see step-by-step video at egrifta.com).

MANUFACTURER
Theratechnologies Inc.
egrifta.com
Egrifta Assist:
1-844-EGRIFTA
(1-844-347-4382)

AWP
$3,875.00 for 30 days

Each dose necessitates mixing 1-mg vials (requiring refrigeration) of Egrifta with 2.2 mL of sterile water for injection (vial stored at room temperature). Do not use an unopened vial if the solution is colored, cloudy, or contains visible particles. Once mixed, the vial should be rolled gently, not shaken, between the hands for 30 seconds to ensure reconstitution into a clear, colorless solution and administered right away. If not used immediately, the reconstituted Egrifta should be discarded.

A potential complication of HIV, antiretroviral therapy, or both may be changes in the distribution of adipose tissue (fat), otherwise known as lipodystrophy; reports of prevalence in the U.S. vary widely, anywhere from 2–60% of all HIV-positive patients. Abdominal lipohypertrophy (a form of lipodystrophy) is the accumulation of excess visceral adipose tissue (VAT)—deep belly fat surrounding the liver, stomach, and other abdominal organs. Egrifta is the first, and only, FDA approved medication to reduce VAT. This is different from subcutaneous fat. Unlike growth hormone products, Egrifta is an analogue of human growth hormone-releasing factor (GRF), which stimulates the pituitary gland to produce and secrete the body's own growth hormone. The effect of this agent appears to be greatest within the first three to six months of initiation.

Two Phase 3 clinical trials found that Egrifta significantly lowered VAT (up to 15–20% on average) at both 26 and 52 weeks. Egrifta may also lower triglycerides (a type of cholesterol). Adverse events were more commonly seen in the groups given Egrifta than in those receiving placebos. It is important to note that excess VAT returns once Egrifta is discontinued. Egrifta should not be administered to patients who have pituitary gland tumor(s), pituitary gland surgery, or other pituitary gland problems; active cancer; hypersensitivity to either tesamorelin and/or mannitol; or who are pregnant. Egrifta should be used with caution in patients who have a history of non-malignant neoplasms (abnormal growth of tissue such as a tumor), a history of treated and stable malignancies, elevated insulin-like growth factor 1 (IGF-1), fluid retention, diabetes, or pre-diabetes.

The most common side effects include joint pain, injection site reactions (including redness, pain, and itching), pain in legs and arms, swelling in legs, muscle soreness, tingling, numbness and prickling, nausea, vomiting, rash, and itchiness. Other warnings include hypersensitivity reactions and acute critical illness. Patients receiving Egrifta had a higher risk of developing diabetes compared to those on placebo. Despite initial thoughts that Egrifta may have significant drug-drug interactions with medications that use CYP450 (an enzyme in the liver) for metabolism, a study in healthy volunteers proved otherwise. However, it has not been studied with medications that use other enzymes in the liver; therefore, response to medications that are metabolized through the liver should be monitored for response and adverse reactions. Long-term safety data is unknown. There have been previous reports of a theoretical increased risk of cancer with elevated IGF-1 levels. Other long-term concerns include potential development of retinopathy in patients with diabetes. If someone is having difficulty paying for Egrifta, there are several programs available through the Egrifta Assist toll-free line at 1-844-EGRIFTA (1-844-347-4382).

Fulyzaq crofelemer

NON-HIV NON-HIV DRUG
FOR HIV/AIDS TREATMENT-ASSOCIATED DIARRHEA

STANDARD DOSE
One 125 mg delayed-release tablet taken twice a day, with or without food. The tablet should be swallowed whole and not crushed or chewed.

MANUFACTURER
Salix Pharmaceuticals
fulyzaq.com
(919) 862-1000

AWP
$648.00 / month

Fulyzaq (crofelemer) is the first, and only, anti-diarrheal indicated for the symptomatic relief of non-infectious diarrhea in adult patients with HIV/AIDS on antiretroviral therapy. Currently, what is typically recommended is for the patient to take medication(s) with food and/or use Imodium (loperamide) for symptomatic diarrhea.

Fulyzaq approval was based on a randomized, placebo-controlled study of 374 HIV-positive patients who had about 3 watery stools per day and on anti-HIV medicines. At study entry, patients experienced an average of approximately 20 watery stools per week. To be considered a responder, watery stools had to be decreased to two or fewer per week, which occurred in 18% of Fulyzaq-treated patients vs. 8% of placebo-treated patients at 4 weeks. In an open label extension phase of the study, about 50% of the patients reported two or fewer watery stools per week at 3 months, an effect which was maintained until study end at 6 months. These findings suggest that it may take some time to achieve the optimal effect. Fulyzaq appears to work best in those who have tried and failed non-prescription anti-diarrheals, have had diarrhea for more than two years, have more than two watery bowel movements per day, and whose bowel movements tend to be "pourable" (not clumpy). Fulyzaq was less effective in African Americans in this clinical study.

An infectious cause should be ruled out prior to initiating Fulyzaq. In the placebo-controlled part of the study, side effects were comparable to placebo. The most commonly reported side effect was upper respiratory tract infection (Fulyzaq, 3.8% of patients vs. placebo, 2.9%). Other reported side effects included bronchitis, cough, flatulence (gas) and increased bilirubin. Based on animal data, Fulyzaq may cause fetal harm. Fulyzaq has not been studied in patients younger than 18 years old. Its usefulness in pediatrics is unknown and use in this population cannot be recommended at this time.

There were no significant drug interactions in participants in the clinical study. There was little or no change in CD4 counts and viral load throughout the study.

In a review article in *Infectious Disease Theory* published in 2014 by Patrick Clay *et al*, it appears Fulyzaq's use is considered last line after unsuccessful attempts with diet modifications and/or over-the-counter anti-diarrheals (such as Imodium). It may require some time to observe optimal effects.

Serostim

somatropin (rDNA origin) for injection

NON-HIV DRUG
FOR HIV-RELATED WASTING

STANDARD DOSE

0.1 mg/kg via subcutaneous (under the skin) injection, which may be in the thigh, upper arm, abdomen, or buttock once daily at bedtime (up to 6 mg), rotating injection sites and avoiding scar tissue, bruises, and the navel. It is available in 4 mg, 5 mg, and 6 mg vials. The multi-use 4 mg vial is reconstituted with bacteriostatic (containing a biological or chemical agent that stops bacteria from reproducing) water for injection and may be refrigerated for up to 14 days after reconstitution. The single-use 5 mg and 6 mg vials are reconstituted with sterile water for injection and must be used immediately; after administering the dose, any unused portion should be discarded. Some loss of the dose can be expected (approximately 10%). Inject the water into the vial aiming for the glass wall. The vial should be swirled gently in a circular motion until solution is completely dissolved; it must be clear and colorless. Do not shake. Do not inject if solution is cloudy or contains particles.

MANUFACTURER

EMD Serono
serostim.com
(877) 714-AXIS (2947)

AWP

$2,268.67 / week for 4 mg;
$2,835.84 / week for 5 mg;
$3,403.01 / week for 6 mg

Serostim is recombinant (made in a lab) human growth hormone for treatment of HIV wasting (unintentional loss of weight) or cachexia (general ill health resulting from emaciation), decreased lean body mass (muscle), and loss of physical endurance. Loss of muscle can be difficult to notice or diagnose. Serostim has been shown to increase HIV replication in the test tube; therefore, patients must be taking anti-HIV therapy, known as HAART (or cART), in order to be prescribed Serostim.

Most common potential side effects include swelling (especially of the hands and feet), muscle pain, joint pain, numbness, and pain in extremities (the ends of limbs, especially the hands and feet), carpal tunnel syndrome (requiring discontinuation if unresolved by decreasing the number of doses), injection site reactions (pain, numbness, redness, or swelling), increased blood fat (triglycerides) and blood sugar, including new or worsening cases of diabetes (sometimes reversible upon stopping Serostim), nausea, and fatigue. More rarely, potential side effects include pancreatitis (watch for persistent severe abdominal pain) and intracranial hypertension (rise in pressure in the skull, with visual changes, headache, nausea, or vomiting). Serostim should be avoided in patients who are acutely ill, have an active cancer, or have diabetic retinopathy (damage to one or both retinas). Since HIV-positive patients may have an increased risk of developing new tumors, including from birth marks or other moles, risks versus benefits of starting Serostim should always be discussed with your provider. Additionally, patients with known malignancies should be carefully monitored, because Serostim may cause increased growth or malignant changes.

Rotate injection sites to avoid injection site reactions. Do not use while experiencing cancer or cancer treatment; serious injuries; severe breathing problems; certain eye diseases related to diabetes; or after critical illness due to complications of abdominal or open heart surgery.

Based on how the drug is broken down in your body, there are some potential drug-drug interactions, though no formal drug studies have been conducted. These theoretically potential interactions include patients on glucocorticoid (such as prednisone) therapy and may require an increased prednisone dose. Others may include medications that are metabolized through the CYP450 enzyme in your liver (like some antiretrovirals, cholesterol medications, or anticonvulsants); or medications like oral estrogen, insulin, or oral diabetes drugs. Be sure to tell your provider, pharmacist, and/or other providers about all of the medications you are taking, including herbs, supplements, and over-the-counter (OTC) products, prescribed or not.

If someone is having difficulty paying for Serostim, there are several programs that may be able to assist the patient with acquiring it. These programs include EMD Serono Secured Distribution Program, the AXIS Center, the Serostim Patient Assistance Program (PAP), or a co-pay assistance program. To find out more about these programs, call (866) 962-1128.

Go to serostim.com for additional information. Also go to excelmale.com, a community-based resource for information about men's health, including growth hormone and other HIV-related therapies.

KNOWING WHERE TO LOOK

FINDING ASSISTANCE PROGRAMS TO HELP PAY FOR YOUR MEDS

BY JEFF BERRY

Today's therapies are vastly improved over the first drugs used to treat HIV, but these advancements continue to come at a cost. The prices of HIV drugs continue to rise every year at an average of 7–9 percent. While in the past this usually hasn't directly affected someone who has drug coverage through their health insurance plan, increasingly individuals are having to pay co-insurance (a percentage of the cost) on their medications. The good news is that help is out there. ADAPs, several non-profit organizations, and the pharmaceutical companies themselves have assistance programs in place to help you pay for the treatment you need.

CO-PAY AND PATIENT ASSISTANCE PROGRAMS

Most pharmaceutical companies provide some level of assistance through a patient assistance program (PAP) for people who can't afford certain medications. These PAPs are typically for patients without insurance who don't qualify for Medicare, Medicaid, or AIDS Drug Assistance Programs (ADAP). Qualifications and criteria vary by program and are based on a percentage of Federal Poverty Level (FPL). Patients or providers should contact the program to see if they are eligible.

Many companies also have co-pay assistance programs for those who have drug coverage through privately held insurance. These programs may cover all or part of the drug co-pay, co-insurance, and deductibles up to a specified amount, and don't have any income requirements. Certain restrictions and eligibility requirements apply (for example, recipients of ADAP, Medicare, and Medicaid may not be eligible). Individuals can get the co-pay card directly from their provider, the manufacturer's website, or by calling a toll-free number. Some programs have a reimbursement process in place if you are required to pay the co-pay out of pocket. Some PAPs will make exceptions; for example, for a person on ADAP who has insurance but who has a high deductible, they may cover a certain percentage. Be sure to ask for an exception or review if you are at first denied.

THE AFFORDABLE CARE ACT

Commonly referred to as "Obamacare," the Affordable Care Act (ACA) has improved access to coverage for many people with HIV or vulnerable to HIV. Although the law is far from perfect, the ACA's intention to provide more affordable benefits will allow people with HIV to address their health needs. The law also provides access to pre-exposure prophylaxis (PrEP), medication to prevent HIV. Insurers can no longer deny coverage to people with HIV/AIDS or impose annual

HIV MEDICATIONS

DRUG	COMPANY
Aptivus	Boehringer Ingelheim
Atripla	Gilead Sciences
Combivir	ViiV Healthcare
Complera	Gilead Sciences
Crixivan	Merck & Co.
Edurant	Janssen Therapeutics
Emtriva	Gilead Sciences
Epivir	ViiV Healthcare
Epzicom	ViiV Healthcare
Evotaz	Bristol-Myers Squibb
Fuzeon	Genentech
Genvoya	Gilead Sciences
Intelence	Janssen Therapeutics
Invirase	Genentech
Isentress	Merck & Co.
Kaletra	AbbVie, Inc.
Lexiva	ViiV Healthcare
Norvir	AbbVie, Inc.
Prezcobix	Janssen Therapeutics
Prezista	Janssen Therapeutics
Rescriptor	ViiV Healthcare
Retrovir	ViiV Healthcare
Reyataz	Bristol-Myers Squibb
Selzentry	ViiV Healthcare
Stribild	Gilead Sciences
Sustiva	Bristol-Myers Squibb
Tivicay	ViiV Healthcare
Triumeq	ViiV Healthcare
Trizivir	ViiV Healthcare
Truvada	Gilead Sciences
Tybost	Gilead Sciences

>> CONTINUES ON PAGE 60

CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
None	800-556-8317; rxhope.com or pparx.org	Patient assistance program only.
877-505-6986; gileadadvancingaccess.com	866-290-4767	Co-pay program covers up to $6,800 per year with no monthly limit.
None	877-784-4842; viivhealthcareforyou.com	No co-pay card; generic available. Patient assistance program only.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
None.	800-652-3430; merckhelps.com	Patient assistance program only.
866-961-7169; edurant.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Card available through your provider, AIDS service organization, and pharmacy. Co-pay program covers up to $3,600 per year with a monthly maximum of $300.
None	877-784-4842; viivhealthcareforyou.com	No co-pay card; generic available. Patient assistance program only.
866-747-1170; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	Card available online or through provider. Co-pay program covers up to $2,400 per year with no monthly limit.
888-281-8981; bms3assist.com	888-281-8981; bms3assist.com	Co-pay program covers up to $7,500 per year with no monthly limit.
None	pparx.com	Patient assistance program only.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
866-961-7169; intelence.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
None	pparx.org	Patient assistance program through pparx.org.
isentress.com	800-850-3430; merckhelps.com	Co-pay program covers up to $6,600 per year per prescription.
866-525-3872; kaletra.com	800-222-6885; abbviepaf.org	Co-pay program covers up to $400 per month per prescription.
866-747-1170, option 5; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	Co-pay program covers up to $2,400 per year with no monthly limit.
800-441-4987; norvir.com	800-222-6885; abbviepaf.org	Co-pay program covers up to $100 per month per prescription.
866-961-7169; prezcobix.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
866-961-7169; prezista.com; jtsavings.com	800-652-6227; jjpaf.org	Co-pay program covers up to $7,500/year with no monthly limit. Card available through provider or at jtsavings.com.
866-747-1170; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	No co-pay card; generic available. Patient assistance program only.
None	877-784-4842; viivhealthcareforyou.com	No co-pay card; generic available. Patient assistance program only.
888-281-8981; bms3assist.com	888-281-8981; bms3assist.com	Co-pay program covers up to $7,500 per year with no monthly limit.
866-747-1170; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	Co-pay program covers up to $2,400 per year with no monthly limit.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $6,000 per year with no monthly limit.
888-281-8981; bms3assist.com	888-281-8981; bms3assist.com	Co-pay program covers up to $7,500 per year with no monthly limit.
866-747-1170; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	Co-pay program covers up to $6,000 per year with no monthly limit.
866-747-1170; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	Co-pay program covers up to $6,000 per year with no monthly limit.
None	877-784-4842; viivhealthcareforyou.com	No co-pay card; generic available. Patient assistance program only.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $3,600 per year with no monthly limit.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $600 per year with a monthly maximum of $50.

limits on coverage. Low- and middle-income earners may be eligible for tax subsidies to help them buy coverage from health insurance exchanges, or marketplaces. Medicaid eligibility has now expanded in many states to generally include those under 65 with incomes up to 138% FPL.

Advocates have raised concerns about the high cost of some HIV drugs available through certain exchange plans. Although plans with affordable HIV drug coverage co-pays exist in almost all areas, some plans may require you to pay $1,000 or more (up to 50%) in co-insurance for HIV drugs. Make sure you know what your plan will cost in terms of co-insurance, deductibles, and the monthly premium. In addition some plans do not cover all HIV medications, or price them in the highest tier, including generics.

Many state ADAPs can help pay out-of-pocket costs for HIV drugs obtained through some exchange plans. ADAPs can also help pay premiums in some states. Check with your state ADAP to learn what your state offers, as well as the income limits.

It is critical to consult a trained enrollment "navigator" when choosing an exchange plan. Contact your local HIV/AIDS service organization for help or a referral.

MEDICARE PART D

The Affordable Care Act provides for closing the Medicare Part D prescription drug benefit "donut hole" or coverage gap by 2020. Beneficiaries receive a 50% discount on covered brand name drugs while they are in the "donut hole," with increased savings on prescription drugs while they are in the coverage gap until the gap is fully closed. In addition, ADAP benefits are now considered as contributions toward Medicare Part D's True Out of Pocket spending limit ("TrOOP"), so ADAP clients who have Medicare Part D should be able to benefit.

HARBORPATH AND THE COMMON PAP FORM

HarborPath is a non-profit organization that helps uninsured people living with HIV/AIDS and/or hepatitis C to gain access to brand name prescription medication at no cost, by providing case managers with a single online portal for PAP applications and medication fulfillment through a mail-order pharmacy. Go to harborpath.org.

The Department of Health and Human Services (DHHS), along with seven pharmaceutical companies, the National Alliance of State and Territorial AIDS Directors (NASTAD), and community stakeholders developed a common patient assistance program application that can be used by both providers and patients. To download the form, go to hab.hrsa.gov/patientassistance.

ADDITIONAL PROGRAMS

Co-pay and patient assistance programs are also available for hepatitis B and C drugs, and medications or treatments used for other HIV-related conditions such as lipodystrophy—some of these are included in the co-pay and PAP charts at right. There is even a separate assistance program for Truvada as prevention, or PrEP (pre-exposure prophylaxis).

The Patient Assistance Network Foundation recently expanded eligibility criteria for HIV treatment and prevention (including PEP and PrEP). Those who qualify (you must have insurance and income below 500% FPL) are eligible to receive a grant of up to $7,500 a year. to help cover out-of-pocket costs for meds. You may apply for a second grant during your eligibility period depending on available funding. Go to panfoundation.org/hiv-treatment-and-prevention.

To learn more about other patient assistance or co-pay programs for drugs used to treat HIV, certain opportunistic infections, or other conditions, talk to your provider, contact the manufacturer directly, or go to pparx.org and needymeds.org. For help in getting many medications not covered by ADAP, including alternative therapies and generics, even if you receive medicines through another discount program, go to SurvivorRxPlan.com.

STAY INFORMED AND UP TO DATE

Keeping the lines of communication open between you and your health care provider, pharmacist, and case manager is essential when managing your health, so stay informed. Use the adjacent chart to check specific details, or go to positivelyaware.com/copay for the most current information.

SPECIAL THANKS to Britten Pund, Associate Director of Health Access, NASTAD, for her review of this article; Jason Lancaster for updating the accompanying chart; and the Fair Pricing Coalition (FPC) for some of the information in this article. Go to fairpricingcoalition.org or hivhealthreform.org. [Note: Author is a member of the FPC.]

HIV MEDICATIONS CONTINUED

DRUG	COMPANY
Videx EC	Bristol-Myers Squibb
Viracept	ViiV Healthcare
Viramune XR	Boehringer Ingelheim
Viread	Gilead Sciences
Zerit	Bristol-Myers Squibb
Ziagen	ViiV Healthcare

HIV PREVENTION

DRUG	COMPANY
Truvada for PrEP	Gilead Sciences

HIV-RELATED CONDITIONS

DRUG / ASSAY

Androgel (testosterone gel 1% & 1.62%)
For adult males with low or no testosterone

Axiron (topical liquid testosteronel solution 30 mg/1.5 mL) For adult males with low or no testosterone

Egrifta Injectable for treating HIV-related excess belly fat (lipohypertrophy)

Fortesta (testosterone gel 2%) For adult males who have low or no testosterone)

Fulyzaq Anti-diarrheal approved for use in those with HIV/AIDS and on antiretroviral therapy.

HLA-Aware HLA-B*5701 test to determine if a person can start taking Ziagen, Epzicom, Trizivir, or Triumeq

Natesto (testosterone) nasal gel
For adult males with low or no testosterone

Procrit
Treats anemia due to zidovudine therapy

Radiesse
Injectable facial filler approved for use in people with HIV to treat facial fat loss (lipoatrophy)

Sculptra
Injectable facial filler approved for use in people with HIV to treat facial fat loss (lipoatrophy)

Serostim
Injectable human growth hormone used for treating HIV-associated wasting in those on ART

Trofile Assay
A test to determine the tropism of a person's HIV to see if a CCR5 antagonist (such as Selzentry) would be effective

Vogelxo (testosterone gel 1%)
For adult males with low or no testosterone

CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
None	pparx.org	No co-pay card; generic available. Patient assistance program through pparx.org.
866-747-1170; mysupportcard.com	877-784-4842; viivhealthcareforyou.com	Co-pay program covers up to $2,400 per year with no monthly limit.
None	pparx.org	No co-pay card for Viramune; available as generic. Patient assistance program through pparx.org.
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	Co-pay program covers up to $3,600 per year with a monthly maximum of $300.
None.	pparx.org	No co-pay card; generic available. Patient assistance program through pparx.org.
None	877-784-4842; viivhealthcareforyou.com	No co-pay card; generic available. Patient assistance program only.

CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
877-505-6986; gileadadvancingaccess.com	800-226-2056; gileadadvancingaccess.com	For HIV-negative individuals to prevent HIV. Truvada for PrEP Medication Assistance Program (MAP) covers co-pays up to $3,600/year with no monthly cap (additional support considered on case-by-case basis—call number); for uninsured provides free drug for those with incomes below 500% FPL.

COMPANY	CO-PAY PROGRAM	PATIENT ASSISTANCE	DETAILS
AbbVie, Inc.	855-243-5162; androgel.com	800-222-6885: abbviepaf.org; pparx.org	Co-pay: Patient pays first $10, then covers up to $100 per month for a total of 12 transactions. Card available through provider or print the card online.
Eli Lilly and Company	877-929-4766; axiron.com	855-559-8783; lillycares.com	Co-pay: First month free, then $25 to $75 per month. Card available online. Free 30-day sample through Axiron representative.
Theratechnologies	844-347-4382; egrifta.com	844-347-4382; egrifta.com	Call number or go to egrifta.com for program details.
Endo Pharmaceuticals	800-462-3636; fortestagel.com	None.	Co-pay amount depends on the type of patient's insurance (commercial vs. government vs. no insurance).
Salix Pharmaceuticals	None	866-282-6563; salix.com	No co-pay program, PAP only. Appeals process in place for PAP, may possibly help with co-pay, apply second time if turned down initially. Go to cdn.salix.com/fulyzaq/assets/pdf/fulyzaq-patient-assistance-program-application.pdf
LabCorp/ ViiV Healthcare	viivhcdxresource.com/home	877-844-8872; viivhcdxresource.com/HLA/AwareProgram	Covers entire cost of test for insured/uninsured. Test must be ordered by provider. Contact local ViiV rep, order online, or call.
Endo Pharmaceuticals	844-NATESTO (628-3786); natesto.com	None.	No PAP. Co-pay: Patient pays first $25, then up to $150 per prescription.
Janssen Pharmaceuticals	None	800-652-6227; jjpaf.org	No co-pay program, PAP only. Medicare Part D Extra Help with Low-Income Subsidy available: secure.ssa.gov/i1020/start
Merz Aesthetics	None	866-862-1211; radiesse.com	No co-pay program. PAP is sliding scale based on patient's annual income up to $50,000; reimbursement goes directly to physician.
Valeant Pharmaceuticals International	None	866-310-7551; needymeds.org	No co-pay program. PAP provides two kits and one follow-up kit. Free for those with an annual income below $22,340, and then on a sliding scale up to $61,940.
EMD Serono	877-714-2947; serostim.com	877-714-2947; serostim.com; 866-962-1128	Co-pay program covers up to $500 per prescription with a maximum of 12 discounts per lifetime.
Monogram Biosciences	None	877-436-6243; monogrambio.com; viivhcdxresource.com/HLA/AwareProgram	Gateway coverage for uninsured/underinsured; assists in prior authorization or if insurance reimbursement is denied. ViiV also has Tropism Access Program (TAP) for ADAP eligible; see website, or contact state ADAP.
Upsher-Smith Laboratories, Inc.	None	None	A 30-day free trial card available online.

Tim McGraw has a challenge for you.

I've seen first-hand how diabetes impacts Americans from all walks of life. It's affected my family, friends and fans.

- Tim McGraw

Nearly 30 million Americans have diabetes – most have type 2 diabetes. That's why I'm speaking out about how important it is for those living with type 2 diabetes to get their blood sugar under control.

I'm encouraging all Americans to join me and challenge their family and friends with diabetes to get to their A1C goal.* I've learned that about one-third of adults living with diabetes are not at their A1C goal, which can lead to serious health problems over time.

Let's change that statistic.

If you have diabetes, take the challenge. Pledge to work with your doctor to set and reach your own A1C goal. Also be sure to learn if you are at risk of low blood sugar and how to reduce that risk. **

Join me now at **AmericasDiabetesChallenge.com.**

Together, we can make a difference.

American Diabetes Association®

America's Diabetes Challenge was developed in collaboration with Merck

* A1C measures average blood sugar (glucose) over a 2 to 3 month period.

** Low blood sugar (glucose), known as hypoglycemia, can make you feel shaky, dizzy, sweaty and sometimes faint.

LIFE IN PANORAMA

THE STORIES BEHIND POSITIVELY AWARE'S BIGGEST COVER PHOTO

1: David Keesey, 61, HIV-positive since May 1991, activist, non-profit fundraising. **2: Ross Meredith**, 32, HIV-positive since June 2010, photographer/editor for International Jock. **3: Army Cachero**, 38, HIV-positive since March 2002, founder of VeggieArmy.com. **4: Sabel Samone-Loreca**, 48, HIV-positive since March 1989, Los Angeles County Commissioner on HIV and transgender activist. **5: Geath Yuma**, 24, HIV-positive since December 2012, bilingual tour guide and interpreter. **6: Richard J. Volis**, 58, HIV-positive since 1987, volunteer for the Being Alive Inspirational/Educational Theatre Workshop. **7: Jabari Mapinduzi Mwesi Chui**, 50, HIV-positive since November 2010, activist. **8: Precious A. Jackson**, 44, HIV-positive since May 1998, activist, peer care navigator, and self-published author. **9: Sister Latina Turner**, 49, HIV-positive since February 2015, activist and accountant. **10: Garry G. Bowie**, 55, HIV-positive since April 1983, executive director of Being Alive LA. **11: Cathy Elliott**, 51, HIV-positive since 1995, HIV community liaison. **12: Brian McCafferty**, 52, HIV-positive since September 2005, software engineer. **13: Ramiro Gonsalez**, 30, HIV-positive since November 2015, airport security employee. **14: Jimmie Creer**, 57, HIV-positive since January 1990, photo stylist. **15: Sunkee Angel**, 28, HIV-positive since June 2014, music artist. **16: Robin Barkins**, 31, HIV-positive since July 2000, advocate and jewelry designer. **17: Ms. La Wanda**, 62, HIV-positive since 1996, peer navigator and women's advocate. **18: Irene Soderberg**, 63, HIV-positive since April 1990; singer, actor, writer, producer, and activist. **19: La Vera Sanders**, 42, HIV-positive since September 2004. **20: Corey Saucier**, 39, HIV-positive since 2000, philosophical genius and starving artist. **21: Dontá**, 43, HIV-positive since November 1999, host of the podcast *The Dontá Show* and co-founder of 6in10.org. 22. **Hillel Wasserman**, 59, HIV-positive since March 1987, motion picture marketing specialist.

IT SEEMED ONLY APPROPRIATE that POSITIVELY AWARE would stage the photo shoot for its first foldout cover in Hollywood. Movies are bigger than life. The stories, the characters, the special effects—even the size of a movie screen—are all intended to take up your entire view. HIV can seem like that, too.

"When I found out I was HIV-positive, I thought I was going to die, because I was taught that this was punishment for being who I was," said Sunkee Angel, a 28-year-old music artist assembled for PA's cover photo shoot, organized by Los Angeles-based photographer Louis "Kengi" Karr. The Saturday spent in front of Kengi's camera turned into a sharing session of personal anecdotes and experiences of life with HIV.

"I'm old enough to remember friends who got sick when the crisis began in the early 1980s," said Brian McCafferty, 52 and HIV-positive since 2005. "Young men lived only a couple of years after being diagnosed. I am starting my second decade being HIV-positive, and am in great health thanks to the medications now available."

"Life was different 20–30 years ago," said Sabel Samone-Loreca, a member of the Los Angeles County Commission on HIV. "I remember when AZT was the only drug available, and stigma was a way of life. I was somebody else back then. Today, at 48, I'm a strong Black trans-identifying woman, and a powerful representative of my community, working to make a difference for all transwomen and transmen of color."

"When I was diagnosed with HIV, my life turned upside down," said Sister Latina Turner, a member of the L.A. chapter of the Sisters of Perpetual Indulgence, who tested HIV-positive in 2015. "I tried to kill myself, but then found so much support and love within the HIV community that it made me stronger. I understand now that HIV is a disease; it's not a death sentence." >>

PHOTO: LOUIS "KENGI" CARR POST-PRODUCTION: TODD OCKEY

"Seventeen years ago when I was diagnosed, I didn't think I was at risk for HIV," said Precious A. Jackson, 44. "I was in total shock because I'm a straight Black woman who doesn't have a drug history. Today, I'm a self-published author and I've been afforded several opportunities of a lifetime. HIV is a small part of who I am, and it doesn't define me."

"I was 16 weeks pregnant, and having pregnancy complications," said La Vera Sanders, 42, HIV-positive since 2004. "Today, I am a marriage and family therapist, and am in my second year working toward a doctorate in forensic psychology."

"I became infected while I was in China," said Geath Yuma, a 24-year-old immigrant, HIV-positive since 2012. "It was during my last year of college. I went through a very miserable time, but then I chose to be strong, and I moved on. Although my first language is Chinese, I collected as much information as I could through English language websites. I learned that the earlier the better for starting treatment. However, the policy in China at that time was to provide medication only when a patient's T-cell count dropped down below 200. I made a lot of effort to get the meds, and started treatment in February 2013."

While education and information were important in reclaiming their lives, many who took part in the photo shoot discussed how they have come to serve as educators and as inspiration for others.

"Being HIV-positive is just one facet of my life, and it's not a bad thing," said Cathy Elliot, 51, HIV-positive since 1995. "People outside of the HIV community might not understand, but coping with HIV for all these years has made me resilient. I'm a better human being overall. I truly value the relationships that I have with my community, and I celebrate every day as a gift."

"One cannot travel this journey alone," said David Keesey, 61, who has been positive since 1991. Keesey has worked for the Foundation for AIDS Research (amfAR) and the Elizabeth Glaser Pediatric AIDS Foundation, and has continued to work as an activist and Reiki healer. "If not surrounded by my faith, pets, and lifelong friends who are family to me, I would not be here today. We all have a major role in making this world a brighter place by keeping our light in it."

"When I was first diagnosed, I didn't have time to feel sorry for myself," said Jabari Mapinduzi Mwesi Chui, HIV-positive since 2010. "I said, *Fuck this. I ain't letting this shit kill me.* I ain't looked back since. I take life as it comes. People find it hard to believe that I am 50 years of cool, straight, and HIV-positive."

Garry G. Bowie has been HIV-positive since 1983, and is executive director of Being Alive, a non-profit AIDS service organization in L.A. "I chose to work hard and focus on life so that I could live," said Bowie. "When the HAART drug regimens became available in the late 1990s, I worked harder and then volunteered with AIDS organizations in Orange County and Long Beach. Today, I work in this field helping our community stay healthy and live, making organizations stronger and better, helping people find the better parts of themselves, forging a path to stay healthy."

"When I found out I was HIV-positive, I was an out of work actor on my lunch break from Victoria's Secret," said Army Cachero, 38, who learned of his HIV status in 2002. Army maintains veggiearmy.com, a vegetarian blog. "My meth use had caught up with me. But in recovery, I have tools, support, and hope. Now, I'm grateful that I have been able to give back as a drug and alcohol counselor and public health educator. I still kept my passion as an entertainer. Being poz hasn't kept me from acting in commercials, teaching Zumba, fighting for equal rights, or pursuing my dream of a vegetarian travel show. HIV shouldn't keep anyone else from following their dreams either."

"Living my life as an HIV-positive person has blessed me in more ways than I could have ever imagined," said Corey Saucier, 39, a self-described starving artist who's been HIV-positive since 2000. "It was the catalyst I needed to thrive."

—RICK GUASCO

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