Prevalence, predictors and outcomes of Mycoplasma genitalium in HIV-infected and –uninfected pregnant women in Cape Town, South Africa

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INTRODUCTION

- Sexually transmitted infections (STIs) increase the risk of HIV acquisition and transmission.
- *Mycoplasma genitalium* (MG) is an emerging sexually transmitted organism associated with cervicitis and pelvic inflammatory disease.
- Little is known about the prevalence and outcomes of MG in pregnant women.
- Our study evaluates the prevalence, incidence and predictors of MG infection in HIV-infected and –uninfected pregnant women.

METHODS

- Longitudinal study of 198 women ≥18 years receiving antenatal care in Cape Town, South Africa from 2018-2019.
- Self-collected vaginal swabs from 3 timepoints were tested for *Chlamydia trachomatis* (CT), *Neisseria gonorrhoea* (NG) and *Trichomonas vaginalis* (TV) using Xpert® assays (Cepheid, USA) and MG using an Aptima® assay (Hologic, USA).
- We report on prevalence and incidence of MG and used multivariable logistic regression to describe predictors of MG and adverse pregnancy outcomes.

RESULTS

- Cumulative prevalence of MG was 19% (n=38): 25% in HIV-infected women vs. 13% in HIV-uninfected women (p=0.034).
- Incidence of MG during pregnancy was 9% per 100 women-years.
- Adjusting for maternal and gestational age, HIV status, STI co-infection and vaginal bleeding were strong predictors of MG (aOR 3.11 (95% CI 1.40-6.93), aOR 2.47 (95% CI 1.10-5.12), aOR 8.46 (95% CI 1.29-55.32), respectively.

High prevalence of ***Mycoplasma genitalium*** in **HIV-infected pregnant women** in Cape Town, South Africa.

Table 1: Participant characteristics at baseline

Characteristics	Total	
	n	%
Total	198	
Age		
Maternal (median, IQR)	29	24-34
Gestational, weeks (median, IQR)	19	14-23
Sexual behavior during pregnancy		
Vaginal sex	182	92
Anal sex	5	2.5
Oral sex	6	3
2+ sex partners	2	1
Suspect partner has other partners	64	32
Clinical characteristics		
STI positive (any)	66	33
Chlamydia trachomatis	41	21
Neisseria gonorrhea	13	6.6
Trichomonas vaginalis	30	15
STI symptoms*	26	13
HIV positive	92	46
MG positive	35	18
Couple's serostatus		
Concordant HIV negative	71	36
Concordant HIV positive	28	14
Discordant	22	11
Don't know	77	39

IQR = interquartile rance
*vaginal discharge, pain with intercourse, pain with urination, vaginal bleeding, genital sores

Table 2: Factors associated with MG infection

Factors	OR (95% CI)	p-value	Adjusted OR (95% CI)*	p-value
Age				
Maternal	0.97 (0.91-1.02)	0.241		
Gestational, weeks	1.02 (0.97-1.09)	0.412		
Sexual behavior during pregnancy				
Vaginal sex	1.03 (0.28-3.82)	0.963		
2+ sex partners	4.29 (0.26-70.30)	0.307		
Suspect partner has other partners	0.90 (0.41-1.99)	0.796		
Clinical characteristics				
STI positive (any)	2.59 (1.26-5.33)	0.01	2.47 (1.19-5.12)	**0.015**
TV	2.50 (1.06-5.92)	0.037	2.52 (1.06-6.04)	**0.037**
STI symptoms (any)	1.02 (0.45-2.27)	0.968		
Vaginal bleeding	6.77 (1.09-42.06)	0.04	8.46 (1.29-55.32)	**0.026**
HIV positive	2.32 (1.12-4.81)	0.024	3.11 (1.40-6.93)	**0.005**
Couple's serostatus				
Concordant HIV negative	Reference			
Concordant HIV positive	1.66 (0.54-5.12)	0.375		
Discordant	1.36 (0.38-4.84)	0.64		
Don't know	1.86 (0.79-4.36)	0.153		

OR = odds ratio
*Adjusted for maternal age and gestational age

Table 3: Clearance and persistence of MG

	Cleared (%)	Persisted (%)	OR (95% CI)	p-value	Adjusted OR (95% CI)*	p-value
STI-positive (any)**	9 (64%)	6 (33%)	3.6 (0.83-15.63)	0.087	6.92 (1.07-44.86)	**0.043**
STI-negative	5 (36%)	12 (66%)				

*Adjusted for maternal age and gestational age
**CT, NG and/or TV

DISCUSSION

- This study is one of the first to report on prevalence and incidence of MG in pregnant women.
- Our results suggest that there is a high prevalence of MG in pregnant women in South Africa.
- Maternal HIV and STI co-infection, specifically TV, are strong predictors of MG.
- Symptomatic women with MG are more likely to report vaginal bleeding, suggesting current cervicitis.
- Further research into the epidemiological determinants and reproductive sequela of MG in pregnant women is needed.

Ethical approval and oversight were provided by the Faculty of Health Sciences Human Research Ethics Committee at the University of Cape Town (#454/2017) and University of California Los Angeles (#19-000237). Written informed consent was obtained from all participants before enrolment.