

## **Landmark Five-Year African Study Indicates That HIV Therapy May Be Given Safely in Resource-Limited Settings Without Routine Laboratory Monitoring**

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### **-- DART Study Investigators Present Favorable Viread Safety Results at IAS Conference --**

CAPE TOWN, South Africa--(BUSINESS WIRE)--Jul. 21, 2009-- Gilead Sciences, Inc. (Nasdaq:GILD) today highlighted results from a study known as DART (Development of Anti-Retroviral Treatment in Africa), which evaluated the need for routine laboratory monitoring in adults taking antiretroviral therapy in Africa. The DART trial was an open-label, randomized study comparing clinical and laboratory monitoring to clinical monitoring alone for efficacy and toxicity. In this study, 74 percent of patients were on a treatment regimen containing Viread<sup>®</sup> (tenofovir disoproxil fumarate). At baseline, more than 50 percent of patients had reduced renal function. The results indicated that Viread was well tolerated and that the incidence of renal adverse events was low. DART researchers concluded that renal function test results were similar in both arms of the trial for up to five years, suggesting that routine monitoring of Viread may not be necessary in resource-limited settings when using the product as part of a first-line HIV treatment regimen. The results of the study were presented today at the 5th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention (IAS 2009) in Cape Town, South Africa.

DART, which was sponsored by the United Kingdom's Medical Research Council and conducted at sites in Uganda and Zimbabwe, examined whether HIV treatment, including Viread, can effectively and safely be provided in settings where availability of laboratory monitoring is limited. Without treatment, the researchers estimated that approximately 80 to 90 percent of DART patients would have died within five years. After five years of receiving combination HIV therapy, 88 percent of DART participants were alive. This is one of the best survival rates ever observed in an HIV treatment program or study conducted in Africa.

"The DART study provides important additional clinical evidence that HIV treatment utilizing Viread helps to extend life in developing countries where the AIDS pandemic has hit the hardest," said John Martin, PhD, Chairman and Chief Executive Officer, Gilead Sciences. "In addition, we were pleased to see Viread was well tolerated in the study, and that kidney monitoring tests were shown not to be necessary in resource-limited settings when using the product as part of a first-line HIV treatment regimen. We congratulate the DART team on their success in this important research effort."

### **About the DART Study**

DART was a five-year, open-label, randomized trial among 3,316 treatment-naïve adults with advanced HIV disease in Uganda and Zimbabwe. All trial participants received HIV treatment. Patients were randomized (1:1) into one of two treatment groups. In the first group, patients' laboratory test results were provided to their physicians to help inform their treatment decisions. In the second group, doctors were not given the laboratory test results and made decisions about patient care based on clinical assessments alone. As a safeguard, results were provided for all patients whose laboratory safety results were seriously abnormal.

Seventy-four percent of patients received a combination regimen of Viread with lamivudine/zidovudine. Sixteen percent of patients received nevirapine/lamivudine/zidovudine and nine percent of patients received abacavir/lamivudine/zidovudine.

Exclusion criteria for DART enrollment included creatinine levels of more than 360 µmol/l (4.1 mg/dl) and/or urea levels of more than five times the upper limit of normal. Sixty-five percent of patients in the DART trial were female and the median age of trial participants was 37 (18-73). The median CD4 cell count was 86 cells/mm<sup>3</sup>.

Among patients whose doctors received regular laboratory test results, the survival rate after five years was 90 percent. Among patients whose doctors relied on clinical assessments alone, the survival rate similarly was 87 percent. No difference in the occurrence of drug-related side effects was seen between the two groups.

DART researchers also examined various measures of drug safety, including the effect of HIV medicines on kidney function. At baseline, 52 percent of DART trial participants had impaired renal function upon enrollment, defined as having an estimated glomerular filtration rate (eGFR) of less than 90 ml/min/1.73m<sup>2</sup>. In addition, researchers evaluated the presence of chronic kidney disease (CKD) using two defining criteria: The first defined CKD as GFR of less than 60 ml/min/1.73m<sup>2</sup> present on at least two occasions for more than three months, or a 25 percent drop in GFR for patients whose GFR was already less than 60 ml/min/1.73m<sup>2</sup> at baseline. The second definition characterized CKD as being present among any patient who experienced a 25 percent drop in GFR from baseline.

After 216 weeks of treatment, a severe decrease in GFR to less than 30 ml/min/1.73m<sup>2</sup> was observed infrequently in DART participants receiving Viread. Severe GFR decreases were seen in 3.1 percent of participants on a Viread-based regimen, compared to 2.4 percent and 1.9 percent of patients receiving study regimens based on the drugs abacavir and nevirapine, respectively, which was not statistically significant. CKD was slightly more common among patients receiving a Viread-based regimen. Depending on the defining criteria used, either 3.4 percent or 5.9 percent of patients receiving Viread experienced CKD during the study, compared to 2.1 percent or 3.1 percent of patients receiving an abacavir-based regimen, and 1.1 percent or 2.1 percent of patients receiving a nevirapine-based regimen. Severe decreases in GFR or CKD were infrequent among DART participants regardless of whether laboratory testing was provided and regardless of patients' treatment regimens.

Renal disease contributed to 16 deaths during DART. Most of these cases also involved other HIV-related illnesses. Only two deaths were definitely or probably related to antiretroviral therapy that included Viread. Three other deaths involved patients who had severely decreased GFR at baseline, all of whom received Viread as part of their treatment regimen.

Viread and Truvada<sup>®</sup> (emtricitabine and tenofovir disoproxil fumarate) are recommended as first- and second-line antiretroviral options in World Health Organization (WHO) HIV treatment guidelines for the developing world. Gilead is committed to expanding global access to these medicines. The company has established numerous partnerships with generic manufacturers in India to produce and distribute high-quality, low-cost generic versions of its antiretrovirals in 95 developing countries. In addition, Gilead's tiered pricing system offers substantial price reductions in some 130 low- and middle-income countries. To date, more than 500,000 patients in the developing world are receiving Viread or Truvada.

The parent compound of Viread was discovered through a collaborative research effort between Dr. Antonin Holy, Institute for Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic (IOCB) in Prague and Dr. Erik DeClercq, Rega Institute for Medical Research, Katholic University in Leuven, Belgium. The inventors have agreed to waive their right to a royalty on sales of products containing tenofovir in low-income developing countries served by the Gilead Access Program.

## **About Viread**

In the United States, Viread<sup>®</sup> (tenofovir disoproxil fumarate) is indicated in combination with other antiretroviral agents for the treatment of HIV-1 infection. The following points should be considered when initiating therapy with Viread for the treatment of HIV-1: Viread should not be used in combination with Truvada<sup>®</sup> (emtricitabine and tenofovir disoproxil fumarate) or Atripla<sup>®</sup> (efavirenz 600 mg/emtricitabine 200 mg/tenofovir disoproxil fumarate 300 mg). Viread is also indicated for the treatment of chronic hepatitis B in adults.

The recommended dose for the treatment of HIV is 300 mg once daily taken orally without regard to food. The dosing interval of Viread should be adjusted in patients with renal impairment.

Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs, including Viread, in combination with other antiretrovirals.

Severe acute exacerbations of hepatitis have been reported in HBV-infected patients who have discontinued anti-hepatitis B therapy, including Viread. Hepatic function should be monitored closely with both clinical and laboratory follow-up for

at least several months in patients who discontinue anti-hepatitis B therapy, including Viread. If appropriate, resumption of anti-hepatitis B therapy may be warranted.

New onset or worsening of renal impairment including cases of acute renal failure and Fanconi syndrome has been reported with the use of Viread. It is recommended to assess creatinine clearance (CrCl) before initiating treatment with Viread and monitor CrCl and serum phosphorus in patients at risk. Administering Viread with concurrent or recent use of nephrotoxic drugs should be avoided. Viread should not be administered in combination with Hepsera<sup>®</sup> (adefovir dipivoxil).

Viread should only be used as part of an appropriate antiretroviral combination regimen in HIV-infected patients with or without HBV coinfection. HIV antibody testing should be offered to all HBV-infected patients before initiating therapy with Viread.

Decreases in bone mineral density (BMD) have been observed in HIV-infected patients. It is recommended that BMD monitoring be considered for patients with a history of pathologic fracture or who are at risk for osteopenia. The bone effects of Viread have not been studied in patients with chronic HBV infection.

Redistribution/accumulation of body fat has been observed in HIV-infected patients receiving antiretroviral combination therapy.

Immune reconstitution syndrome has been observed in HIV-infected patients receiving antiretroviral combination therapy, including Viread, which may necessitate further evaluation and treatment.

Early virologic failure has been reported in HIV-infected patients on triple nucleoside-only regimens. Patients on a therapy utilizing a triple nucleoside-only regimen should be carefully monitored and considered for treatment modification.

## **About Gilead Sciences**

Gilead Sciences is a biopharmaceutical company that discovers, develops and commercializes innovative therapeutics in areas of unmet medical need. The company's mission is to advance the care of patients suffering from life-threatening diseases worldwide. Headquartered in Foster City, California, Gilead has operations in North America, Europe and Australia.

*U.S. full prescribing information for Viread is available at [www.Viread.com](http://www.Viread.com).*

*U.S. full prescribing information for Truvada is available at [www.Truvada.com](http://www.Truvada.com).*

*U.S. full prescribing information for Hepsera is available at [www.Hepsera.com](http://www.Hepsera.com).*

*U.S. full prescribing information for Atripla is available at [www.Atripla.com](http://www.Atripla.com).*

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Source: Gilead Sciences, Inc.

Gilead Sciences, Inc.

Susan Hubbard, 650-522-5715 (Investors)

Erin Rau, 650-522-5635 (Media)

[www.gilead.com](http://www.gilead.com)