



AIDS 2010

XVIII INTERNATIONAL AIDS CONFERENCE
JULY | 18-23 | 2010 | VIENNA AUSTRIA

Rights Here, Right Now

Track C: Epidemiology and Prevention

Outline of presentation

1. The highlight of the conference: the CAPRISA trial
2. Vulnerable groups: IVDU, MSM
3. Young people
4. Incentivising behaviour change

The CAPRISA 004 trial

Vaginal microbicides: what?

“Microbicides are topical agents designed to reduce or prevent transmission of HIV and/or other sexually transmitted infections when applied to genital mucosal surfaces” (Alliance for Microbicide Development)

The ideal vaginal microbicide

- Effective in preventing transmission of HIV during sexual intercourse
- Not toxic when used frequently
- Does not prevent pregnancy
- Easy to use
- Cheap



Development of a vaginal microbicide: a decade of frustrations

Many candidates...

- Non-HIV specific products
 - Surfactants
 - Enhancers of vaginal natural protective mechanisms
 - Viral entry inhibitors
- Antiretroviral compound containing gels

Development of a vaginal microbicide: a decade of frustrations

Phase III trials completed by early 2010

- Surfactants:
Nonoxynol-9 (COL-1492), C31G (Savvy)
- Enhancers of vaginal natural protective mechanisms:
Carbopol 974P (BufferGel)
- Viral entry inhibitors:
Carrageenan (Carraguard/R151), Cellulose sulphate (Ushercell)

All "flat results": no product had a protective effect.

N-9 even had a harmful effect.

Development of a vaginal microbicide: a decade of frustrations

Latest frustration:

Naphthalene sulfonate (PRO2000 0.5%)

a viral entry inhibitor

High hopes at CROI 2009...

Outcome of HPTN-035: Phase IIb trial (N > 3000 women)

	HIV incidence (per 100 pyr)	HR vs placebo	HR vs no gel
PRO2000	2.7	0.70 (0.46 – 1.08)	0.67 (0.44 – 1.02)
BufferGel	4.1	1.10 (0.75 – 1.62)	1.05 (0.72 – 1.55)
Placebo gel	3.9		0.97 (0.66 – 1.44)
No gel	4.0		

Development of a vaginal microbicide: a decade of frustrations

...but another rude awakening: *Lancet*, Sept 20, 2010

	HIV incidence (per 100 pyr)	HR
PRO2000 0.5%	4.5	1.05 (0.82-1.34)
Placebo gel	4.3	

The CAPRISA 004 trial

- Trial of vaginal microbicide: 1% **Tenofovir** gel in HIV negative women in South Africa
 - First trial with an antiretroviral compound containing gel!
- Proof of concept trial, double-blind, placebo-controlled

CAPRISA 004- methods

- Setting: KwaZulu-Natal, South Africa
 - HIV incidence estimated at 11 – 16%
- 1085 HIV negative women enrolled
 - 18-40 yrs
 - sexually active, not pregnant
- BAT24 schedule of gel insertion:
 - Within 12 hrs before sexual intercourse + within 12 hrs after sexual intercourse
 - Not more than 2 doses/ 24 hours

CAPRISA 004 – main results

	Tenofovir	Placebo
HIV incidence	5.6	9.1
IRR = 0.61 (0.4 – 0.94) Protective effect 39% (6 – 60)		
HSV-2 incidence	9.9	20.2
IRR = 0.49 (0.3 – 0.78) Protective effect 51% (22 – 70)		

CAPRISA 004 – adherence & condom use

- Overall adherence with gel use: on average 72.2% of sex acts covered by 2 doses of gel
 - Lower in seroconverters than in women who remained HIV-
- Reported condom use: 80.3% of sex acts

CAPRISA 004 - safety

- No safety issues
- Big worry: resistance in case of “break-through” infection
 - No TDF related resistance detected – but short follow up and intense testing

CAPRISA 004 - Conclusions

- ❑ Excited: at last a gel that works
- ❑ ...but not ready for roll out
 - One trial in one population
 - Can we do better in terms of efficacy? Higher doses? Better adherence?
- ❑ More trials with more products underway (e.g. Dapivirine a product of Tibotec)

**Vulnerable groups:
IVDU, MSM**

Intravenous drug users

- RDS survey in 8 cities in Russia (2008-2010)
 - HIV: 2.6 % - 64.3% (>50% in 3 cities)
 - HCV prevalence: 49% - 90%
 - Non-IDU sexual partners: 32% - 70%
- Zanzibar (2007): first RDS survey among IDU in Africa
 - HIV: 16% ,associated with high risk sexual behaviour

Needle and syringe programmes

- NSPs in Australia

In the past 10 years, for every 1\$ invested in NSPs

- 0.2 days of disability adjusted life saved
- > 4\$ returned in health care cost savings

Needle and syringe programmes

■ NSPs in Estonia

- 2003 – 2009: numbers of needles distributed from 18,000 to >770,000
- 2005-2009: HIV incidence among new injectors (start injecting < 5 yrs ago)
18 / 100 pyrs to **7.5 / 100** pyrs

- **Strong evidence on cost-effectiveness but policies and laws block implementation (Lancet series).**

MSM

- Survey in Kampala (Uganda) – RDS
 - HIV: 14%
 - Recruitment difficult because of police actions

Opening session: "Human rights violations are a **barrier to knowing** your epidemic"

MSM

- South Africa and Senegal: difficult access to prevention and care services
 - Lack of understanding of risk behaviours by service providers - risky behaviours with female partners.

Young people

Young people

- Trends in HIV and behaviors in young people 15-24 yrs
- 21 countries with generalised epidemics (Africa and the Caribbean)
- 2000 – 2008:
 - significant reduction of 25% in HIV prevalence in 10 countries
 - correlation with behaviour change in 8

Incentivising behaviour change



What?

- Conditional cash transfer programmes (CCT): provide cash in exchange for active participation in educational and health care services
- Examples
 - UK: vouchers for pregnant women in exchange for smoking cessation
 - Tanzania: cash to stay STI free

Moral concerns

- **Bribery:** Paying people to act against their wishes
No: Offered to achieve outcomes most people desire
- **Coercion:** Compels people to behave using threats
No: Voluntary with prospect of gain (not loss)
- **Paternalistic:** Undermines individual autonomy
No: Facilitates autonomy when it makes it more likely that people act in line with their considered preferences

Moral concerns

- **Unfair:** People should not be paid to do what they should do anyway
 - No: Potentially more potent means of changing behaviour in the most socially deprived, thereby reducing health inequities
- **Waste of money:** Poor use of the public purse, where there are many competing demands
 - No: Potentially large health benefits from a modest increase in health expenditure

The Zomba cash transfer program (Malawi)

- Cash transfers of 10\$/ month + payment of school fees to keep girls (13-22yrs) in school or return to school if recently dropped out
- RCT: after 18 months intervention vs control
 - HIV prevalence: 1.2% vs 3.0%
 - HSV-2: 0.7% vs 3.0%
- Effect due to schooling or higher income?

Combination prevention

- “The strategic, **simultaneous use of different classes of prevention activities** (biomedical, behavioral, social/ structural) that operate on multiple levels (individual, relationship, community, societal), **to respond to the specific needs** of particular audiences and modes of HIV transmission, and to make **efficient use of resources** through prioritizing, partnership and engagement of affected communities”.