

Tasp : Etat des connaissances

Ce que l'on sait, ce que l'on ne sait pas

Gilles
PIALOUX

APHP(Tenon)
SFLS
www.vih.org

**SOLTHIS
HIV FORUM**
SIDA : NOUVEAUX DÉFIS EN AFRIQUE
AIDS: NEW CHALLENGES IN AFRICA

19-20 sept. 2013

PHOTO EXHIBITION
Solthis: 10 years of commitment
from September 9th 2013
www.solthis.org

 **Solthis**
10 YEARS

LES CORDELIERS
UNIVERSITÉ PIERRE ET MARIE CURIE
21, RUE DE L'ÉCOLE DE MÉDECINE - PARIS



SOLTHIS 10 ans - 19 et 20 SEPTEMBRE 2013

Male circumcision



Auvert B, PloS Med 2005
Gray R, Lancet 2007
Bailey R, Lancet 2007

Treatment of STIs



Grosskurth H, Lancet 2000

Male & female condoms



Structural / legal

HIV PREVENTION combined interventions

HIV Counselling and Testing



Coates T, Lancet 2000

Behavioural Intervention



Treatment for prevention = TasP

Donnell D, Lancet 2010
Cohen M, NEJM 2011

www.aids2012.org

Microbicides for women



Abdool Karim Q, Science 2010

Oral pre-exposure prophylaxis

Grant R, NEJM 2010 (MSM)
Baeten J, NEJM 2012 (couples)
Thigpen, NEJM, 2012 (Heterosexuals)

Post Exposure prophylaxis (PEP)

Scheckter M, 2002



Ce que l'on sait

Cohortes observationnelles

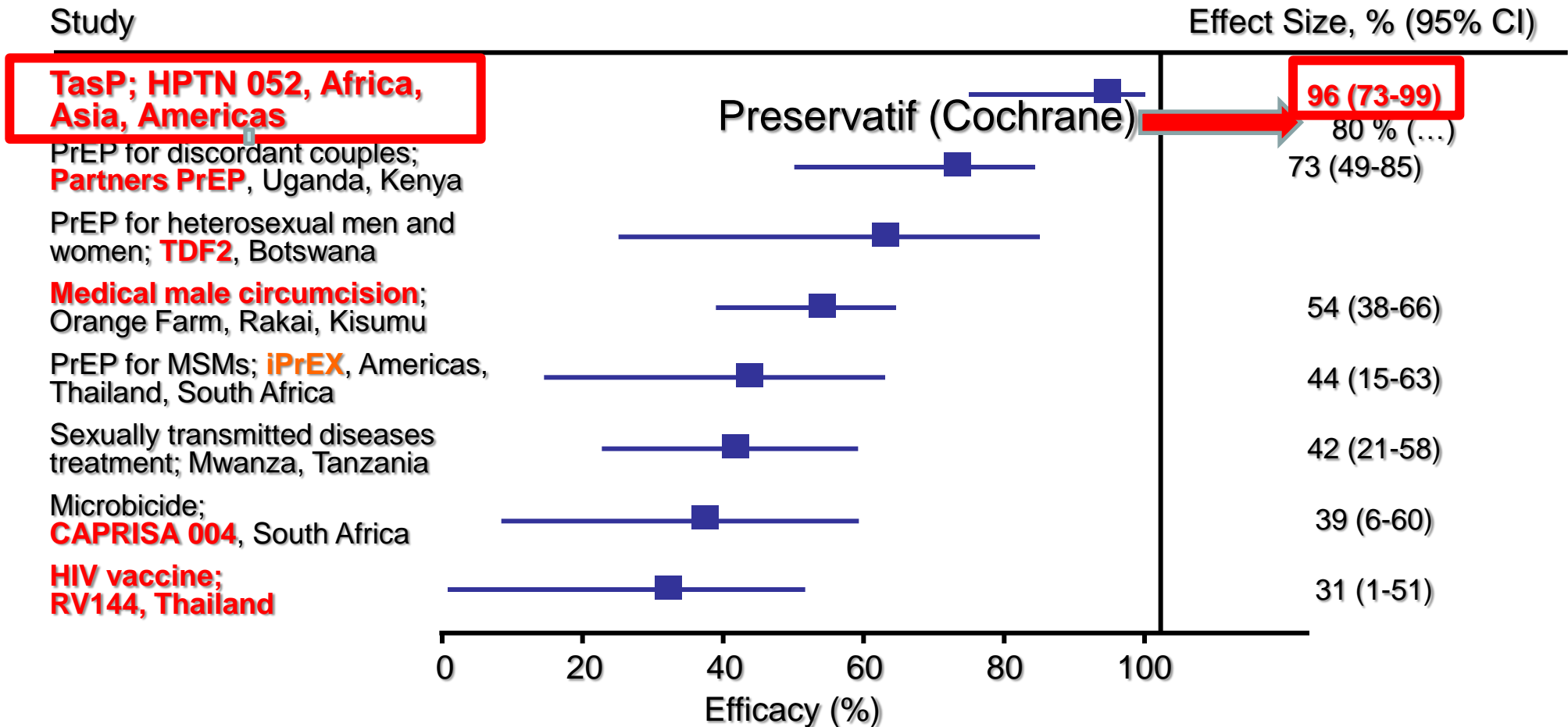
Meta-analyses : Attia, Baggaley

Modélisations

Expériences Test an Treat

1 étude randomisée (HPTN 052)

Efficacy of HIV Prevention Strategies From Randomized Clinical Trials

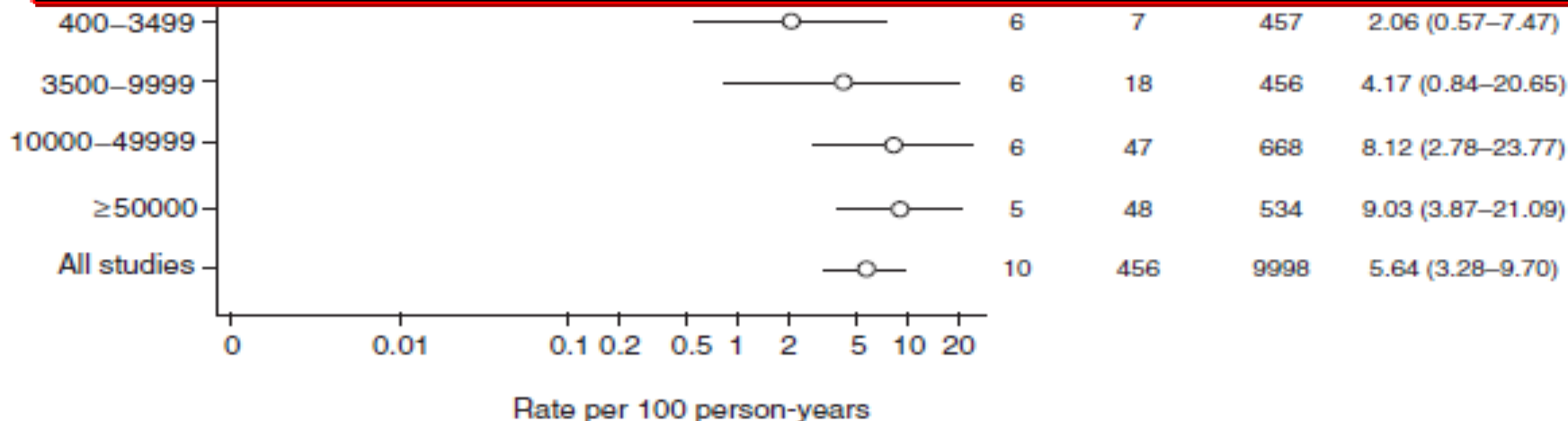


HIV (hetero)sexual transmissibility meta-analysis

Sexual transmission of HIV Attia *et al.*



Compatible avec une réduction de risques de transmission en dessous de 400 copies/ml de 0,16 [IC 95% : 0,02-1,13]



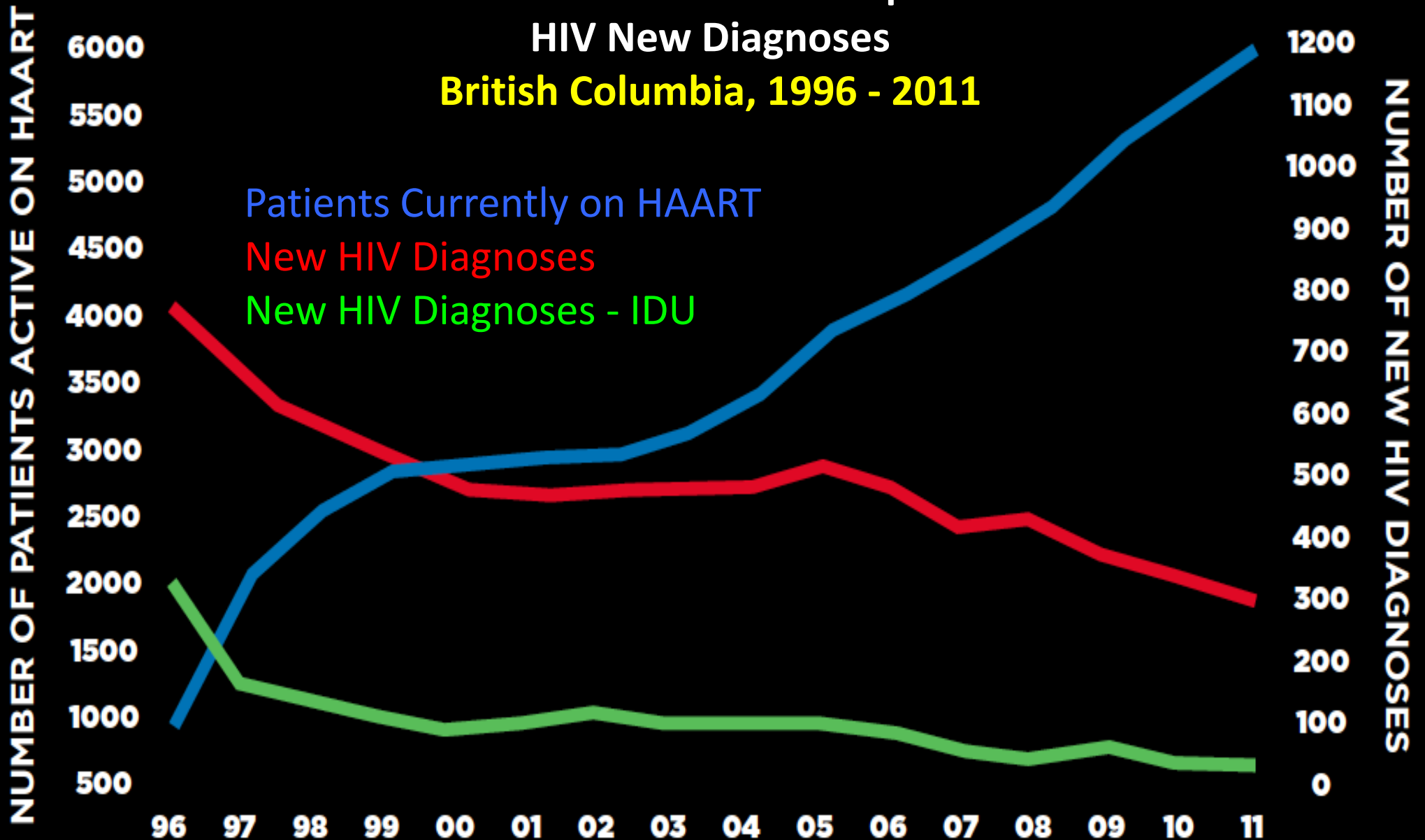
Heterosexual HIV-1 Infectiousness and Antiretroviral Use
Systematic Review of Prospective Studies of Discordant Couples

Rebecca F. Baggaley,^a Richard G. White,^b T. Déirdre Hollingsworth,^a and Marie-Claude Boily^a

- 50 publications.
- Nine allowed comparison between ART and non-ART users within studies (ART-stratified studies).
- incidence rates were 3.6/100 person-years (95% confidence interval = 2.0-6.5) and 0.2/100 person-years (0.07-0.7) for non-ART- and ART-using couples, respectively ($P < 0.001$), constituting a **91%** (79-96%) reduction in per-partner HIV-1 incidence rate with ART use.

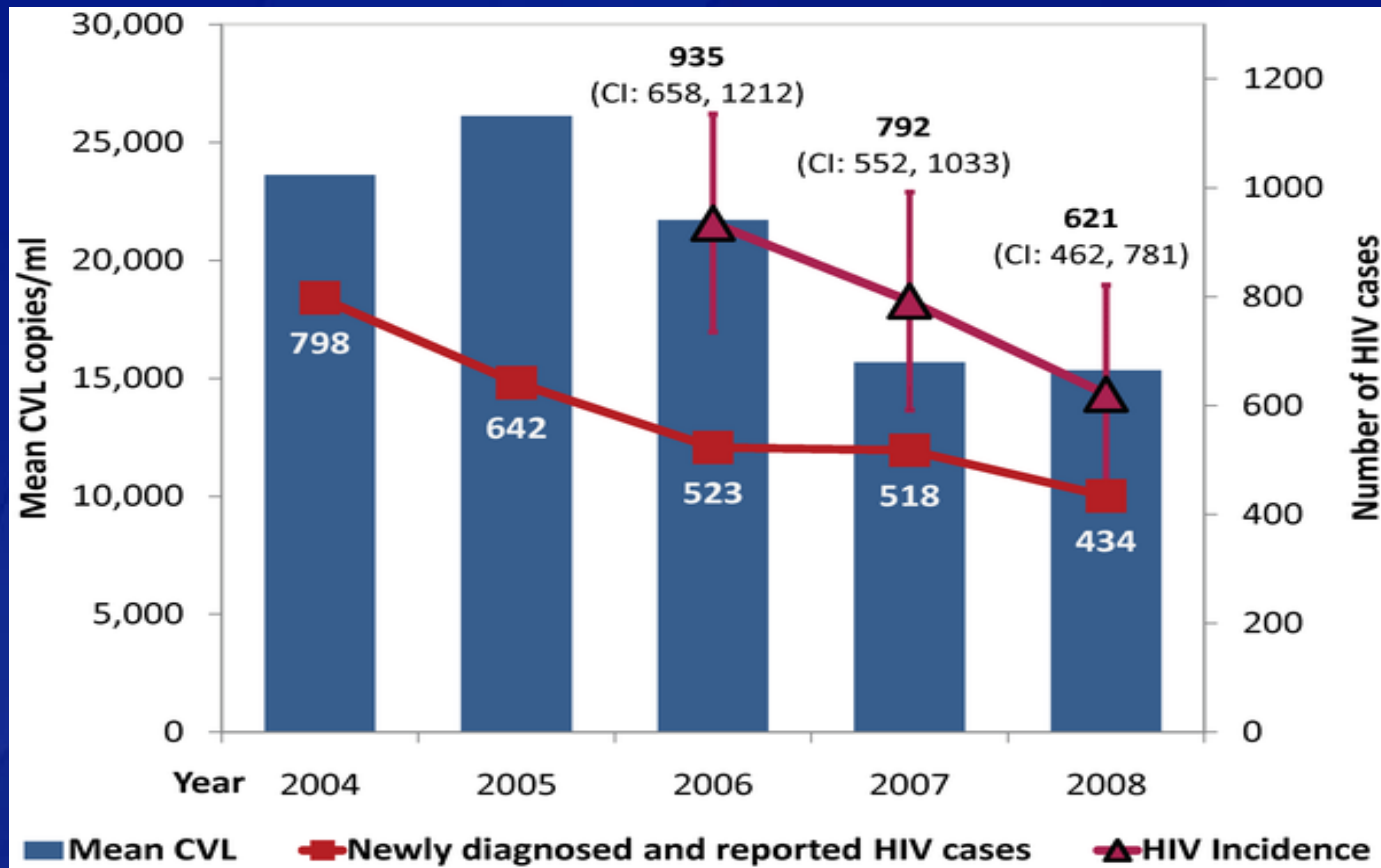
Association between HAART Expansion and HIV New Diagnoses

British Columbia, 1996 - 2011

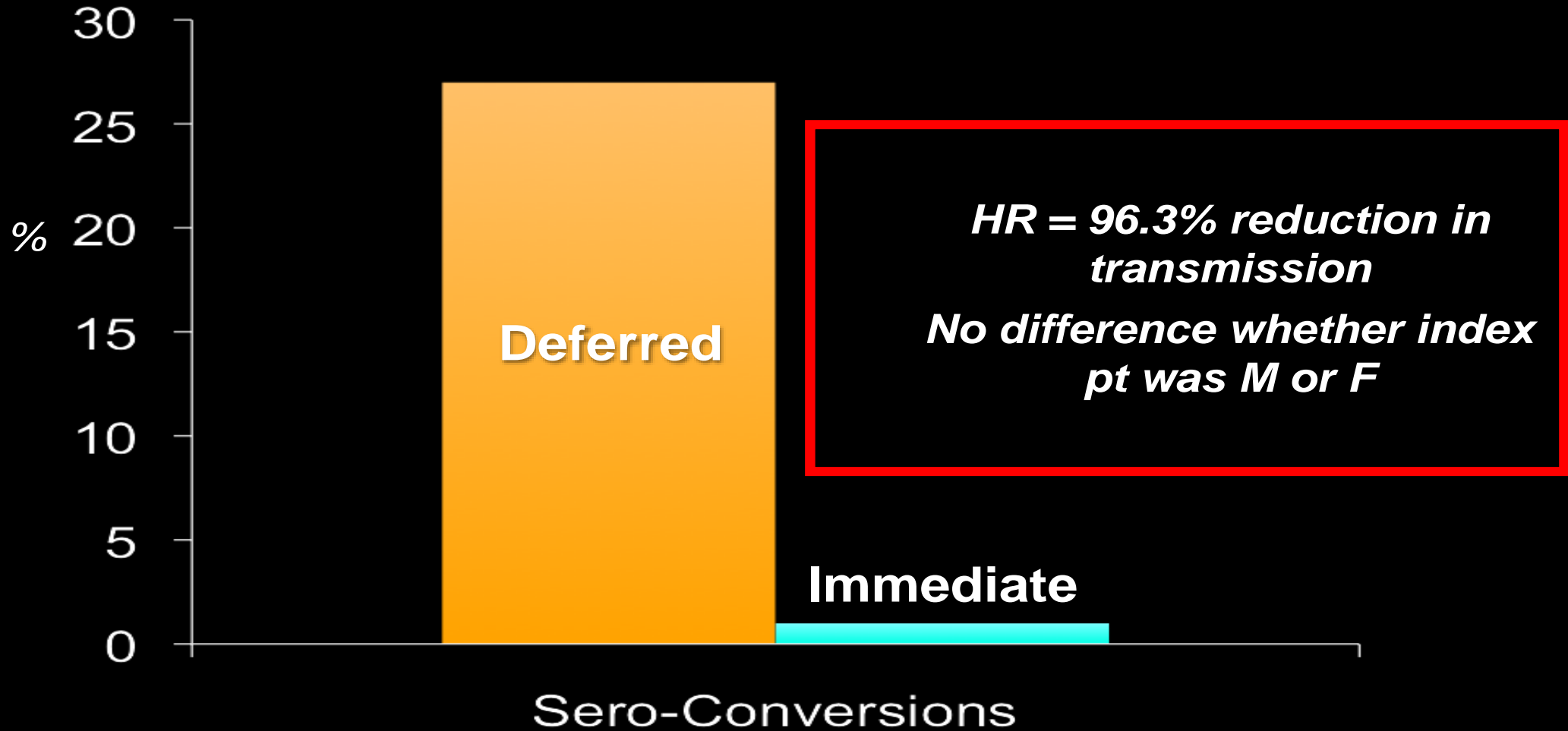


“Success” in San Francisco

Community Viral Load, Haart and HIV Incidence



HPTN 052: Immediate vs Delayed ART in Sero-discordant Couples



All Primary Clinical Events (N = 129)

17 subjects experienced >1 primary clinical event

| | Immediate | | Delayed | |
|---|-----------|--|-----------|--|
| Total (N=129) | 53 | | 76 | |
| Tuberculosis | 17 | | 33 | |
| Severe bacterial infection | 16 | | 11 | |
| Death | | | | |
| Chronic herpes simplex | | | | |
| Bacterial pneumonia (recurrent) | | | | |
| Oesophageal candidiasis | | | | |
| Cervical carcinoma | | | | |
| Kaposi's sarcoma | | | | |
| Wasting syndrome | | | | |
| Extrapulmonary cryptosporidiosis, HIV-related encephalopathy, lymphoma, PCP, septicemia (recurrent) | 0 | | 2 | |
| Other* | 2 | | 3 | |

**... et en plus
le traitement
précoce diminue
la morbidité**

Results. Relative to the status quo, the test-and-treat model resulted in a 34% reduction in new infections, 19% reduction in deaths, and 39% reduction in new AIDS cases by 2023. However, these results are counterbalanced by a near doubling of the prevalence of MDR (9.06% compared to 4.79%) in 2023. We also found that the effects of increasing testing and treatment were not complementary.

Conclusions. Although test-and-treat generates substantial benefits, it will not eliminate the epidemic for MSM in LAC. Moreover, these benefits are counterbalanced by large increases in MDR.

Neeraj Sood,¹ Zachary Wagner,¹ Amber Jaycocks,³ Emmanuel Drabo,² and Raffaele Vardavas⁴

¹Schaeffer Center for Health Policy and Economics, and ²Titus Family Department of Pharmaceutical Economics and Policy, University of Southern California, Los Angeles; ³Pardee RAND Graduate School, and ⁴RAND Corporation, Santa Monica, California

Ce que l'on ne sait pas

Tasp chez les HSH ?

Charge virale VIH dissociée VIH ?

Doute sur la CV communautaire ?

Quelle acceptabilité dans les PVD ?

Scaling-up du TasP : comment payer ?

Poids des PI et des Dg tardifs (50% HSH?)

Quid chez les couples « non stables » ?

Prévention combinée et coût-efficacité ?

Ce que l'on ne sait pas

Tasp chez les HSH ?

Charge virale VIH dissociée VIH ?

Doute sur la CV communautaire ?

Quelle acceptabilité dans les PVD ?

Scaling-up du TasP : comment payer ?

Poids des PI et des Dg tardifs (50% HSH?)

Quid chez les couples « non stables » ?

Prévention combinée et coût-efficacité ?

Community viral load as a measure for assessment of HIV treatment as prevention



William C Miller, Kimberly A Powers, M Kumi Smith, Myron S Cohen

Published Online

March 25, 2013

[http://dx.doi.org/10.1016/](http://dx.doi.org/10.1016/S1473-3099(12)70314-6)

[S1473-3099\(12\)70314-6](http://dx.doi.org/10.1016/S1473-3099(12)70314-6)

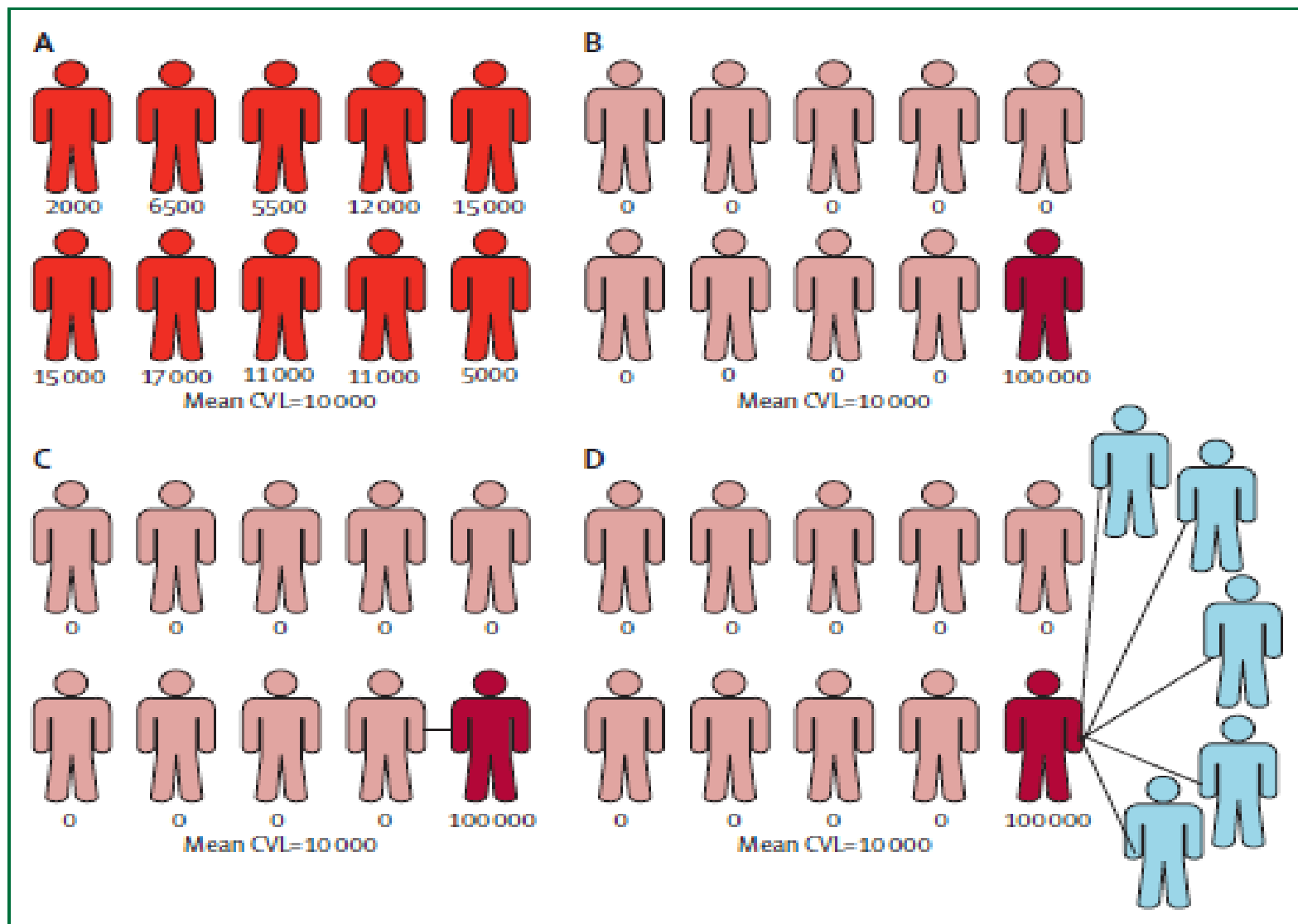


Figure 4: Populations with identical prevalence and community viral loads, but different potential for ongoing transmission
 (A) Population one: viral loads between 2000 and 17 000 copies per mL; (B) population two: viral loads less than 50 copies per mL in nine people and 100 000 copies per mL in one person; (C) person from population two with a high viral load is in a monogamous relationship with a person with HIV and viral suppression; (D) person from population two with high viral load with several uninfected partners. CVL= community viral load.

Ce que l'on ne sait pas

Tasp chez les HSH ?

Charge virale VIH dissociée VIH ?

Doute sur la CV communautaire ?

Quelle acceptabilité dans les PVD ?

Scaling-up du TasP : comment payer ?

Poids des PI et des Dg tardifs (50% HSH?)

Quid chez les couples « non stables » ?

Prévention combinée et coût-efficacité ?

Detection of HIV-1 RNA in seminal plasma samples from treated patients with undetectable HIV-1 RNA in blood plasma on a 2002–2011 survey

Sidonie Lambert-Niclot^{a,b,c}, Roland Tubiana^{b,c,d}, Céline Beaudoux^b,
Gilles Lefebvre^e, Fabienne Caby^{b,c,d}, Manuela Bonmarchand^f,
Michèle Naouri^e, Benoit Schubert^g, Marc Dommergues^e,
Vincent Calvez^{a,b,c}, Philippe Flandre^{a,b,c}, Catherine Poirot^{c,g}
and Anne-Geneviève Marcelin^{a,b,c}

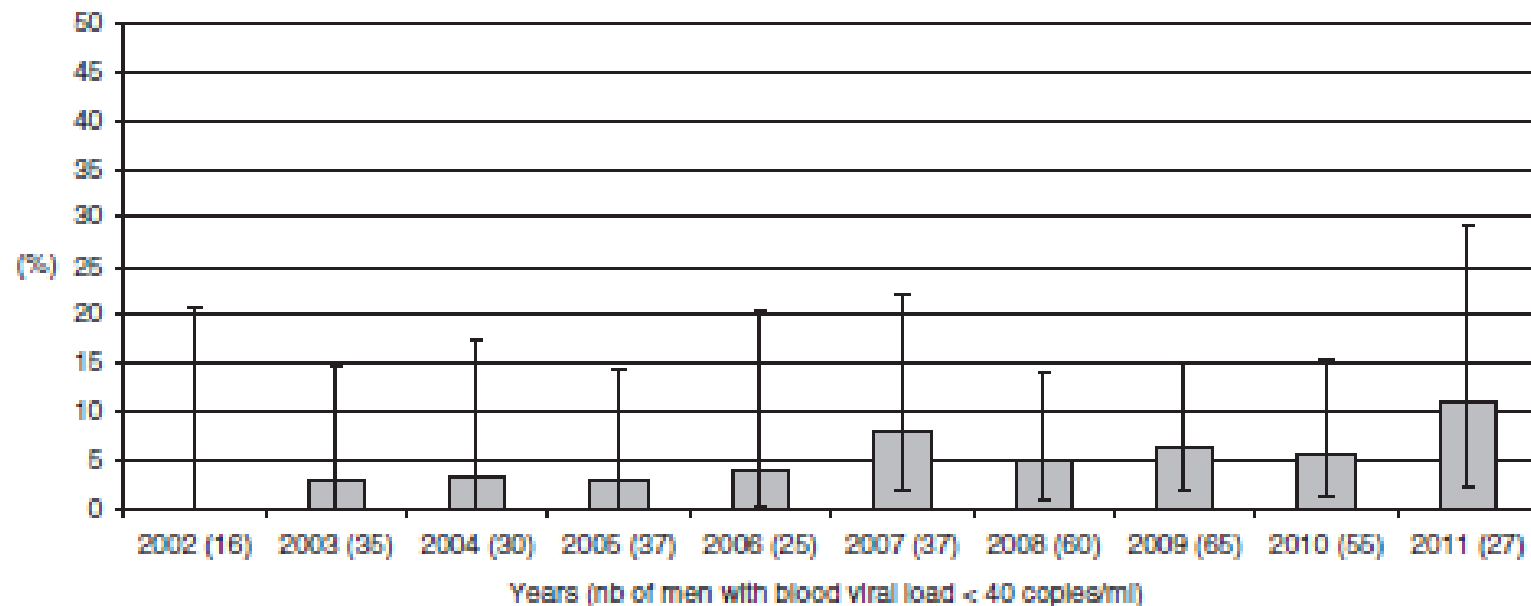


Fig. 1. Annual prevalence of men with discordant positive seminal HIV-1 viral load from 2002 to 2011. Columns represent the observed percentages of men with positive seminal viral load among the men with blood HIV1-RNA viral load less than 40 copies/ml tested each year. Bars represent the 95% confidence intervals.

(6.6%)

Thus, the population studied here involved heterosexual men with a stable female partner engaging in assisted reproduction techniques and did not represent the whole male HIV-1-infected population, especially men who have sex with men (MSM) with multiple partners.

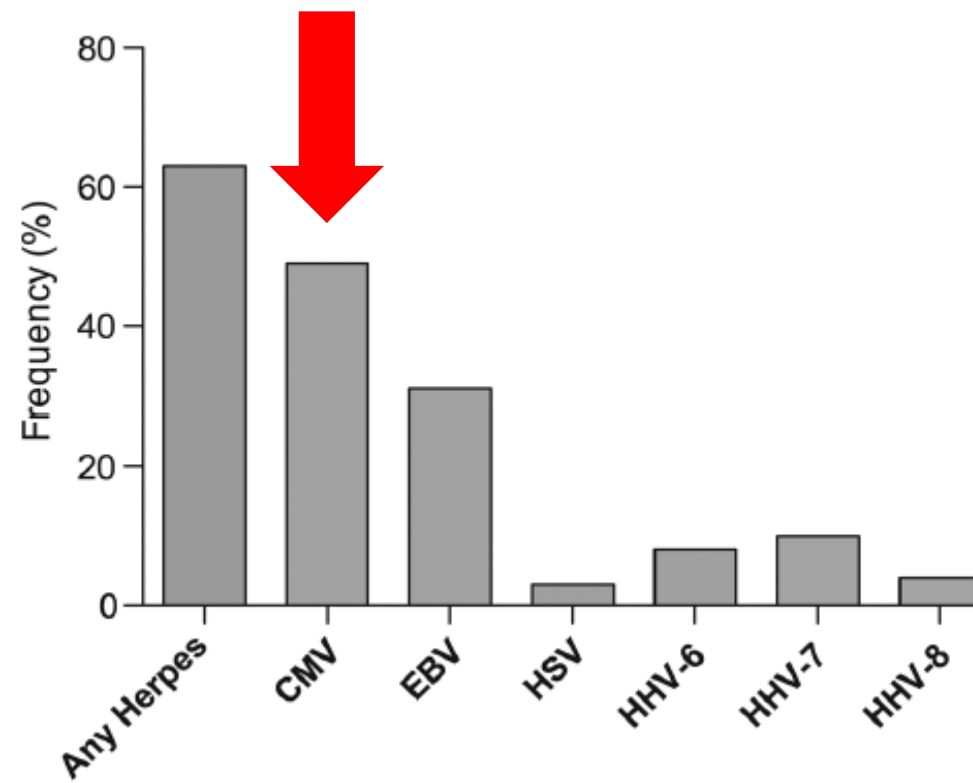
Shedding of HIV and Human Herpesviruses in the Semen of Effectively Treated HIV-1–Infected Men Who Have Sex With Men

Sara Gianella,¹ Davey M. Smith,^{1,2} Milenka V. Vargas,¹ Susan J. Little,¹ Douglas D. Richman,^{1,2} Eric S. Daar,³ Michael P. Dube,⁴ Fan Zhang,⁵ Christina C. Ginocchio,⁵ Richard H. Haubrich,¹ Sheldon R. Morris,¹ and the CCTG 592 Team

¹University of California, San Diego, La Jolla, ²Veterans Affairs San Diego Healthcare System, ³Los Angeles Biomedical Research Institute at Harbor–UCLA Medical Center, Torrance, and ⁴University of Southern California, Keck School of Medicine, Los Angeles, California; and ⁵North Shore-LIJ Health System, Lake Success, New York

Table 1. Demographics and Bacterial Sexual Transmitted Diseases

| Characteristics | No. (%) |
|---|----------------|
| Participants | 114 |
| Age, y, mean (95% CI) | 44 (37–50) |
| Race/ethnicity | |
| Caucasian | 79 (70) |
| Black | 30 (26) |
| Other | 5 (4) |
| Time on ART, d, median (IQR) | 882 (406–1725) |
| HIV RNA <500 copies/mL | 114 (100) |
| HIV RNA <50 copies/mL | 100 (88) |
| ≥90% adherence to ART past month | 99 (87) |
| CD4 ⁺ cell counts/ μ L, mean (95% CI) | 580 (532–628) |
| Detectable HIV RNA in semen | 11 (9.6) |
| HIV in semen, log ₁₀ copies/mL, median (range) | 2.1 (1.7–2.5) |



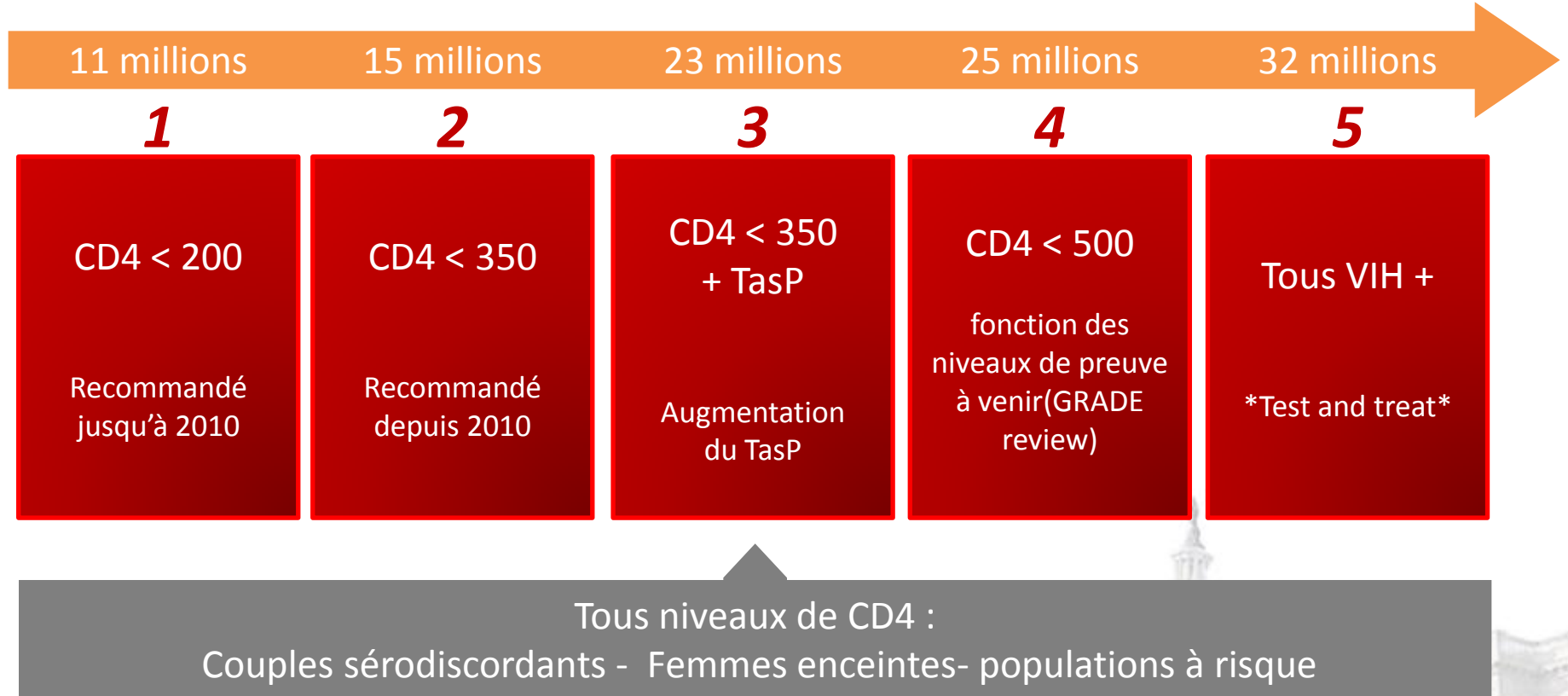
Conclusions. Low-level HIV replication in blood and high-level seminal CMV shedding, but not presence of asymptomatic STIs, is associated with seminal shedding of HIV in men receiving ART, conferring a potential risk for HIV transmission.

**« Le TasP insultant pour les 7 millions de malades
qui manquent encore cruellement de traitements
antirétroviraux au sud avec moins de 250 CD4 »**

Michel Kazatchkine

Scénarios pour une estimation des besoins en ARV dans le traitement et la prévention de l'infection par le VIH

Nombre de personnes éligibles à un HAART dans les pays à faibles et moyennes ressources



Source : OMS (I. Souteyrand)

Economics of antiretroviral treatment vs. circumcision for HIV prevention

Till Bämighausen^{a,b}, David E. Bloom^a, and Salal Humair^{a,c,1}

^aDepartment of Global Health and Population, Harvard School of Public Health, Boston, MA 02115; ^bAfrica Centre for Health and Population Studies, University of KwaZulu Natal, 3935 Mtubatuba, KwaZulu Natal, South Africa; and ^cSchool of Science and Engineering, Lahore University of Management Sciences, DHA Lahore 54792, Pakistan

PNAS Early Edition |

Results: incremental cost-effectiveness ratios

| | ICER | |
|---|----------------------------|------------------------|
| | US\$ per infection averted | US\$ per death averted |
| MMC (80%) vs. baseline | 1,096 | 5,198 |
| ART (80%) vs. baseline + MMC(80%) | 7,765 | 5,741 |
| TasP (80%) vs. MMC (80%) and ART(80%) | 14,894 | 16,180 |



ICER = incremental cost-effectiveness ratio, baseline = ART 50%, MMC 45%, TasP 0%



- **« TasP* is cost effective by commonly used absolute benchmarks but it is far less cost effective than circumcision and ART. »**

*
applied to South Africa

Mais

- A Soweto, en Afrique du sud, 20% des personnes VIH+ à qui on proposait un traitement anti-vih le refusait, notamment par craintes de stigmatisation.
- Dans une cohorte du Kenya, 42% des hommes et 31% des femmes séropositifs ne veulent pas d'un traitement antirétroviral dans le seul but de protéger leur(s) partenaire(s) !

WHO Guidance on Couples HIV Testing and Counselling

RECOMMENDATIONS

1. Couples and partners should be offered voluntary HIV testing and counselling with support for mutual disclosure. *Strong recommendation, low-quality evidence.*
2. Couples and partners in antenatal care settings should be offered voluntary HIV testing and counselling with support for mutual disclosure. *Strong recommendation, low-quality evidence.*
3. Couples and partner voluntary HIV testing and counselling with support for mutual disclosure should be offered to individuals with known HIV status and their partners. *Strong recommendation, low-quality evidence for all people with HIV in all epidemic settings / Conditional recommendation, low-quality evidence for HIV-negative people depending on country-specific HIV prevalence.*
4. People with HIV in serodiscordant couples and who are started on antiretroviral therapy (ART) for their own health should be advised that ART is also recommended to reduce HIV transmission to the uninfected partner. *Strong recommendation, high-quality evidence.*
5. HIV-positive partners with >350 CD4 cells/ μ L in serodiscordant couples should be offered ART to reduce HIV transmission to uninfected partners. *Strong recommendation, high-quality evidence.*

5. HIV-Positive partners with >350 CD4 cells/ μ L in serodiscordant couples should be offered ART to reduce HIV transmission to uninfected partners.

Strong recommendation, high quality evidence.

Released April 18th 2012 at

<http://www.who.int/hiv/pub/guidelines/9789241501972/en/index.html>



TasP : questions en suspens

- Quelle reproductibilité d'HPTN 052 en contextes différents ? (HSH, couples « ouverts », sodomie, sex workers...etc)
- Plaidoyer TasP nécessaire pour augmenter les engagements des bailleurs ? (quid de la question de traiter à 500 CD4, compétitions ou convergence des besoins ?)
- « *Déshabiller Pierre pour habiller Paul* » (syndrome des victimes de catastrophe aérienne)
- Approche plus efficace pour vaincre les résistances des individus au TasP ? Éviter la désinhibition ? Moins de « linkage of care » avec le TasP ?
- Quelle durée de l'effet TasP sur l'incidence ?
- Quelles combinaisons d'outils de prévention sont les plus cout-éfficace ?
- Passage du bénéfice individuel au bénéfice collectif ?

REMERCIEMENTS

WHAT MAKES THE HPTN 052 STUDY SO SIGNIFICANT?

An interview with Myron Cohen,
the study's lead author

BY JEFF BERRY

