

Trichomonas Vaginalis Infection in a Probability Sample of Baltimore, USA Adolescents and Young Adults

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BACKGROUND: Trichomonas Vaginalis (TV)

- *T. vaginalis* (TV) is the most common curable sexually transmitted infection (STI) in the U.S. and is associated with pelvic inflammatory disease, low birth weight, preterm delivery, and increased susceptibility to HIV.
- TV is not a reportable disease in the U.S.; the local epidemiology of TV is largely unknown
- Widespread monitoring is needed for the development of effective strategies for TV infection prevention and control.

MONITORING STIs SURVEY PROGRAM (MSSP) 2006–09

- The MSSP monitors the prevalence of three STIs (chlamydia, trichomoniasis, gonorrhea) in the single urban community of Baltimore USA.
- The target population is a probability sample of English-speaking young adults between 15–35 years of age residing in households with landline telephones
- Respondents complete a private telephone computer assisted self interview (T-ACASI) and provide a mailed-in urine specimen for STI testing.

OBJECTIVES

- Report population estimates of TV prevalence, using data from the first year of the MSSP (2006-2007).
- Identify correlates of TV-associated risk behavior.

METHODS – Laboratory

- TV was detected in urine by transcription-mediated amplification (TMA) using analyte-specific reagents (ASR).
- TV infection defined as a repeatedly positive test result.

METHODS – Statistical

- Survey weights were created to account for differing probabilities of selection and nonresponse (survey and specimen).
- Weighted estimates of TV prevalence, overall and for population subgroups, were calculated.
- Prevalence ratios (PR) estimated using Poisson regression.
- Sensitivity analysis for missing specimens.

RESULTS

- Interviews completed with 1,248 (57% eligibles)
- 863 provided specimens suitable for testing

Table 1: Population Prevalence of TV Infection

	<i>T. vaginalis</i> prevalence	PR	95% CI	P-value
Overall	6.2%	n/a		
Female	10.1%	5.1	(2.0, 13.0)	0.001
Male	2.0%	Ref		
Black*	9.3%	6.1	(2.2, 16.9)	<0.001
Non-Black	1.5%	Ref		
< HS	8.5%	2.8	(1.4, 5.8)	0.004
High school	9.2%	3.1	(1.5, 6.4)	0.003
>HS	3.0%	Ref		
15-17	3.8%	0.8	(0.3, 2.5)	0.7
18-21	6.1%	1.3	(0.5, 3.0)	0.6
22-29	8.4%	1.8	(0.8, 3.7)	0.1
30-35	4.8%	Ref		

*Note: Non-Hispanic Blacks

- Estimated prevalence of TV was 6.2% among Baltimore residents aged 15-35 years.
- MSSP revealed a high prevalence of TV among youth and young adults:
 - One in 10 women tested positive for TV
 - Nearly 1 in 7 (14.2%) Black females has a prevalent TV infection (Figure 1)
- The majority (76%) of confirmed infections were asymptomatic, with no reported discharge or dysuria in the preceding three months.
- Sensitivity analyses suggest minimal impact of missing specimens on prevalence estimates (imputed probability of TV = 6.23).

Figure 1: Estimated Prevalence of TV Infection by Race and Gender

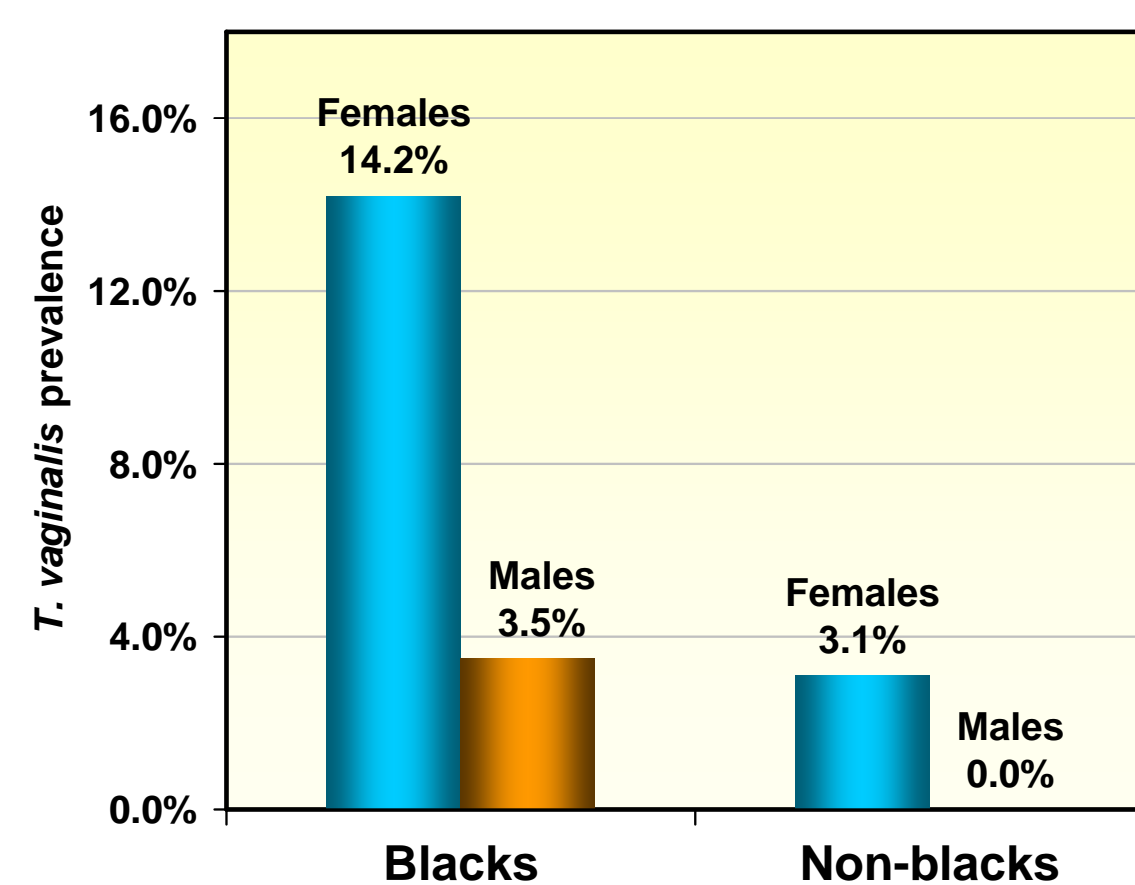


Table 2a: Correlates of Tv infection – Sexual Behaviors

		Tv prevalence	PR	95% CI	P
Lifetime partners both males and females	Yes	13.3%	2.3	(1.1, 5.0)	0.03
	No	5.7%	Ref		
2+ partners last year	Yes	11.3%	3.3	(1.8, 6.1)	<0.001
	No	3.4%	Ref		
New partner past 3 months	Yes	10.6%	2.1	(1.1, 3.8)	0.02
	No	5.2%	Ref		
DK if partner had STI past year	Yes	14.4%	2.5	(1.2, 5.3)	0.02
	No	5.7%	Ref		
Ever forced to have sex	Yes	15.1%	2.9	(1.6, 5.3)	0.001
	No	5.2%	Ref		
Self/partner ever incarcerated	Yes	10.4%	2.5	(1.4, 4.6)	0.002
	No	4.1%	Ref		

Table 2b: Correlates of TV infection – Health Outcomes

		Tv prevalence	PR	95% CI	P
Previous STI	Yes	13.7%	3.4	(1.9, 6.1)	<0.001
	No	4.0%	Ref		
Previous Tv infection	Yes	20.6%	4.3	(2.3, 7.9)	<0.001
	No	4.8%	Ref		
Current chlamydial infection	Yes	16.7%	2.9	(1.3, 6.8)	0.01
	No	5.7%	Ref		
Symptoms in past 3 months	Yes	13.1%	~		
	No	5.3%			
MD/clinic visit in past 3 months	Yes	8.2%	2.1	(1.1, 4.1)	0.03
	No	3.9%	Ref		
Antibiotic use in past month	Yes	11.1%	2.0	(1.0, 3.8)	0.04
	No	5.6%	Ref		

* No TV+ males reported symptoms in the past 3 months.

- Many behavior factors were associated with increased risk of infection in bivariable analyses, including: 2+ partners in the past year, a new partner in the past 3 months, not knowing if a partner had an STI in the past year, ever forced to have sex, and history of incarceration.
- Other correlates of TV included: prior TV infection, current chlamydial infection, a clinic or doctor's visit in the past 3 months, and recent antibiotic use.

CONCLUSIONS

- *T. vaginalis* infection is common among Baltimore youth and young adults, especially among Black females (14.2%).
- The first year of the MSSP supports routine screening for TV in populations at elevated risk of infection.
- The MSSP demonstrates a new approach to public health surveillance and monitoring the prevalence of undetected infections in the general population.