

In the news



AIDS 2006

Time to Deliver • Passons aux actes

The XVI International AIDS Conference — AIDS 2006 —, which took place in August in Toronto, generated much hope among its 25,000 participants from 118 different countries. More than 4,500 scientific abstracts were presented and some revealed very promising results. *Relay's* editorial board member Dr. Harold Dion was there. He reports on some of the most exciting advances discussed at the conference.

In 10 years, triple therapy has gone from 10 pills a day to just one



When triple therapy appeared in 1996 and helped transform HIV infection from a death sentence to a chronic disease, people with HIV often had to take a great number of pills up to three times a day according to a strict schedule. Now, 10 years later, Atripla®, a triple therapy (tenofovir, emtricitabine and efavirenz) taken in one pill once a day, has just been approved in the US.

Tenofovir and emtricitabine (FTC), two drugs in the nucleoside/nucleotide analog category, are already available in

combined form in a single pill (Truvada®). Efavirenz (Sustiva®, a non-nucleoside reverse transcriptase inhibitor) was added to provide effective triple therapy in a single pill. Over the course of the conference, studies were presented that showed that the concentration of each of the three drugs in the blood was similar to that observed when each medication was taken separately.

For people who can tolerate the well-known side effects of efavirenz (dizziness, insomnia, nightmares, depression), this new medication will offer a simplified treatment that should improve compliance, which is so important to sustained suppression of HIV.



IAS President elect Julio Montaner (Canada) discusses ARVs in his plenary speech at the 2006 International AIDS Conference in Toronto



Former US President Bill Clinton and Bill Gates chat in front of more than 6,000 delegates at the Conference

64 new medications under development

We're very fortunate to have such a great number of medications in the process of development. A number of clinical trials were presented and eight of these (in six different drug classes) had truly encouraging data on these new drugs' ability to reduce viral load and increase the number of CD4 cells, both of which were significantly better than comparator regimens. The study medications were compared to placebo given alongside optimized background treatment over a period of 24 to 48 weeks, in patients with multiple resistance to existing anti-HIV medications. Promising study medications included:

- Fosalvudine tidoxil (nucleoside reverse transcriptase inhibitor)
- TMC 125 (etravirine – non-nucleoside reverse transcriptase inhibitor)
- TMC 114 (darunavir – protease inhibitor) *now approved by Health Canada under the name Prezista®*
- Brecanavir (protease inhibitor)
- Maraviroc (CCR5 inhibitor)
- Vicriviroc (CCR5 inhibitor)
- MK-0518 (integrase inhibitor)
- TNX-355 (monoclonal anti-CD4 antibody)

New hope for prevention while we wait for a vaccine



Photo: © Lise Beaudry / IAS

On the prevention side, conference delegates discussed microbicides, circumcision and pre-exposure prophylaxis (PREP). Microbicides have the potential to considerably diminish transmission rates of HIV among women everywhere in the world who have difficulty negotiating safe sex practices with their men. The four microbicides studied (all gels containing antiretroviral medications) were applied on the inside of the vagina one hour before sexual relations. The first results are expected at the beginning of 2008. There's potential for microbicides to be used rectally as well.



With regards to the effectiveness of male circumcision in preventing HIV transmission, 11 prospective studies conducted in different African countries showed a 50 to 90% decrease in the



Photo: © Lise Beaudry / IAS

Delegates review hundreds of poster presentations in the exhibition hall at the 2006 International AIDS Conference in Toronto

number of HIV infections among men who were circumcised.

PREP also shows promise as a means of prevention.

PREP involves taking antiretroviral medications *before* exposure to HIV. This strategy could potentially be useful among people at particularly high risk such as intravenous drug users, sex workers, and men who have unprotected sex with men. Animal studies have already shown that PREP effectively prevents HIV infection. Clinical trials are

now underway in Botswana, the United States (among men who have sex with men), Thailand (among IV drug users), Ghana and Peru. Until now, PREP research has focused primarily on tenofovir and on the combina-

tion of tenofovir and emtricitabine (FTC).

Finally, in the search for an anti-HIV vaccine, 85 candidates are now in clinical trials on humans, although none has yet proven effective. Because HIV mutates rapidly, an effective vaccine

must stimulate an immune response to the wide range of viruses that might be encountered. Despite how long the road to a vaccine now looks, scientists remain optimistic thanks to recent progress in understanding interactions between antigens and the immune system, and the body's natural defenses before the immune system becomes active. Optimism is also fueled by money. The Global HIV/AIDS Vaccine Enterprise will be set up with \$300 million from the Bill and Melinda Gates Foundation and \$315 million from the Centre for HIV/AIDS Vaccine Immunology of the National Institutes of Health in the US. These



Photo: © Lise Beaudry / IAS

IAS President and Conference Co-Chair Dr. Helene Gayle and Bill and Melinda Gates respond to the press enquiries at the end of the Conference in Toronto

new initiatives join ongoing efforts of the International AIDS Vaccine Initiative, founded in 1996, and the AIDS Vaccine Advocacy Coalition, founded in 1995.

Important breakthrough in the fight against AIDS



Professor Rafick-Pierre Sékaly

The Monday after the conference wrapped up, Professor Rafick-Pierre Sékaly from the Université de Montréal announced that his team of researchers had identified a protein (PD-1) that, once stimulated, permitted restored functioning of CD8 cells, which are responsible for eliminating CD4 cells that have been infected and made dysfunctional by HIV. The work was reproduced by American researchers and published in the August 28th edition of the prestigious *Nature Medicine*. The discovery could potentially open new avenues for the development of treatments or vaccines against HIV.

These clinical advances, exciting as they are, represent only a small sample of the rich and diversified scientific program showcased at AIDS 2006. If you want to wade through more, a complete list of the abstracts is available at www.aids2006.org. 