Chlamydia trachomatis and *Neisseria gonorrhoeae:* prevalence and factors associated among women with HIV in São Paulo, Brazil

Authors: Valdir Monteiro Pinto[1],[2], Zarifa Khoury[1], Roberto Jose de Carvalho da Silva[2] and Mariza Vono Tancredi[2].
[1] Municipal Program of STD/AIDS, Municipal Health Secretariat, São Paulo, Brasil.
[2] State Program of STD/AIDS, Reference and Training Center of STD/AIDS, State Health Secretariat, São Paulo, Brasil.

Background: Our goal was to estimate the prevalences of and risk factors for Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (NG) among women with HIV.

Methods: Cross-sectional study of women with HIV, who were receiving care from sixteen public health services in São Paulo (October 2013 to March 2014). Participants answered a questionnaire including demographic, behavioral, and clinical data. An urine sample was tested for CT and NG, using PCR. The chi-square test and a logistic regression model were used to test the associations with CT or NG infections.

Results: 836 women were included. The mean age was 40.5±0.34 years, and the prevalences of CT and NG infections were 1.8% and 0.5%, respectively. The highest prevalences of CT infection were among who were 18-25 yo (15.9%), had black skin color (2.6%), had >2 sexual partners during the last year (7.3%), had a partner who had been imprisoned (3.3%), and not used condoms during the last 6 months (4%). According to clinical characteristics, the highest prevalences were among who had a spontaneous abortion (3.5%), prior STD (3.7%), had been diagnosed with HIV infection during the last year (4.8%), had a CD4+ <350 cells/mm3 (4.8%), had atypical squamous cells/glandular cells of undetermined significance in their last Pap smear (11.1%), and had positive NG test results (25%). CT infection was associated with CD4+ <350 cells/mm3 [adjusted odds ratio (ORadj): 24.5], age of 18-25 years (ORadj: 23.2), the non-use of condoms during the last 6 months (ORadj: 10.2), prior STI (ORadj: 9.4), and having >2 sexual partners during last year (ORadj: 6.1).

Conclusions: Although we observed a low prevalence of CT infection among women with HIV, younger age was associated with a strong risk of infection. Therefore, it may be appropriate to include screening for CT as part of the routine care for this population.

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Author contact: vmpinto@prefeitura.sp.gov.br

Table 1 - Sociodemographic characteristics of women living with HIV and *C. trachomatis*. São Paulo, 2013-2014.

Population characteristics	CT infection (n)	Total (n)	Prevalence (%)	X^2	p*
Age (yr)				52.8	< 0,001
18-25	7	44	15.9		
26-39	3	346	0.9		
40-49	4	298	1.3		
≥50	1	148	0.7		
Total					
Schooling (yr)					
None	-	8	-	7.9	0.096
1-8	5	374	1.3		
9-11	10	293	3.4		
≥12	-	152	-		
Unknown	-	9	-		
Total					
Skin colour (self-referred)				1.1	0.892
White	5	309	1.6		
Black	4	152	2.6		
Brown	6	351	1.7		
Others (yellow/indigenous)		9	0.0		
Unknown	-	15	-		
Monthly income (US$)				2.1	0.545
<413.00	7	321	2.2		
413.00-2,480.00	7	483	1.4		
2,481.00-4,132.00	0	13	0.0		
Unknown	1	19	5.3		
Total					
Marital status					
Single	6	287	2.1	3.2	0.528
Married or living together	5	432	1.2		
Divorced	2	51	3.9		
Widow	2	63	3.2		
Unknown	0	3	0.0		
Total	15	836			

*Pearson Chi²

Table 2 - Bivariate and Multivariate analysis of the factors associated with Chlamydia trachomatis in women living with HIV. São Paulo, 2013-2014.

Variables	N Total	CT infection Nº	CT infection %	OR_{cr}	95% CI (OR_{cr})	OR_{adj}	95% CI (OR_{adj})	p
Age (yr)								
≥ 50	148	1	0.7	1	-	1	-	-
40-49	298	4	1.3	2.0	0.2-18.1	1.4	0.1-14.1	0.779
26-39	346	3	0.9	1.3	0.1-12.5	0.5	0.04-6.6	0.618
18-25	44	7	15.9	27.8	3.3-23.1	23.2	2.2-24.7	0.009
Nº partners/year								
1	740	8	1.1	1	-	1	-	-
≥2	96	7	7.3	7.2	2.5-20.3	6.1	1,5-23.8	0.010
Condom use (last 6 months)								
Yes	493	2	0.4	1	-	1	-	-
No	329	13	4.0	10.1	2.3-45.0	10.2	1.8-56.0	0.008
History of STI								
No	531	4	0.8	1	-	1	-	-
Yes	301	11	3.7	5.0	1.6-15.8	9.4	2.0-44.1	0.005
CD4+ count (cells/mm3)								
> 500	486	2	0.4	1	-	1	-	-
350-500	149	3	2.0	5.0	0.8-30.1	9.2	1.1-78.9	0.043
< 350	188	9	4.8	12.2	2.6-57.0	24.5	3.4-178.0	0.002
Viral load								
<50	525	2	0.4	1	-	-	-	-
50-1000	76	2	2.6	7.1	0.9-51.0	-	-	-
> 1000	221	10	4.5	12.4	2.7-57.1	-	-	-
Unknown	14	1	7.1	20.1	1.7-236.1	-	-	-
Gonorrhoea test								
Negative	832	14	1.7	1	-	-	-	-
Positive	4	1	25.0	19.5	1.9-198.9	-	-	-

OR_{cr}: Crude odds ratio ; OR_{adj}: Adjusted odds ratio; 95% CI: Confidence interval

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