New hope to halt spread of HIV

Canadian study finds treating infected patients with drug cocktail leads to giant drop in new cases

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Treating HIV with a cocktail of drugs dramatically reduces the spread of the deadly virus, a new Canadian study shows.

New infections have plummeted in British Columbia as more people with HIV are treated with antiretroviral AIDS drugs, according to the study published Sunday in the British medical journal *The Lancet*.

The B.C. study found a 52 per cent reduction in the number of new HIV cases in the province from 1996 to 2009. Researchers also found a similar drop in a smaller population base of intravenous drug users.

The study, published the same day the 2010 AIDS Conference kicked off in Vienna, proves as far as its authors are concerned that the treatment of HIV/AIDS with a cocktail of drugs not only benefits individual patients but also cuts the risk that they will infect others.

"We found a very strong relation between the number of patients on treatment and the number of new HIV infections diagnosed," said principal researcher Dr. Julio Montaner, president of the International AIDS Society. "This was a negative correlation, meaning the more people you have on treatment, the less people become infected."

According to the World Health Organization, 33.4 million people were living with HIV in 2008. While the number of deaths declined to 2 million in 2008 from 2.2 million in 2004, about 2.7 million new infections still occur each year.

Until a vaccine or cure is found — something that is years away despite breakthroughs, including the discovery of two antibodies that neutralize most strains of AIDS in the laboratory — the best way to stop the pandemic may be a worldwide rollout of a cocktail of antiretroviral drugs for patients that qualify for them, Montaner said.

Montaner, chair in AIDS Research at University of British Columbia's Faculty of Medicine, and his team at the B.C. Centre of Excellence in HIV/AIDS found that, between 1996 and 2009, the number of patients receiving the Highly Active Antiretroviral Therapy, or HAART, rose from 837 to 5,413. At the same time, the number of new HIV cases fell from 702 to 338 a year.

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Drugs reduce spread of HIV

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Montaner's study has triggered a shift in UNAIDS treatment strategy. On the eve of the AIDS conference, the UN agency announced Treatment 2.0, based on the results of Montaner's study and other supporting evidence.

"He has been an important partner in developing the strategy and the concepts the way they stand now," explained Dr. Bernhard Schwartlander, director for evidence strategy and results with UNAIDS.

"We estimate that probably one-third of all infections could be avoided simply by treating all of those who should be treated."

That means, according to Schwartlander, up to 1 million new HIV infections could be avoided. "We have to move away from seeing a treatment program as a cost factor to recognizing it as a . . . smart investment, because not only will we keep people healthy, alive and productive, we will also avoid new infections."

Montaner was one of the first to recognize that treatment might have an effect on prevention, Schwartlander said. His work "was certainly one of the elements that led to us putting these pieces together," Schwartlander added.

The new AIDS treatment program calls for a massive rollout of antiretroviral treatment, the creation of even cheaper and less toxic drugs, and an increase in voluntary HIV testing and counselling.

Steps also must be taken to streamline the medical expenses associated with HIV in the developing world, which would result in more money being directed toward the rollout of drugs to more patients.

"We have to simplify medical treatment to the primary-care level, where people can be reached at their houses, in their villages," Schwartlander said.

Implementing this new strategy could result in averting an additional 10 million deaths by 2025, according to UNAIDS.

In Vienna on Sunday, Montaner said world leaders lack the political will to ensure everyone infected with HIV and AIDS gets treatment.

He said the G8 group of rich nations has failed to deliver on a commitment to guarantee so-called universal access and warned this could have dire consequences.

"This is a very serious deficit," Montaner said. "Let's rejoice in the fact that today we have treatments that work . . . what we need is the political will to go the extra mile to deliver universal access."

So what accounted for the rapid decrease in new HIV cases in the B.C. study?

According to Montaner it's simple: As patients in B.C. received HAART treatment and as the level of free and easily accessible treatment expanded across the province, the level of the AIDS virus in patient's blood, semen and vaginal secretions became virtually undetectable.

That meant the risk of transmitting the disease was close to nil, and therefore the level of transmission and new cases dropped substantially.

"All of the above occurred as a result of us being able to drastically reduce the amount of viral load in the community," Montaner said in an interview with the *Star* before he left for Vienna.

The more people you have on treatment, the less people become infected

DR. JULIO MONTANER, B.C. AIDS RESEARCHER

That's despite an ever-growing rate in other sexually transmitted diseases in B.C., such as gonorrhea, syphilis and chlamydia, according to Montaner.

Montaner and his fellow researchers looked at three periods based on antiretroviral use in B.C. The first was 1996-1999 during the first rollout of HAART treatment; then 2000-2003 and 2004 -2009.

The study found that between 1996 and 1999, there was a steep increase in HAART use. During this period, the number of new HIV cases declined 40 per cent.

From 2000 to 2003, HAART use increased slightly and the number of HIV diagnosis remained stable.

Between 2004 and 2009, the new HIV cases per year decreased by 23 per cent.

A study Montaner did in 2006 also showed a decrease in potential AIDS cases. He created a hypothetical population-based model, which showed that, over a 45-year period, transmission of HIV could be cut substantially with proper antiretroviral treatment of patients.

At the Toronto AIDS Conference in 2006, Montaner suggested that a widespread rollout of the use of a cocktail of drugs could reduce transmission rates. "We must stress that we do not see HAART as a replacement for the prevention effort — including vaccine research — but rather an essential part of it," he said at the time.

"I came out saying if we treat aggressively more people and stop thinking of saving money and spend more, we will decrease HIV transmission and morbidity," Montaner said last week. "Treatment shuts down the virus's ability to replicate itself, and it becomes undetectable."

But his views in 2006 were perceived by some as "controversial," triggering a quiet debate within the AIDS research and medical community.

"We're still chasing our tail," said Montaner. "We need to step up the role of treatment so it can reshape the curve so the epidemic can contract rather than constantly expand."

Neither Montaner nor Schwartlander suggest that regular prevention methods be abandoned.

"We are not advocating everyone with HIV get treatment so there wouldn't be transmission," said Schwartlander. "What we're saying is if you treat everyone who is eligible for antiretroviral therapy, we will have a significant effect on prevention. But it won't entirely stop the epidemic. Other prevention tools are still important."

With files from the Star's wire services