



## Agreements and communication about viral load and condomless anal intercourse within homosexual male serodiscordant couples

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18 September 2015

## Background

### Effectiveness of 'treatment as prevention'

- Treatment as Prevention is highly effective in reducing the risk of HIV transmission in heterosexual serodiscordant couples, and is durable (*HPTN 052*).
- Although less conclusive, evidence is mounting that Treatment as Prevention is effective in homosexual serodiscordant couples also (*PARTNER* and *Opposites Attract*).
- It is likely the risk of transmission from condomless anal intercourse (CLAI) is very low when the HIV-positive partner's viral load is undetectable.

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## Background

### Viral Load Agreements and Communication

- Although serodiscordant couples have been a primary focus of Treatment as Prevention research and policy, very little is known about how they:
  - Make agreements about viral load and how these agreements align with practice
  - Communicate with each other about viral load.
- Qualitative research suggests that most couples do make agreements with each other to prevent transmission.

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## Methods

### Study Design

- Prospective longitudinal cohort study.
- Unit of recruitment is a couple comprising two men in an ongoing sexual relationship where one is HIV-positive and the other HIV-negative at baseline.
- Couples attend at least 2 clinic visits per year:
  - Viral load and CD4 in HIV-positive partners
  - HIV antibody tests in HIV-negative partners
  - Tests for sexually transmissible infections in both partners.
- Phylogenetic analysis conducted for the interim analysis and at the end of the study.

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## Methods

### Study Design

- Both partners complete a questionnaire at each clinic visit.
- Items relevant to this analysis include:
  - Sexual behaviour within the couple (and with outside partners)
  - Communication about viral load results
  - Relationship agreements about viral load
  - Ease of communication about viral load

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## Opposites Attract Study Methods

### Study Sites

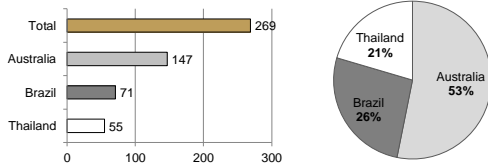


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**Results**

**Enrolments and Visits**

- By 30 June 2015, 269 couples were enrolled.



- 85.5% had attended at least one follow-up visit.

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**Results**

**Baseline Demographics**

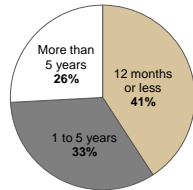
	HIV-Positive Partner	HIV-Negative Partner
Age – mean (median)	36.8 (35.1)	36.7 (35.1)
'Gay' sexual identity	93.3%	93.3%
University education	46.8%	53.0%
Full-time employment	50.6%	49.4%
<b>Ethnicity</b>		
Caucasian	40.1%	42.4%
Thai	20.1%	20.4%
Other	41.3%	38.7%

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**Results**

**Relationship Characteristics at Baseline**

- Length of relationship:
  - 69.1% of couples lived together full-time.
  - 96.0% described each other as 'partner', 'husband' or 'boyfriend'
  - 39.0% of HIV-negative partners had sex outside the relationship.
  - 17.5% of HIV-negative partners had CLAI with outside partners.



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**Results**

**ART and Viral Load**

- HIV-positive partners taking ART:
  - Total: 80%
  - Australia: 90%
  - Brazil: 85%
  - Thailand: 47%
  - OR=0.1, CI=0.04-0.2, p<0.001
- HIV-positive partners with viral load of less than 200 copies per mL:
  - Total: 79%
  - Australia: 87%
  - Brazil: 87%
  - Thailand: 48%
  - OR=0.1, CI=0.1-0.3, p<0.001

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**Results**

**Condomless Anal Intercourse within Couples**

- At baseline, total of 53.2% of HIV-negative partners reported 'any CLAI' with his HIV-positive partner in the previous 3 months.
- Significant differences between countries:

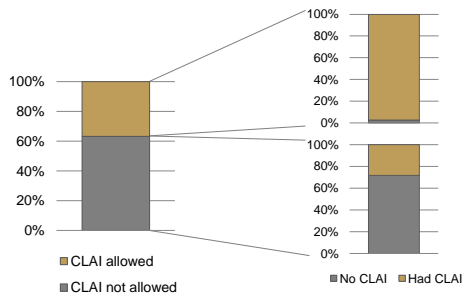
Country	Percent	Odds Ratio	95% CI	p-value
Australia	67.8	Ref.	--	<0.001
Brazil	42.3	0.34	0.19-0.62	
Thailand	29.1	0.19	0.09-0.38	

Proportions were similar during follow-up.

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**Results**

**Agreements about CLAI within Couples**



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**Results**

**Viral Load Communication**

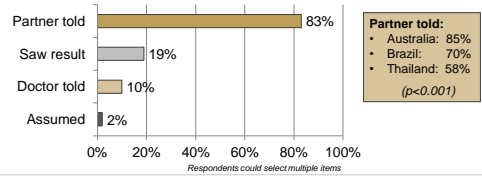
- 14.1% of HIV-negative partners did **not** know their HIV-positive partner's last viral load test result.

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**Results**

**Viral Load Communication**

- 14.1% of HIV-negative partners did **not** know their HIV-positive partner's last viral load test result.
- Of the HIV-negative partners who 'knew' their HIV-positive partner's last viral load result:



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**Results**

**Perceived Viral Load**

	Total	Australia	Brazil	Thailand
Undetectable	61.0%	77.6%	63.4%	14.6%
Detectable	24.9%	17.5%	22.5%	47.3%
Don't Know	14.1%	4.9%	14.1%	38.2%

- HIV-negative partners outside Australia, especially in Thailand, were less likely to know their partner's last viral load test result.

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**Results**

**Accordance with Actual Viral Load**

	<200 copies	>200 copies	No result yet
Undetectable	147	6	11
Detectable	34	26	7
Don't Know	16	21	1

- Over two-thirds (69.2%) were in accordane.

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**Results**

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- 34 (13.6%) perceived it to be detectable when it was under 200 copies.

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**Results**

**Accordance with Actual Viral Load**

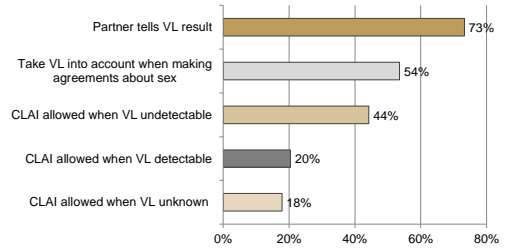
	<200 copies	>200 copies	No result yet
Undetectable	147	6	11
Detectable	34	26	7
Don't Know	16	21	1

- Over two-thirds (69.2%) were in accordance.
- The majority (n=37) of "incorrect" perceptions were due to not knowing the result.
- 34 (13.6%) perceived it to be detectable when it was under 200 copies.
- Few (n=6, 2.4%) believed it to be undetectable when it was actually over 200 copies

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**Results**

**Agreements about Viral Load (VL)**



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**Results**

**Accordance with Practice**

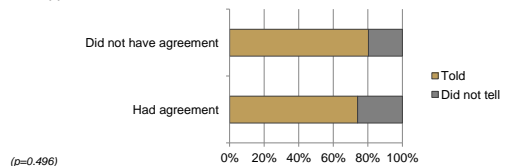
- **73%** of couples had an agreement where the HIV-positive partner would tell the HIV-negative partner the results of each VL test.

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**Results**

**Accordance with Practice**

- **73%** of couples had an agreement where the HIV-positive partner would tell the HIV-negative partner the results of each VL test.
- Having this agreement or not was **not** associated with whether this happened:



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**Results**

**Accordance with Practice**

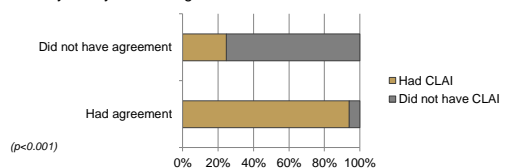
- **44%** had an agreement where they could have CLAI if the HIV-positive partner's VL was **undetectable**.

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**Results**

**Accordance with Practice**

- **44%** had an agreement where they could have CLAI if the HIV-positive partner's VL was **undetectable**.
- Amongst those with undetectable perceived VL, CLAI was more likely if they had this agreement.



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## Results

### Accordance with Practice

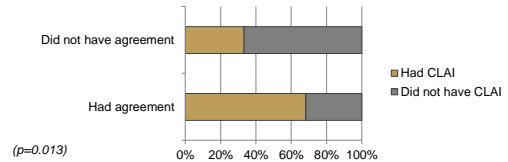
- 20% had an agreement where they could have CLAI if the HIV-positive partner's VL was **detectable**.

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## Results

### Accordance with Practice

- 20% had an agreement where they could have CLAI if the HIV-positive partner's VL was **detectable**.
- Amongst those with detectable perceived VL, CLAI was more likely if they had this agreement.



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## Results

### Communication about Viral Load

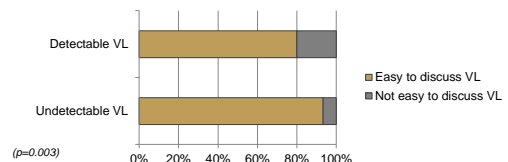
- 87.7% of HIV-negative partners found it easy to discuss viral load with their HIV-positive partners.

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## Results

### Communication about Viral Load

- 87.7% of HIV-negative partners found it easy to discuss viral load with their HIV-positive partners.
- Those who had partners with undetectable viral load found this easier than those whose partners had detectable viral load.



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## Conclusion

- Reducing risk in serodiscordant couples relies on decisions about CLAI in relation to VL, while accurate knowledge of partners' recent VL relies on clear communication within couples.
- Relationship agreements largely reflected practice.
  - A substantial minority had CLAI with each other despite having an agreement not to.
- HIV-negative partners typically discovered viral load results in explicit ways.
  - Being in the study may have influenced this.
- Better understanding of couples who agreed to allow CLAI even when VL was detectable is needed.

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## Acknowledgements

### All Study Participants

**Study Investigators:** Andrew Grulich, Garrett Prestage, Inya Zablotska, Fengyi Jin, David A Cooper, Anthony Kelleher, David Wilson, Kersten Koelsch, Christopher Fairley, Kathy Trittitt, Sean Emery, Beatriz Grzeszczyn, Nittaya Phanuphak

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### All Recruiting Clinicians

**Laboratory:** Kate Merlin, Doris Chibo, Bertha Faadni, Shayla Sharmm, Brooke Berry, Sandro Nazer, Tippawan Pankam, Angie Pinto

**Site Coordinators/Staff:** Colette Cashman, Jess Costa, Sian Edwards, Ruth Khalil Friedman, Shruti Gupta, Peta Hamill, Shane Hewitt, Julia Hoffman, Piranun Hongthookit, Vicki Ieroklis, Helen Kent, Helen Lau, Karen McRae, Siriporn Noneroy, Elizabeth Odgers, Janine Roney, Eyylo Sampaio, Nicky Sharp, Julie Silvers, Rachel Woolstencroft, David Youds

**Community Partners:** ACON, VAC, Positive Life NSW, Living Positive Victoria, HIV/AIDS Legal Centre

**Funders:** National Health and Medical Research Council; Foundation for AIDS Research (amfAR)

**amfAR** Australian Government  
National Health and  
Medical Research Council

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