New Prevention Technologies

AIDS is not a new concept for anyone to grasp. For the last thirty years, it has been in the news and media across the world and it is not stopping. In 2006, 4.3 million new cases were reported and 2.9 million died. 95% of people living with HIV/AIDS live in underdeveloped countries and 90% do not know that they carry the virus. Currently, there is no cure for AIDS, but this article will discuss how vaccines, microbicides, pre-exposure prophylaxis and male circumcision will help stop the rapid spread of HIV around the world.

There is currently not an AIDS vaccine, but there are tools that exist and others which are under development. Ultimately, the AIDS vaccine offers the best hope for the future, however, there are many difficult factors surrounding it. Clinical trials are long and costly. The cost of doing a six to ten year trial would cost about $230 million. Due to time and money, research into the AIDS vaccine is going slowly. However, there are other contraceptive development trials currently going on around the world today.

Microbicides are substances that can reduce the transmission of HIV and other STDs. Microbicides are topical products such as gels and creams. There are no microbicides on the market, but they could be available in as little as five years. The microbicide will act as a physical barrier to protect the cervix. The cervix is extremely vulnerable, as it is only one cell layer thick.

The ideal microbicides will be active against other STD pathogens and some may prevent pregnancy. It will be effective over long periods of time, bio-diffusible and bio-adhesive. It will also be able to maintain and enhance the normal vaginal ecology and will not be absorbed systematically. Most importantly, the microbicides must not be expensive in order to reach people in all countries. The microbicides will be used in harm reduction messages. They will “back-up” condoms and will be used with condoms for added lubricant and pleasure. Researchers do not know if all vaginal microbicides are safe for rectal use. It is important to know if they are safe because if they are not, label warnings are imperative. Vaginal microbicides will most likely be marketed before the rectal microbicides. The vaginal walls are 40 cell layers thick, while the rectum is only one cell layer thick.

Microbicide trials are presently taking place in North America, Europe and Africa. The first generation of microbicides are predicted to be 40-60% effective. The second generation should be 60-80% effective. However, in February 2007, clinical trials of microbicides were shut down in South Africa due to safety

concerns. One of the trials appeared to increase the risk of women being infected with HIV. Researchers said that they will continue to move on with different trials and not let this affect the research and use of microbicides in the future.

Pre-exposure prophylaxes are anti-retroviral drugs taken once daily to prevent HIV in uninfected people. The PreP will not be 100% effective and must be administered every day. There are currently trials going on in Botswana, Ghana, and Peru, but results will not be available until 2008 or 2009.

Male circumcision is another way to stop the spread of HIV. The Orange Farm Intervention Trial in 2005 showed that the risk of men becoming infected with HIV was reduced by 60% with circumcision. Observational data showed that countries with higher circumcision rates had lower rates of HIV infection. However, researchers must be aware of religious and cultural communities when they advise this procedure. They also must make sure that the procedure is done in a sterile environment. Trials are underway in Kenya and Uganda to see if circumcision reduces the rate of transmission to female partners and results will be available in 2007.

Finally, another way to stop the spread of AIDS is through herpes suppression. In some parts of sub-Saharan Africa, 70% of the population has herpes. In Canada, 1 out of 5 or 6 people have it. The body's immune system will automatically try to heal the herpes sore, which means there are more immune cells at the spot, which increases the risk of infection if fluid containing HIV comes in contact with the sore. It is important to suppress herpes in HIV positive people because the herpes virus can cause HIV to make more copies of itself when the herpes virus is active. Two large scale trials are currently going on in Latin America, Africa and the United States, testing the effectiveness of herpes suppression for HIV prevention. These results are expected by 2007 or 2008.

For the last twenty years, almost all funding for these contraceptive developments and related research has come from the government and various foundations. It is extremely important to get the word out about some of these unknown developments. We must act now by raising awareness, mobilizing communities, building community capacity, conducting research, and adapting preventative messages.