THE PERFECT ICE STORM: MIXING METH AND HIV SPREADS HEPATITIS C IN THAI MSM

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Background

- Recent oubreaks of hepatitis C infection (HCV) have been reported among men who have sex with men (MSM) in multiple countries.
- Use of amphetamine-type stimulants (ATS), especially crystal methamphetamine (METH), has been increasing among MSM in Thailand.
- We report on factors associated with baseline HCV prevalence in a study of the use of (ATS) in Bangkok, Thailand.

Methods

- MSM and transgender women (TW) who presented for routine HIV testing at the Thai Red Cross Anonymous Clinic (TRCAC) were recruited into a longitudinal study of ATS use.
- Recruitment was stratified to over-sample participants who had HIV infection or had used ATS within the previous 6 months.
- Baseline assessment included HIV serology, anti-HCV antibody, sexually transmitted infection (STI) screen (syphilis, gonorrhea, chlamydia), and a computer-assisted self interview covering sexual and substance use risk behavior.

Results

- Enrollment included 470 MSM (93.6%) and 32 TW (6.4%), of whom 161 (32%) were HIV-positive.
- 94% reported ever having anal sex, 21% ever had group sex, and 54% of group sex events involved illicit drug use.
- Consistent condom use was 38% for receptive and 41% for insertive anal sex.
- ATS use was reported by 131, most frequently METH (n=122) followed by ecstasy (n=43) and oral amphetamines (n=18).
- HCV prevalence overall was 3.6%, and was associated with ATS use, HIV infection, or both (Figure, P<0.001).
- Over one-third (n=45) of METH users reported injecting the drug intravenously in the previous 6 months. However, a minority (28%) of those with HCV reported injection drug use.
- STIs were common: 16% had syphilis, 16% chlamydia, and 8% gonorrhea.
- On multivariable analysis, factors independently associated with HCV were HIV infection (OR 16.15; 95% CI 3.3-78.99), being mainly the receptive partner in anal sex (OR 4.3, 1.1-16.71), ever using METH (OR 9.13, 3.3-78.99), ever using oral amphetamine (OR 9.48, 1.63-55.03), and any history of STI in the previous 6 months (OR 5.98, 1.54-23.2).

Conclusions

- HCV infection is spreading rapidly among MSM with HIV in Bangkok, and is closely associated with the use of METH.
- Injection use of METH is also increasing in Thai MSM. Most cases of HCV appear to be transmitted by anal sex, possibly potentiated by the presence of STIs and rough or prolonged sex in the context of illicit drug use.
- Harm reduction, and HCV treatment with direct-acting antivirals, are needed to address this newly emerging epidemic.

There is a high prevalence of HCV among MSM in Bangkok, closely associated with HIV infection and the use of crystal methamphetamine.

Table 1 Demographic and behavioral characteristics of MSM in Bangkok, Thailand

	Overall (N=502)	HCV-negative (n = 484)	HCV-positive (n=18)	P-value
Age Median (IQR)	28(24-35)	28(24-45)	36(28-43)	0.004[a]
Education (n(%))				0.18[b]
Lower than bachelor's degree	155 (30.9%)	152 (31.4%)	3 (16.7%)	
Bachelor's degree or higher	347 (69.1%)	332 (68.6%)	15 (83.3%)	
Employment (n(%))				0.61[c]
Working	389 (77.5%)	375 (77.5%)	14 (77.8%)	
Studying	74 (14.7%)	72 (14.9%)	2 (11.1%)	
Working and studying	12 (2.4%)	12 (2.5%)	0 (0%)	
Unemployed	27 (5.4%)	25 (5.2%)	2 (11.1%)	
HIV status (n=502)				<0.001[b]
Negative	341 (67.9%)	339 (70%)	2 (11.1%)	
Positive	161 (32.1%)	145 (30%)	16 (88.9%)	
Anal intercourse (n(%)) (n=502)				1.00[c]
Number of responses	502	484	18	
No	19 (3.8%)	19 (3.9%)	0 (0%)	
Yes	472 (94%)	454 (93.8%)	18 (100%)	
Missing	11 (2.2%)	11 (2.3%)	0 (0%)	
Identifying as top/bottom (n(%))(n=472)				0.21[c]
More top than bottom	171 (36.2%)	168 (37.0%)	3 (16.7%)	
Top and bottom equal	66 (14%)	65 (14.3%)	1 (5.6%)	
More bottom than top	230 (48.7%)	218 (48.0%)	12 (66.7%)	
Substance use history				
Alcohol abuse classification (based on AUDIT-C scores) (n(%))	132 (26.3%)	129 (26.7%)	3 (16.7%)	0.58[c]
Ever used ecstasy (n(%)) (n=502)	43 (8.6%)	40 (8.3%)	3 (16.7%)	0.20[c]
Ever used crystal meth (n(%)) (n=502)	122 (24.3%)	110 (22.7%)	12 (66.7%)	<0.001[c]
Injected crystal meth in the past 6 months (n(%)) (n=122)	45 (36.9%)	40 (36.4%)	5 (41.7%)	0.49[c]
Ever used oral amphetamines (n(%)) (n=502)	18 (3.6%)	15 (3.1%)	3 (16.7%)	0.023[c]
Ever used any ATS substances	131 (26.1%)	118 (24.4%)	13 (72.2%)	<0.001[c]
Sexual Transmission Infection History				
Sexual Transmission Infection in the past 6 months (n(%))(n=502)				
Syphilis	81 (16.1%)	70 (14.5%)	11 (61.1%)	<0.001[c]
Neisseria gonorrhea	41 (8.2%)	40 (8.3%)	1 (5.6%)	1.00[c]
Chlamydia trachomatis	78 (15.5%)	72 (14.9%)	6 (33.3%)	0.046[c]

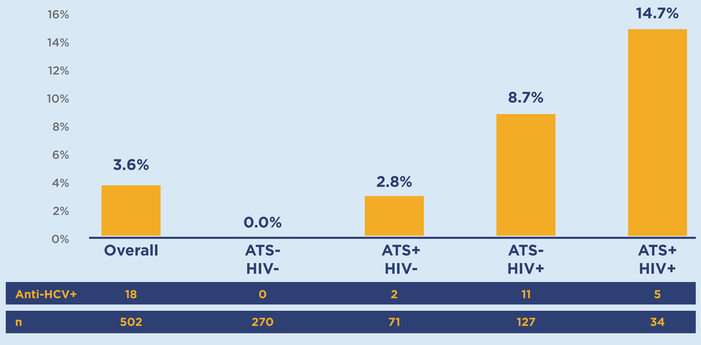
[a] P-value for comparison of median of characteristics between group (Wilcoxon-Mann Whitney)
[b] P-value for comparison of proportion of characteristics between group (Chi-square test)
[c] P-value for comparison of proportion of characteristics between group (Fisher's Exact test)

Table 2 Univariable and multivariable analysis of factors associated with HCV prevalence (N=502)

Factors	Univariate Analysis		Multivariate Analysis	
	95%CI	P-value	95%CI	P-value
Age				
<30 years	ref			
30-40 years	2.3(0.70-7.78)	0.19		
≥40 years	5.56 (1.71-18.05)	<0.004		
HIV status				
Negative	ref		ref	
Positive	18.7 (4.25-82.39)	<0.001	16.15 (3.3-78.99)	0.001
Identifying as top/bottom				
More top or equal	ref			
More or only bottom	3.21 (1.02-10.09)	0.05	4.3 (1.1-16.71)	0.036
Partner using a condom as the participant being the bottom in the past 6 months				
Always	ref		3 (16.7%)	
Sometimes	0.32 (0.08-1.26)	0.103	1 (5.6%)	
Never	3.99 (1.25-12.75)	0.02	12 (66.7%)	
Ever used METH				
No	ref		ref	
Yes	6.69 (2.45-18.24)	<0.001	9.13 (2.63-31.75)	0.001
Injected METH in the past 6 months				
No	ref			
Yes	1.79 (0.4-7.99)	0.44		
Ever used oral amphetamines				
No	ref		ref	
Yes	6.2 (1.62-23.73)	0.008	9.48 (1.63-55.03)	0.012
Sexual Transmission Infection in the past 6 months				
Syphilis (reactive)	9.29 (3.48-24.79)	<0.001		
Neisseria gonorrhea	0.65 (0.08-5.03)	0.68		
Chlamydia trachomatis	2.86 (1.04-7.87)	0.04		
Any STIs	6.32 (2.21-18.07)	0.001	5.98 (1.54-23.2)	0.01

Figure 1

Anti-HCV prevalence by ATS use and HIV status (p<0.001)



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