

Prevalence and risk factors for HIV, syphilis, hepatitis B, hepatitis C, and HTLV-I/II infection in low-income postpartum and pregnant women in Greater Metropolitan Vitória, Espírito Santo State, Brazil

Prevalência e fatores de risco para a infecção por HIV, sífilis, hepatite B, hepatite C e HTLV-I/II em parturientes e gestantes de baixa renda atendidas na Região Metropolitana de Vitória, Espírito Santo, Brasil

Lucia Helena Mello de Lima ¹
Maria Carmen Viana ²

¹ Unidade de Referência Ambulatorial para DST/AIDS, Serra, Brasil.

² Escola de Medicina da Santa Casa de Misericórdia de Vitória, Vitória, Brasil.

Correspondence

L. H. M. Lima
Unidade de Referência Ambulatorial para DST/AIDS, Rua Amélia Tartuce Nasser 1055, apto. 201, Vitória, ES 29065-020, Brasil.
luciahmlima@terra.com.br

Abstract

Sexually transmitted infections during pregnancy pose a major risk to the fetus due to vertical transmission. The study's objective was to determine the prevalence of HIV, syphilis, hepatitis B and C, and HTLV-I/II infection among low-income postpartum and pregnant women treated in Greater Metropolitan Vitória, Espírito Santo State, Brazil, and the risk factors associated with these infections. A cross-sectional study was conducted from February to October 1999 assessing postpartum and pregnant women from the maternity ward of the Vitória Mercy Hospital and the Carapina Outpatient Referral Unit in the Municipality of Serra, respectively. Patients were systematically interviewed and had blood samples drawn for serological tests (HIV 1&2, VDRL, HbsAg, anti-HCV, and HTLV-I/II). A total of 534 patients (332 postpartum and 202 pregnant women) were assessed. Seroprevalence rates for the target infections in postpartum and pregnant women and the overall sample were as follows, respectively: HIV 0.9%, 0%, and 0.6%; syphilis 2.1%, 3.6%, and 2.7%; HBV 1.2%, 1%, and 1.1%; HCV 1.8%, 0.6%, and 1.4%; and HTLV-I/II 1.7%, 0.6%, and 1.3%. Factors associated with the various infections are presented and analyzed in light of other research findings from the literature.

Sexually Transmitted Diseases; Pregnancy; Vertical Transmission Disease

Introduction

Sexually transmitted diseases (STDs) and their complications are among the five main causes involved in the use of health services in developing countries ¹. The high incidence of such infections in women using prenatal services and gynecology and family planning clinics is an indicator of the problem's importance. Women are more vulnerable than men to STDs, in both biological and cultural and socioeconomic terms. Most STDs are asymptomatic in women, and their consequences can be serious, sometimes even fatal, both for themselves and their offspring ². Knowledge of STD prevalence in pregnant women in a given region is necessary for implementing prevention and intervention aimed at containing the spread of the diseases and their vertical (mother-to-child) transmission.

In Brazil, HIV infection has evolved at a rapid pace among women, posing a serious public health problem. The highest percentage of cases is in the 25-34-year bracket, in the prime of childbearing age. One direct consequence of the increased female presence in the AIDS epidemic is the progressive increase in vertical transmission ³. Syphilis in adults and neonates is still a public health problem in Brazil and elsewhere in the world. Although pregnancy does not alter the clinical course of syphilis, early diagnosis during prenatal care is essential to prevent congenital infection and administer adequate treatment to

the mother⁴. Although hepatitis B (HBV) infection can be prevented by vaccination, it remains endemic in various regions of the world, with areas of low (< 2%), medium (2-7%), and high prevalence (> 7%)⁵. Vertical HBV transmission is the main form of acquiring the infection in regions with high prevalence, where more than 90% of infected children become persistent carriers of the virus and can present late chronic liver disease⁶. Hepatitis C (HCV) prevalence in pregnant women has been extensively investigated in various parts of the world through HCV testing, varying from 0.7 to 4.4%, with 1 to 2% in pregnant women in Europe, Japan, and the United States⁷. HTLV is endemic in various regions of Japan, Africa, Australia, Alaska, South America, and the Caribbean islands⁸. In Brazil, the prevalence varies and is highest in the States of Bahia, Pernambuco, and Pará⁹.

Since there is limited information on STD prevalence in pregnant women in Brazil and specifically in the State of Espírito Santo, the current study aimed to evaluate the prevalence of HIV, *Treponema pallidum*, HBV, HCV, and HTLV-I/II infections in low-income pregnant and postpartum women in Greater Metropolitan Vitória (the State capital of Espírito Santo) and identify factors associated with these infections. A further objective was to identify possible risk factors associated with these infections and detect potential differences between women giving birth at public maternity hospitals and those seeking prenatal care.

Methods

A cross-sectional study was performed from February to September 1999, evaluating postpartum and pregnant women treated, respectively, at the maternity ward in the teaching department of the Vitória Mercy Hospital (Santa Casa de Misericórdia) and the Carapina Outpatient Referral Unit, with a service specializing in STD/AIDS, the latter located in the Municipality (county) of Serra, Espírito Santo State. During this period, all postpartum women who had been admitted for childbirth in the obstetrics ward of the Mercy Hospital in Vitória were invited to participate, and the following day they answered a standardized semi-structured interview exploring socio-demographic data, information on sexual activity, use of psychoactive substances, behavior, lifestyle, and domestic and sexual violence, besides clinical and obstetric data and information on possible risk behaviors by their current and previous sex partners. After the interview, a blood sample was drawn to test for HIV, *T. pallidum*,

HBV, HCV, and HTLV-I/II infection. During the same period, and following the same procedures, we evaluated all the pregnant women who came to the Carapina Outpatient Referral Unit for HIV testing as part of their prenatal care and received pre-test counseling.

HIV infection was detected using ELISA, and positive or indeterminate cases were confirmed by indirect immunofluorescence (IIF) using kits provided by the Oswaldo Cruz Foundation. Syphilis testing used VDRL (Laborclin, Pinhais, Brazil). HbsAg (hepatitis B surface antigen) was detected using AXSYM (Abbott Laboratories, São Paulo, Brazil), a third-generation microparticle enzyme immunoassay (MEIA). Presence of hepatitis C antibody was investigated with AXSYM-ABBOTT. HTLV-I/II antibodies were detected using the ABBOTT HTLV 1/HTLV 2 EIA kits.

The sample size was calculated as a function of the lowest estimated prevalence of the infections in the target population, namely HIV infection (from 1 to 2 %).

All the information collected was coded and stored in a databank using SPSS-Data Entry (SPSS Inc., Chicago, USA).

The groups were characterized according to the target variables using descriptive statistical analysis methods. Prevalence of the respective infections was defined as the percentage of positive cases for each serology, and the standard error and 95% confidence interval (95%CI) were calculated for each prevalence rate. Associations between HIV, syphilis, HBV, HCV, and HTLV infection and possible risk factors (socio-demographic, sexual, behavioral, and clinical) were tested with the chi-square test with Yates continuity correction. The magnitude of associations was assessed using odds ratios (OR), with respective 95%CI, and logistic regression models were used to control for socio-demographic variables. In all the analyses the tests were considered two-tailed, and p was set at 0.05.

Participation was voluntary, with written consent provided by the postpartum or pregnant woman. The study was approved by the Institutional Review Board of the School of Sciences, Mercy Hospital (Santa Casa de Misericórdia), Vitória. The diseases that were identified and that had available treatment were treated after identification and communication of the diagnosis, and the viral infections were referred for specific follow-up.

Results

A total of 534 patients participated in the study: 332 postpartum women who had been admit-

ted for childbirth at the Mercy Hospital maternity ward in Vitória and 202 pregnant women receiving prenatal care at the Carapina Outpatient Referral Unit in the Municipality of Serra, with 100% response rates in both groups. The institutions treat low-income patients from the general population that live in Greater Metropolitan Vitória and receive care through the Unified National Health System (SUS).

In relation to socio-demographic data (Table 1), there were no significant differences between the groups except in relation to the woman's home municipality (county), as a function of location of the two services, and the proportion of black women, which was higher in the postpartum group. Both groups had low family income and high dropout rates before completing primary school. Lower schooling was associated with teenage pregnancy: only 17.5% of women who became pregnant before their 19th birthday continued studying beyond primary school, as compared to 33.2% of those who became pregnant later ($\chi^2 = 15.3$; $p = 0.000$).

Table 2 shows the prevalence rates for each infection, as well as the overall prevalence. There was no statistically significant difference between the groups.

Overall, the postpartum women presented more health problems than the group of pregnant women (Table 3). As for childbearing history, the first pregnancy occurred at a quite early age, on average 19.6 years (standard deviation – SD = 4.5), with no significant difference between the two groups. There was a frequent history of abortion, both spontaneous (miscarriage) and induced, and abortion was more frequent in the postpartum group (OR = 2.6; 95%CI: 1.64-4.18), who showed much higher rates than those reported in the literature for this population (around 15%). History of STDs was similar to that in low-risk women in developing countries (6-8%) and was higher in the postpartum group (OR = 2.5; 95%CI: 1.02-6.83). Among the STDs reported by patients, genital warts, syphilis, and gonorrhea were the most frequent, although such information can be imprecise, subject to recall bias and depending on the diseases having been diagnosed.

Table 4 shows the variables associated with the various infections, showing possible risk or predictive factors, as well as the odds ratios resulting from bivariate analysis and after controlling for age, schooling, and ethnicity in logistic regression models. Considering the presence of any of the sexually transmitted infections (N = 35; Table 2), predictive factors for infection were low schooling ($\leq 4^{\text{th}}$ grade, OR = 2.7; 95%CI: 1.24-5.74), multiple sex partners (> 3 partners, OR =

2.7; 95%CI: 1.13-5.97), and early age at sexual initiation (≤ 15 years, OR = 2.9; 95%CI: 1.35-6.25).

Discussion

The two groups appear to represent the population of low-income pregnant women treated at public health services at different moments in relation to pregnancy. No socio-demographic, lifestyle, or behavioral differences were detected between the groups. The main difference, and one of the targets of comparison in this study, is that the postpartum sample was representative of a population that had sought urgent treatment (i.e., for childbirth), while the other group consisted of pregnant women participating actively in a prenatal care program. This difference may represent greater attention to health care in general, as corroborated by the clinical differences shown in Table 3. However, there were no significant differences between the groups in the prevalence rates for the infections investigated in this study. Thus, our findings can be generalized to this target population, namely that of low-income pregnant women treated in the SUS, taking these differential characteristics into account. The sample size was calculated to obtain estimated prevalence rates for the respective infections and compare the groups; however, it proved insufficient to demonstrate a statistical association between these infections and the majority of the independent variables, in the attempt to identify possible risk or predictive factors for the infections. However, considering the total sample and the overall prevalence, we identified important factors that increased the likelihood of infection: low schooling, early sexual initiation, and multiple sex partners.

Prevalence studies in pregnant women are particularly useful, since they provide estimates that can be extrapolated to the general population of sexually active women, since by definition the population of pregnant women does not include situations involving special risk, as in the case of women treated at STD or emergency clinics¹⁰. The most common STDs affect 6 to 8% of low-risk women seen at prenatal clinics in developing countries¹¹. In this study, 6.5% of the patients presented any current STD.

Although testing and prophylactic medication are available in Brazil, children continue to become infected through vertical transmission. As a result of factors like low adherence to prenatal care and/or late uptake, many women reach the maternity departments without adequate prenatal follow-up; in addition, overall prenatal HIV screening coverage is well below 40%, and is

Table 1

Socio-demographic data from a sample of low-income postpartum and pregnant women in Greater Metropolitan Vitória, Espírito Santo State, Brazil.

	Postpartum (N = 332)		Pregnant (N = 202)		Total (N = 534)	
	n	%	n	%	n	%
Age (years)						
≤ 15	10	3.0	8	4.0	18	3.4
16-25	183	54.9	127	62.6	310	57.9
26-35	97	29.4	51	25.4	148	27.7
36-45	34	10.2	13	6.5	47	8.8
NR	8	2.4	3	1.5	11	2.1
Age: mean (SD)	25.3 (6.8)		23.9 (6.0)		24.8 (6.5)	
Range	13-44		12-41		12-44	
Marital status						
Single	51	15.4	28	13.9	79	14.8
Married/Common law	266	80.1	159	78.7	425	79.6
Separated/Divorced	7	2.1	5	2.5	12	2.2
Widow	-	-	1	0.5	1	0.2
NR	8	2.4	9	4.5	17	3.2
Skin color/Race						
White	123	37.0	119	58.9	242	45.3
Brown	124	37.3	71	35.1	195	36.5
Black	60	20.8	5	2.5	74	13.9
Asian	3	0.9	-	-	3	0.6
NR	13	3.9	7	3.5	20	3.7
Schooling (years)						
Illiterate	12	3.6	4	2.0	16	3.0
1-4	94	28.2	51	25.4	145	27.2
5-8	147	44.3	85	42.1	232	43.5
9-11	69	20.7	46	22.8	115	21.5
≥12	2	0.6	4	2.0	6	1.1
NR	8	2.4	12	5.9	20	3.7
Mean (SD)	6.1 (3.0)		6.5 (3.1)		6.3 (3.0)	
Range	0-12		0-12		0-12	
Family income (times minimum wage)						
0	9	2.7	3	1.5	12	2.2
≤ 2	137	41.3	92	45.5	229	42.9
2.1-4	105	31.6	79	39.1	184	34.5
4.1-7	55	16.6	20	9.9	75	14.0
> 7	18	5.4	1	0.5	19	3.6
NR	8	2.4	7	3.5	15	2.8
Mean (SD)	1.84 (1.04)		1.61 (0.71)		1.75 (0.94)	
Home Municipality						
Vitória	71	21.4	1	0.5	72	13.5
Vila Velha	61	18.4	0	0.0	61	11.4
Cariacica	115	34.6	0	0.0	115	21.5
Serra	45	13.6	190	94.1	235	44.0
Other	32	9.6	0	0.0	32	6.0
NR	8	2.4	11	5.4	19	3.6

NR = not reported; SD = standard deviation.

Table 2

Prevalence of each sexually transmitted infection (with standard deviation – SD and 95% confidence interval – 95%CI) and overall STD prevalence in low-income postpartum and pregnant women in Greater Metropolitan Vitória, Espírito Santo State, Brazil.

	Postpartum (N = 332)	Pregnant (N = 202)	Total (N = 534)
HIV ELISA (positive/total performed)	3/329	0/196	3/525
HIV IIF (positive/total performed)	3/4	0/1	3/4
Prevalence (%) (SD)	0.9 (0.5)	0	0.6 (0.3)
95%CI	0.0-1.9	0	0.0-1.2
Syphilis VDRL (positive/total performed)	7/330	7/197	14/527
Prevalence (SD)	2.1 (0.8)	3.6 (1.3)	2.7 (0.7)
95%CI	0.6-3.7	0.97-6.1	1.3-4.0
Hepatitis B HbsAg (positive/total performed)	4/330	2/197	6/527
Prevalence (SD)	1.2 (0.6)	1.0 (0.7)	1.1 (0.5)
95%CI	0.03-2.4	0.0-2.4	0.2-2.0
Hepatitis C anti-HCV (positive/total performed)	5/283	1/161	6/444
Prevalence (SD)	1.8 (0.8)	0.6 (0.6)	1.4 (0.5)
95%CI	0.2-3.3	0.0-1.8	0.3-2.4
HTLV I and II EIA (positive/total performed)	5/286	1/161	6/447
Prevalence (SD)	1.7 (0.8)	0.6 (0.6)	1.3 (0.5)
95%CI	0.2-3.3	0.0-1.8	0.3-2.4
No STD – N (%)	299 (92.6)	187 (94.4)	486 (93.3)
≥ 1 STD – N (%)	24 (7.4)	11 (5.6)	35 (6.7)
≥ 2 STD – N (%)	1 (0.3)	0 (0.0)	1 (0.2)

HIV: there was 1 indeterminate result in the group of pregnant women that was not confirmed by immunofluorescence;

HbsAg: there were 3 indeterminate results in the postpartum group; HTLV I and II: there were 2 indeterminate results in the postpartum group.

Note: indeterminate results were not included when calculating prevalence.

even lower in the pregnant women most vulnerable to infection¹². In the current study, although most of the postpartum women had received prenatal care (94.1%), beginning in the first trimester and with more than six visits, only 40.4% had been tested for HIV, suggesting that on this point the prenatal services fail to meet the Ministry of Health guidelines. According to the *Sentinel Study on Postpartum Women* for the year 2004, HIV prevalence in this population in Southeast Brazil (where Vitória is located) was 0.537%, similar to the rate in our study (0.6%)¹³.

History of STDs in the current pregnancy was a risk factor for HIV infection. Data from the literature show that the presence of an untreated STD can increase the risk of both acquiring and transmitting HIV. On the other hand, improving the efficiency of STD management can reduce the incidence of HIV infection in the general population by some 40%¹⁴. The association between other STDs and HIV infection has been demonstrated by various studies, thus reinforcing the need for HIV serological testing in patients

with other STDs¹⁰. Prevention and treatment of other STDs are thus important components of any HIV prevention strategy. Other factors associated with HIV infection were current partner with a history of blood transfusion and a previous HIV-positive partner. Importantly, statistical evaluation of possible risk factors was compromised by the low infection rate. Miranda et al.¹⁵, evaluating pregnant women in the Municipality of Vitória, observed that the main HIV transmission route was sexual, in women with a single partner, and who reported no other risk behavior. In another study in the Municipality of Vitória, Miranda et al.¹⁶ showed an association between HIV infection and history of injecting drug use and prostitution in pregnant women, and history of incarceration and injecting drug use in their partners, risk factors that have been reported in various other studies. Lima & Tanure¹⁷, evaluating pregnant women in the Municipality of Serra, reported that the only factor statistically associated with HIV infection in this population was history of a drug-using sex partner.

Table 3

Clinical information reported by low-income postpartum and pregnant women in Greater Metropolitan Vitória, Espírito Santo State, Brazil.

	Postpartum (N = 332)		Pregnant (N = 202)		Total (N = 534)	
	n	%	n	%	n	%
Age at first pregnancy (years)						
12-19	188	56.4	127	62.9	315	58.9
20-30	112	33.5	57	28.4	162	30.2
28-35	16	4.8	10	5.0	26	4.9
> 35	5	1.5	0	0.0	5	1.0
NR	19	5.7	8	4.0	27	5.1
Mean (SD)	19.8 (4.8)		19.3 (4.0)		19.6 (4.5)	
Range	12-38		12-35		12-38	
History of abortion	109	33.6	32	16.1	141	27.0
Spontaneous (miscarriage)	94	86.2	27	84.3	121	85.8
Induced	17	15.5	6	18.7	23	16.3
Reported history of STD						
Previous	27	8.3	7	3.5	34	6.5
During current pregnancy	14	4.3	3	1.5	17	3.3
Types of reported previous STDs						
Syphilis	7	31.8	1	16.7	8	28.6
Gonorrhea	4	18.2	-	-	4	14.3
Genital warts	6	27.3	4	66.7	10	35.7
Genital herpes	1	4.5	-	-	1	3.6
Hepatitis B	1	4.5	1	16.7	2	7.1
HIV	1	4.5	-	-	1	3.6
Prenatal follow-up	305	94.1	202 *	100.0	507	94.9
HIV test during current pregnancy	131	40.4	202 *	100.0	333	62.4
Health problem during current pregnancy	187	57.7	73	36.7	260	49.7
Medication during current pregnancy	260	80.2	81	40.7	341	65.2
Report of previous surgery	123	38.0	40	20.1	163	31.2
Report of blood transfusion	35	10.8	8	4.0	43	8.2

NR = not reported; SD = standard deviation.

* All the pregnant women were selected and interviewed in a prenatal service that routinely performed HIV testing.

The current study showed a high prevalence of syphilis in both the postpartum group (2.1%) and the pregnant women (3.6%). Considering that 94.1% and 100%, respectively, reported undergoing or having undergone prenatal care, one has to conclude that there was some flaw: syphilis testing was not performed, or was performed inadequately, or treatment was inadequate or incomplete. In many regions of the country, more than 95% of pregnant women attend prenatal care, and 91.5% give birth in maternity hospitals; however, the maternal and perinatal morbidity and mortality related to syphilis remain high, reflecting important deficiencies in care¹². According to studies conducted in the Municipality of Vitória¹⁶, despite campaigns by the Ministry of Health to reduce congenital syphilis, the rates remained stable and high in a five-year period

(2.9% in 1995 and 3% in 2000). In the current study, the prevalence rate (2.7%) was consistent with findings from other studies in Brazil. Of the seven VDRL-positive postpartum women in this study, only one had not attended prenatal care, while the other six had four or more prenatal visits and four had their first prenatal visit in the first trimester; even so, only two (28.6%) reported having treated their syphilis with penicillin during the pregnancy. Factors associated with syphilis in this study were: previous history of STD and STD during the current pregnancy, sexual initiation at 16 years of age or younger, and drug use in the postpartum group when the groups were evaluated separately (OR = 12.2; 95%CI: 2.0-76.1) and history of domestic violence. Factors related to the current partner, like his sexual contact with multiple partners, drug use, alcohol abuse, and

Table 4

Association between sexually transmitted infections and independent variables in low-income postpartum and pregnant women in Greater Metropolitan Vitória, Espírito Santo State, Brazil.

Associated factors	All patients [OR (95%CI)]	
	Bivariate analysis	Multivariate analysis *
HIV		
Report of STD in current pregnancy	15.39 (1.34-180.98)	n.s.
Current partner received blood transfusion	13.66 (1.18-157.75)	n.s.
Previous partner HIV-positive	133.00 (5.98-2956.18)	52.84 (1.15-2423.94)
Syphilis		
Report of previous STD	12.80 (4.15-39.43)	n.s.
Report of STD in current pregnancy	22.87 (6.65-78.56)	10.86 (1.01-115.99)
Domestic violence	8.17 (2.58-25.83)	n.s.
Sexual initiation at 16 years or younger	3.71 (1.02-13.46)	n.s.
Current partner with multiple partners	3.61 (1.22-10.69)	n.s.
Current drug-using partner	7.57 (2.55-22.44)	n.s.
Current partner with history of alcohol abuse	4.00 (1.35-11.86)	3.81 (1.01-14.30)
Current partner with history of STD	5.93 (1.54-22.81)	n.s.
HCV		
Body tattoos	8.12 (1.41-46.48)	22.93 (1.28-410.90)
Blood transfusion	5.83 (1.03-33.03)	n.s.
Previous partner with blood transfusion	12.16 (1.09-134.66)	n.s.
HTLV-I/II		
Domestic violence	5.63 (1.08-29.43)	4.82 (0.84-27.42)

* Controlled for age, years of schooling, and skin color in logistic regression models.

STDs were also associated with syphilis. Miranda et al.¹⁶, analyzing pregnant women in the Municipality of Vitória, found similar risk factors: previous history of STDs, sexual initiation before 16 years of age, and sex partners with a history of injecting and non-injecting drug use.

Overall HbsAg prevalence in this study (1.2%) was consistent with areas of low endemicity, where fewer than 2% of the population are HBV carriers, with a lifetime risk of infection less than 20%, and where the majority of infections occur in adults from high-risk groups; it was also similar to the rate found by Miranda et al.¹⁶ in pregnant women in the Municipality of Vitória (1.1%). Although various factors showed high odds ratios, no risk factor was statistically associated with HBV infection, due to the small number of HBV seropositive women in the study sample.

HCV prevalence in the postpartum group (1.8%) and pregnant women (0.6%) was similar to findings from other studies. Body tattooing and blood transfusion were factors associated with hepatitis C, in addition to a report of previous partners with a history of blood transfusion. According to the Centers for Disease Control and Prevention (CDC)¹⁸, although some studies have

found an association between body tattoos and HCV infection in selected populations, it is not known whether these results can be transposed to the general population. Any percutaneous exposure has the potential to transfer infected blood and transmit bloodstream pathogens. In addition, body tattoos can be associated independently with other risk factors, like use of psychoactive substances and unprotected sex and/or sex with multiple partners. These associations were corroborated by the current study. Alcohol use during pregnancy (OR = 4.0; 95%CI: 1.79-8.87), history of smoking (OR = 6.1; 95%CI: 2.57-14.47), and drug use (OR = 6.1; 95%CI: 1.61-19.22), as well as reported sexual contact with multiple partners (1-4 vs. > 4, OR = 9.4; 95%CI: 3.79-22.50) were statistically associated with the presence of body tattoos.

This study found high HTLV prevalence, especially in the postpartum group (1.7%). However, the real prevalence could not be determined, since the confirmatory test was not performed. Prevalence in the group of pregnant women was 0.6%, close to the rate found in pregnant women in Salvador, Bahia State (0.7-0.88%)¹⁹. Vertically acquired HTLV-I is associated with the

occurrence of adult T-cell leukemia/lymphoma in 1-5% of the infected children and myelopathy/tropical spastic paraparesis in 0.25-3%²⁰. A significant association was observed between history of domestic violence and HTLV-I/II infection, perhaps as a marker of unfavorable socioeconomic conditions. Santos et al.¹⁹, analyzing 1,024 pregnant women, failed to identify risk factors in the sample, since the seropositive women did not report blood transfusions or intravenous drug use. The evidence that HTLV-I-positive women had more than two sex partners as compared to the reference group, with single partners, reinforces the hypothesis of sexual transmission in this population. Bittencourt et al.²¹, evaluating 6,754 pregnant women in Salvador, found a 0.84% prevalence rate and observed that the epidemiological data for the HTLV-positive mothers suggested that vertical transmission was the most frequent mode of HTLV-I transmission. A total of 88.5% of the women reported that they had been breastfed, and few women had received blood transfusions or had more than ten lifetime sex partners. These hypotheses could not be tested in the study, since these variables were not assessed; however, none of the six HTLV-positive women

showed associations that might indicate the infection route. However, the high prevalence found in the study might be inflated, since it lacked corroboration by the confirmatory test. At any rate, more studies are needed to assess the importance of this infection before specific serology is included in prenatal testing and for the mothers to be counseled and oriented concerning this disease, considering that HTLV can be transmitted vertically to the infant, especially during breastfeeding.

Final remarks

This study's findings allow reaffirming the importance of serological tests for STD diagnosis during prenatal care, allowing preventive and therapeutic measures to be adopted, both to contain the spread of such diseases and to prevent their transmission to the fetuses and newborns. These measures could definitely help reduce the incidence of HIV/AIDS, syphilis, HBV, HCV, and adult T-cell leukemia/lymphoma and HTLV-I-associated myelopathy in Brazil as a whole and specifically in the State of Espírito Santo.

Resumo

A ocorrência de doenças sexualmente transmissíveis durante a gravidez representa risco aumentado de morbidade e mortalidade para o feto e neonato em virtude da transmissão vertical. O objetivo deste estudo foi identificar a prevalência da infecção por HIV, sífilis, hepatites B e C e por HTLV-I/II em parturientes e gestantes de baixa renda da Região Metropolitana de Vitória, Espírito Santo, Brasil, e avaliar fatores de risco associados a essas infecções. Foi realizado estudo de corte transversal de fevereiro a outubro de 1999, avaliando 534 pacientes (332 parturientes e 202 gestantes). Todas as participantes foram submetidas a entrevista semi-estruturada, após a qual foi coletada uma amostra de sangue para realização de testes sorológicos (HIV 1 e 2, VDRL, HbsAg, anti-HCV e HTLV-II). A soroprevalência das infecções estudadas entre as parturientes, as gestantes e no total da amostra foi, respectivamente: HIV 0,9%, 0% e 0,6%; sífilis 2,1%, 3,6% e 2,7%; HBV 1,2%, 1% e 1,1%; HCV 1,8%, 0,6% e 1,4% e HTLV-I/II 1,7%, 0,6% e 1,3%. Os fatores associados às infecções avaliadas são descritos e analisados à luz de achados de outros investigadores.

Doenças Sexualmente Transmissíveis; Gravidez; Transmissão Vertical de Doença

Contributors

L. H. M. Lima conducted the data collection and participated together with M. C. Viana in the study design, development and review of the database, analysis of the results, and elaboration of the tables, as well as the literature review and preparation of the manuscript.

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