

“ABC” is Not Enough: The Promise – and Challenges – of Microbicides

Introduction

Coordinated promotion of abstinence, monogamy, and effective use of condoms – the so-called “ABC approach” – has helped reduce HIV infections in some parts of the world. Still, HIV/AIDS continues to grow with each passing day, and it is increasingly clear that now, 25 years into the AIDS crisis, promising new HIV prevention technologies can help reduce the number of women, men, and youth who contract the Human Immunodeficiency Virus, or HIV, in the years ahead.

Globally, nearly 40 million people are infected with HIV, and nearly 25 million have already died of AIDS. According to the World Health Organization (WHO), almost half of individuals now living with HIV/AIDS are women.¹ The development of new, innovative prevention methods – especially strategies geared toward the experience and needs of women – is now more urgent than ever. One such technology is microbicides.

The Science of Microbicides

“Microbicides” (my-crow-besides) refers to an array of products used to prevent the transmission of HIV and other sexually transmitted diseases. In their simplest form, microbicides would function as a substance that could be used during sexual intercourse to stop HIV infection from taking place, even when one of the partners is infected. More broadly, microbicides could come in the form of gels, creams, suppositories, films, or in sponges or rings.

Microbicides might work against HIV transmission through five possible approaches: 1) microbicides could inactivate the pathogens causing these viruses; 2) microbicides could create barriers between the pathogen and tissue; 3) microbicides could strengthen the body’s natural defenses; 4) microbicides could inhibit viral entry; and/or 5) microbicides could inhibit replication HIV.

Cultural Relativity of Microbicides

Microbicides are promising to scientists because their design permits use without a partner’s involvement. As the fastest-growing group of those infected with HIV, women could finally manage their own prevention needs by using vaginal microbicides to prevent the transmission of HIV and sexually transmitted diseases. In many countries where cultural norms make it difficult for women to insist that their male partners use condoms, microbicides can offer women a safer, female-controlled option.

Effectiveness of Microbicides

Because clinical trials on microbicide effectiveness are still underway, it is difficult to predict exactly when a safe, affordable product could be available. Microbicides are not a replacement for other prevention methods, so they must be used in combination with other prevention technologies. Still, experts on microbicide development contend that the first generation of microbicides will be 40-60% effective, and that the second generation will be 60-80% effective.² Microbicides will not be widely available for at least ten years due to extensive clinical trials needed to ensure product safety, but recent studies indicate that one candidate may be available as soon as 2010.

Prevention saves lives

¹ “Women and AIDS: Have you Heard us Today?,” World Health Organization, December 2004, www.who.int/features/2004/aids/en/index.html.

² Microbicides Short Talk, The Global Campaign for Microbicides, June 2006, www.global-campaign.org.

Once the research trials are complete and a viable candidate has been developed, microbicides have enormous potential to prevent transmission of HIV: it is estimated that a microbicide with only 60% effectiveness could prevent the transmission of 2.5 million HIV infections over a three-year period.³ There are currently 16 microbicial products undergoing clinical trials, and three have continued into the third phase (efficacy) of trials.⁴ The final phases of these trials are being conducted in countries such as Nigeria, South Africa, Uganda, India, and the US. Having recently received \$8 million from the National Institutes of Health, the Case Western Reserve University/University Hospitals Center for AIDS Research (CFAR) in Cleveland, Ohio is one of the leading microbicide research centers in the country, and is one of the initial 11 research centers sponsored and funded by the NIH.⁵

Funding for Microbicide Research

Because microbicides are not yet available, more funding is urgently needed to continue clinical trials. The majority of funding for microbicide research comes from the NIH, the US Agency for International Development, the Centers for Disease Control and Prevention (CDC), non-profits and other medical research companies.

Phases 1 and 2 (safety) of microbicide clinical trials cost up to \$13 million. Most microbicide products are still in these initial phases of development, so additional funding is necessary to move these products into subsequent testing. With three microbicide products in the third phase of clinical trials (efficacy), costing up to \$50 million in research, more funding could move these products from the trial setting to the market sooner, and accelerate the potential of microbicides to save lives.⁶

Federal legislation in the US would ensure that funding is directed toward microbicide research. Introduced in 2005, the Microbicide Development Act (S.550 and H.R.3854) calls for a section within NIH dedicated solely to microbicide development. Currently, the NIH allocates only 2% of its HIV/AIDS research to microbicides. The goal of the Microbicide Development Act is to permit expanded investments in microbicide research, and to provide incentives for pharmaceutical companies that invest in microbicides.

Personal Commitment to Microbicide Development: Máti's Story

As a second-year medical student conducting AIDS research at the Cleveland Clinic, Máti understands the reality and the necessity for microbicide development. She came to Cleveland from Zimbabwe in 2001, a country devastated by the HIV/AIDS epidemic: approximately 1,700,000 people live with HIV in Máti's native country. Of those, 890,000 are women ages 15 and older.

Born in a nation overwhelmed by HIV/AIDS, Máti's goal is to educate herself and others on prevention measures. Now pursuing a Masters of Public Health along with her medical degree, Máti hopes to apply her AIDS research to those who will be most affected.

As a Zimbabwean, Máti believes that microbicide development will improve women's ability to combat the virus. In her culture, "many rural women do not have access to education. They have no voice." Cultural norms often do not offer women the right to voice their opinion. "As a scientist and citizen of Zimbabwe," Máti believes that microbicides will provide options for women to protect themselves. Máti contends that the accessibility of microbicides will be carried out by training physicians and educating the public on its many benefits.

³ Alliance for Microbicide Development, 2004, www.microbicide.org/allianceinfo.

⁴ Microbicide Watch 2006, Alliance for Microbicide Development, April 2006, www.microbicide.org.

⁵ "Center for AIDS Research Grant Renewed With \$8 Million Award from NIH," Center for AIDS Research_Case Western Reserve University_University Hospitals, April 2004, www.clevelandactu.org/CFAR/index.htm.

⁶ Microbicides Short Talk, The Global Campaign for Microbicides.

