

NEW PREVENTION TECHNOLOGIES

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INTRODUCTION

New Prevention Technologies (NPTs)

- Microbicides
- Vaccines,
- Male circumcision
- Post exposure prophylaxis
- Pre-exposure prophylaxis
- Herpes suppression
- Cervical barriers

INTRODUCTION (II)

- Some not yet available
- Meant to complement existing prevention efforts:
education programs, awareness campaigns, male/female condoms
- Potential for positive impact on reducing HIV transmission
- Additional options for HIV prevention
- Could be part of prevention response to HIV/AIDS

HIV PREVENTION EFFORTS

Historically prevention “toolbox” for communities has been *limited*

- Increasing knowledge of how HIV/AIDS is transmitted,
- Promoting condom use
- Community *gatekeepers* prevent access to information and condom use particularly for the youth
- Socioeconomic barriers to HIV prevention access for some communities

WHY RESEARCH ON NPTs?

Why channel funds into NPTs when:

- Financing for HIV/AIDS is decreasing
- Governments are failing to provide treatment to all in need of treatment
- There are already technologies that work

Why not scale up existing strategies for effective response to HIV/AIDS?

SCOPE OF THE PROBLEM

- Approximately 33.3 million people are living with HIV/AIDS in the world
- About 22.5 million (67%) of these are in Sub Saharan Africa
- 10% prevalence rate of HIV in Malawi
- 170000 children living with HIV
- 610000 Orphans due to AIDS

WHY NPTs (II)

- Treatment is available but does not reach everyone who need it
- Transmission prevention is preferable to treatment
- Better to have adequate, appropriate and comprehensive prevention package

A comprehensive response to HIV/AIDS needs to:

- Provide adequate care and support
- Seek new and improved treatments
- Ensure prevention messages and tools reach all communities

NPTs AND WOMEN HEALTH

Women more vulnerable to HIV

**Socially and economically disadvantaged,
therefore increased risk:**

- *Lack of power to negotiate safe sex*

Biological susceptibility:

- *more exposure to HIV during sex-more volume of semen vs vaginal fluid,*
- *more concentration of HIV in semen*
- *more surface of vagina exposed to semen*
- *prolonged contact of semen with vagina*

OVERVIEW OF THE NPTs

Male circumcision

- 55-75% risk reduction of male acquisition of HIV
- However cultural, religious and ethnic influences affect its uptake
- Other health benefits reported

EXPOSURE PROPHYLAXIS

Pre-exposure prophylaxis

- ARVS to HIV non-infected person
- Taken on a regular basis, before exposure to HIV

Post-exposure prophylaxis

- ARVs to negative person after exposure to HIV

Concern: resistance generation, side effects

VACCINES

A substance that teaches the body's immune system to recognize and protect against the disease

- Has been difficult to develop due to the complexity of the Human Immunodeficiency virus (HIV)
- Ongoing efforts are in progress

MICROBICIDES

- Antimicrobial products applied to the surface of the vagina (and/or rectum) to prevent HIV transmission during sexual intercourse
- Promising intervention, mixed fortunes
- CAPRISA 004 study showed that use of an ARV vaginal gel had some protection against HIV infection
- VOICE study: no benefit, poor adherence
- MTN 020, and IPM 027 (vaginal ring containing 25 mg Dapivirine - ARV) currently underway in Malawi, SA, Zimbabwe and Uganda

TREATMENT AS PREVENTION

ARV treatment and HIV transmission

- We know that...
 1. Blood viral load is associated with the risk of sexual HIV transmission
 2. Successful treatment reduces the blood viral load to undetectable levels
- Opens the possibility of using treatment to prevent HIV transmission
 1. Also known as “treatment as prevention”
 2. **HPTN 052 SHOWED ABOUT 96% REDUCTION OF HIV INFECTION BETWEEN SERODISCORDANT COUPLES**

THE USE OF TREATMENT AS PREVENTION

Individual level

- The use of treatment as a risk-reduction strategy
- Individual risk-taking behavior

Population level

- The use of treatment as an intervention to reduce HIV infections in a population
- Public health perspective

OTHERS

- Herpes suppression
- Use of cervical diaphragms
- Cash transfer-to address poverty, change risky sexual behavior

NPTs AND WOMEN EMPOWERMENT

- Women control over HIV prevention
- Some protection better than none
- Ease of use- “not in the heat of the moment”
- Potential to allow women to conceive while at the same time benefiting from HIV protection in sero-discordant couples especially married women, those at risk of sexual violence

NPTs CAUTION ON USE

Women may still not use NPTs

Decision to use is a complex process:

- Does she think she is at risk from her partner?
- Does she understand how NPTs work?
- Can she afford the NPT?
- What does she anticipate her partner's reaction to be?
- Does she have enough authority to make her own decisions?
- How likely will she use it with her regular partner?

NPTs CHALLENGES

Some of the challenges include:

- Funding for research is challenging
- Difficulties getting country approvals to conduct NPTs research
- How to roll-out and improve access of working technologies
- How to integrate NPTs into existing interventions
- Engage communities to ensure new tools are acceptable

IMPROVING HIV PREVENTION

1. Do better with the strategies that we already have



2. Develop new biomedical technologies to prevent HIV



3. Adopt a more comprehensive approach to HIV/AIDS prevention

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