Characteristics and Rates of Newly Infected HIV-Positive Gay, Bisexual and other Men Who Have Sex With Men (MSM) in Vancouver, British Columbia: Preliminary Findings of the Momentum Health Study

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Background

Gay, bisexual, two-spirit, and other men who have sex with men (MSM) continue to be disproportionately affected within Canada's HIV epidemic, both in terms of people living with HIV and new diagnoses. The Public Health Agency of Canada estimates that nearly half of **incident HIV infections** in 2011 were attributable to MSM (1,560/3,175 new infections): 46.6% for MSM and an additional 2.5% for MSM-IDU.

The Public Health Agency of Canada's estimated 2011 **HIV incident rate** for MSM aged 15 years or over was 0.443 per 100 person-years, which is "71 times higher than the HIV incidence rate for other men in the same age range". There is a paucity of current longitudinal data following HIV-negative MSM in Canada.

Methods

Study Population & Recruitment: The Momentum Health Study employed respondent-driven sampling (RDS) to recruit participants into a longitudinal bio-behavioural cohort study with 6-monthly follow-up visits. Eligibility criteria included being at least 16 years of age, residing in the Metro Vancouver area, identifying as a man, reporting sex with another man in the past 6 months, and being able to complete a questionnaire in English.

Data: At baseline and all follow-up visits, all participants completed a computer-assisted self-interview (CASI) that included socio-demographics, sexual behaviour, substance use, and pyschosocial characteristics as well as a nurse-administered sexual health check-up that included a point-of-care HIV test. Behavioural data were drawn from the most recently completed questionnaire for participants that remained HIV-negative and for seroconverters from the visit prior to their HIV diagnosis.

Outcome: Seroconverters were participants who tested HIV-negative at baseline and HIV-positive at a subsequent study visit or at another testing source between visits.
Statistical Analyses: Comparisons between HIV seroconverters and participants who remained HIV-negative were made using non-parametric statistical tests ($p<0.05$).

Results

Cohort Follow-Up: As of December 7, 2014, 378 MSM who tested HIV-negative at baseline had contributed a mean follow-up time of 1.27 years. These men had completed a range of 2-6 study visits.
Seroconverters: A total of 6 participants seroconverted during the study follow-up period between February 28 2012 and December 7, 2014. **Table 1** demonstrates the demographic and behavioural characteristics of the 6 seroconverters. Although not significantly different when compared with participants who remained HIV negative, all seroconverters identified as gay, 5 of 6 were aged ≤30 years, 5 of 6 identified as Caucasian, and half were born outside of Canada. Behaviourally, 4 of 6 preferred to bottom during anal sex, all 6 reported sex with a casual partner in the past six months, and 4 of 6 reported sex with regular partners. The majority of seroconverters reported engaging in both insertive and receptive anal sex with their casual (5 of 6) and regular partners (3 of 4).

Descriptive statistics for those factors that differed statistically between participants who remained HIV-negative compared with those who seroconverted are shown in **Table 2**. There were no statistically significant differences in the proportion of participants reporting any condomless anal intercourse, socio-demographics, substance use patterns, mental health diagnoses, or other reported prevention / risk reduction practices.
HIV Incidence: The HIV incidence rate was 1.25 per 100 person-years. Given that 5 of 6 seroconverters were aged ≤30 years, the HIV incidence rate for this age group was 2.40 per 100 person-years.

Table 1. Demographic and Behavioural Descriptors of New HIV Seroconverters

	n	%
Age		
≤30 years	5	83.3
>30 years	1	16.7
Sexual Identity		
Gay	6	100.0
Race/Ethnicity		
Caucasian	5	83.3
Other	1	16.7
Born in Canada		
No	3	50.0
Yes	3	50.0
Sexual Position Preference		
Bottom	4	66.7
Versatile/Top	2	33.3
Any Sex with a Casual Partner in the P6M		
No	0	0.0
Yes	6	100.0
Any Sex with a Regular Partner in the P6M		
No	2	33.3
Yes	4	66.7

Table 2. Statistically Significant Behavioural & Risk Differences Between HIV Seroconverters and Participants Who Remained HIV-Negative

	HIV Seroconverters		HIV-Negative Participants		
	Median	**Q1,Q3**	**Median**	**Q1,Q3**	**p-value**
# Sexual Partners in Past 6 Months	15.5	6, 35	4.0	2, 8	0.012
# Anal Sex Events with Sexual Partners in the Past 6 Months	47.5	15, 83	7.0	3, 18	0.016
	n	**%**	**n**	**%**	
Self-Assessed "How likely it is that you will become HIV positive in your lifetime?"					<0.001
Low	3	50.0	503	92.0	
High	3	50.0	44	8.0	
Prevention Strategy Used: "Having sex which doesn't include anal sex"					0.032
No	6	100.0	285	52.1	
Yes	0	0.0	262	47.9	

**P6M = Past 6 Months*

Discussion

Recent HIV seroconverters in our study were more likely to be younger MSM with frequent partner change and greater rates of anal intercourse, but appear to understand that they are at higher risk for HIV acquisition. These findings can help target further HIV prevention programs towards such individuals.

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