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ORIGINAL ARTICLE

HIV POSITIVE PREGNANCIES AND THE RISK FACTORS RELATED TO HIV VERTICAL TRANSMISSION

GESTANTES HIV POSITIVAS E OS FATORES DE RISCO RELACIONADOS À TRANSMISSÃO VERTICAL DO HIV

MUJERES EMBARAZADAS VIH POSITIVO Y LOS FACTORES DE RIESGO RELACIONADOS A LA TRANSMISIÓN VERTICAL DEL VIH

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ABSTRACT

Objective: to determine the socio-demographic characteristics of pregnant women infected with HIV related to the risk of vertical HIV transmission. ***Method:*** a descriptive and quantitative study, in which 323 records of HIV positive pregnant women who were delivered at a public maternity hospital were analyzed. The data was analyzed by the electronic program, SigmaStat®, version 2.0. Quantitative data was analyzed descriptively from frequency distribution, means and standard deviation. The proportions were compared by the χ^2 test, accompanied by Fisher's exact test. Statistically significant differences were found in which p was less than 5% ($p < 0.05$). ***Results:*** there were situations that contradicted the recommendations of the Ministry of Health: 54.5% of the pregnant women performed less than six prenatal consultations; 87% had unprotected sex during pregnancy; 71.2% performed the first prenatal visit only after the first trimester. ***Conclusion:*** a quantitative diagnosis was obtained about the risks of exposure experienced by pregnant women, facilitating assertive planning in relation to aspects that are still flawed and that increase the chances of vertical HIV transmission. ***Descriptors*:** HIV; Infectious Disease Transmission, Vertical; Communicable Disease Control; Pregnant Women.

RESUMO

Objetivo*:** determinar as características sociodemográficas de gestantes infectadas pelo HIV relacionadas ao risco de transmissão vertical do HIV. ***Método*:** estudo quantitativo, descritivo, em que foram analisados 323 prontuários de gestantes HIV positivo que realizaram o parto em uma maternidade pública. Os dados foram analisados pelo programa eletrônico SigmaStat®, versão 2.0. Os dados quantitativos foram analisados descritivamente a partir de distribuição de frequências, médias e desvio padrão. As proporções foram comparadas pelo teste do χ^2, acompanhado do teste exato de Fisher. Foram consideradas estatisticamente significantes as diferenças em que *p* foi menor que 5% ($p<0,05$). ***Resultados*:** verificaram-se situações que contrariam as recomendações do Ministério da Saúde: 54,5% das gestantes realizaram menos de seis consultas pré-natal; 87% praticaram sexo desprotegido durante a gestação; 71,2% realizaram a primeira consulta pré-natal somente após o primeiro trimestre. ***Conclusão: foi obtido o diagnóstico quantitativo acerca dos riscos de exposição sofrido pelas gestantes, facilitando um planejamento assertivo em relação aos aspectos que ainda são falhos e que aumentam as chances da transmissão vertical do HIV. ***Descritores*:** HIV; Transmissão Vertical de Doenças Infecciosas; Controle de Doenças Transmissíveis; Gestantes.

RESUMEN

Objetivo: determinar las características sociodemográficas de las mujeres embarazadas infectadas por el VIH relacionandas al riesgo de transmisión vertical del VIH. ***Método:*** estudio cuantitativo, descriptivo, en que fueron analizados 323 prontuarios de las mujeres embarazadas VIH positivo, que realizaron el parto en una maternidad pública. Los datos fueron analizados por el programa electrónico SigmaStat®, versión 2.0. Los datos cuantitativos se analizaron de forma descriptiva a partir de la distribución de frecuencias, medias y desviaciones padronizadas. Las proporciones fueron comparadas por la prueba del χ^2, acompañado de la prueba exacta de Fisher. Se consideraron estadísticamente significativas las diferencias en que p fue menor que 5% ($p < 0,05$). ***Resultados:*** se verificaron situaciones que contrarresta las recomendaciones del Ministerio de Salud: 54,5% de las mujeres embarazadas realizaron menos de seis consultas prenatales, el 87% practicaron sexo desprotegido durante la gestación; el 71,2% realizaron la primera consulta prenatal sólo después del primer trimestre. ***Conclusión:*** se obtuvo el diagnóstico cuantitativo acerca de los riesgos de exposición sufridos por las mujeres embarazadas, facilitando una planificación asertiva en relación a los aspectos que aún son fallidos y que aumentan las posibilidades de la transmisión vertical del VIH. ***Descriptores*:** VIH; Transmisión Vertical de Enfermedad Infecciosa; Control de Enfermedades Transmisibles; Mujeres Embarazadas.

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INTRODUCTION

In view of the feminization of the human immunodeficiency virus (HIV) epidemic, it is evident that many infected women are of childbearing age. In this sense, the relevance of gestation in the context of HIV is highlighted, which has the imminent risk of vertical transmission (VT). It is highlighted that VT is the main route of HIV infection in the child population.[1]

In Brazil, the prevalence of HIV infection in pregnant women was estimated at 0.4% between 2011 and 2012. The rate of detection of HIV infection has increased from 2.0 cases / thousand live births (one thousand LB) in 2004, to 2.5 cases / thousand LB in 2013. This growing trend has been observed in all Brazilian regions, except in the Southeast.[2]

When one looks at HIV-infected women, it is important to associate them with the possibility of pregnancy and, for this, there is a treatment aimed at the prophylaxis of HIV VT. HIV VT prophylaxis follows recommendations and routines for the health services and users, aiming to obtain good therapeutic results, implying the maintenance of adherence to treatment and prophylactic measures.[3]

Early diagnosis is necessary in all pregnant women, allowing adequate antiretroviral therapy (ART), proper delivery planning, breastfeeding control, and the early initiation of antiretroviral prophylaxis (ARP) indicated for newborns.[4]

In addition to the importance of reinforcing the actions recommended by the Ministry of Health (2010) to reduce HIV VT rates in the country, systematic monitoring of these indicators makes it possible to measure the effectiveness of interventions at a local level[5]. Therefore, it is necessary to know the target audience of these actions, guiding the reality experienced in the practice of the health service.

OBJECTIVE

- To determine the socio-demographic characteristics of pregnant women infected with HIV, related to the risk of vertical HIV transmission.

METHOD

A quantitative, descriptive study in which 323 medical records of HIV positive pregnant women, who delivered at a public maternity hospital, a reference in Maternal and Child Care in the city of Goiânia, Goiás, Brazil, from January 2006 to December 2011.

The data was obtained from the medical records of HIV positive pregnant women, taking into account the following variables: socio-demographic (age, color, level of education, occupation and marital status), clinical-obstetric and therapeutic, emphasizing data on prenatal, serological diagnosis, conduct in obstetric care and the care provided to women in the puerperium.

Data was analyzed by SigmaStat® Electronic Program, version 2.0. Quantitative data was analyzed descriptively from frequency distribution, means and standard deviation. The proportions were compared by the χ^2test, accompanied by Fisher's exact test. Statistically significant differences were found, in which p was less than 5% ($p < 0.05$).

The study had the research project approved by the Maternity's Research Ethics Committee under study, under protocol 29/11 no. 02/12, and complies with the recommendations of resolution 196/1996.

RESULTS

When observing the socio-demographic characteristics of the 323 studied HIV positive pregnant women, 158 (48.9%) were in the 25 to 34 year age group, 222 (68.7%) were single and 212 (65.6%) declared they were of brown color. Regarding schooling, 163 (50.5%) had between four and seven years of education, and the predominant were those who declared that they were housewives, with 242 (74.9%), according to the table 1.

Table 1. Profile of HIV positive pregnant women cared for at a reference hospital in maternal and child health. Goiânia (GO), Brazil, 2014.

Variables	N	%
Age		
< 18	14	4.3%
≥ 35	34	10.5%
18 – 24	117	36.2%
25 – 34	158	48.9%
Marital status		
Single	222	68.7%

Married / Unmarried	90	27.9%
Widow	2	0.6%
Divorced	4	1.2%
NI	5	1.5%
Color		
Brown	212	65.6%
White	79	24.5%
Black	32	9.9%
Education		
1 - 3 years	23	7.1%
4 - 7 years	163	50.5%
8 - 11 years	126	39.0%
≥ 12 years	8	2.5%
Illiterate	2	0.6%
NI	1	0.3%
Ocupation	242	74.9%
Housewife		
Employed	67	20.7%
Student	9	2.8%
Unemployed	3	0.9%
Retired	1	0.3%
NI	1	0.3%

When linking the age factor with unprotected sex during pregnancy, it was found that 281 HIV positive pregnant women had unprotected sex during pregnancy, of which 129 (45.9%) pregnant women were included in the age group between 25 to 34 years of age (p = 0.017).

There was a significant association between age and use of illicit drugs during pregnancy, where young HIV-positive pregnant women aged 18-24 (p = 0.001) and 25-34 years (p = 0.005) formed the groups with a greater number of users.

Smoking was significantly more frequent in the age range between 25 and 34 years, totaling 17 HIV positive pregnant women (p = 0.020).

HIV-positive pregnant women who declared themselves to be pregnant and who underwent the first prenatal visit until the 14th week of gestation corresponded to 37 pregnant women (p = 0.008). These had fewer VT-related risk factors than the other pregnant women in the study. On the other hand, the HIV-positive pregnant women who declared themselves white and performed the first prenatal visit until the 14th week of pregnancy corresponded to 28 pregnant women (p = 0.001).

When analyzing the color and the presence of co-infections in pregnancy, it was verified that 25 white women had some HIV-associated co-infection (p = 0.027). The other relationships between color and vertical transmission risk factors did not have statistical significance.

The association between schooling and use of ART indicates that 116 pregnant women, with over eight years of education, adhered to ART (p <0.001); 23 pregnant women, with education of more than eight years, presented some co-infection (p <0.001); 60 pregnant women, with more than eight years of education, presented viral load (VL) less than 1000 cop / ml (p = 0.030) and the other associations between schooling and risk factors did not have statistical significance.

The associations between occupation and VT risk factors were not statistically significant.

In a study about the prevalence of HIV-related risk factors in the study institution (Table 2), when analyzing the moment the HIV diagnosis was made by these women, it was found that 136 (42.1%) of the pregnant women were diagnosed before pregnancy, followed by 77 (23.8%) pregnant women who were diagnosed during the second trimester of pregnancy.

Regarding prenatal consultations, 176 (54.5%) HIV positive pregnant women performed one to five prenatal consultations and 230 (71.2%) performed the first prenatal visit with more than 14 weeks of pregnancy.

Regarding sexual practice, 281 (87%) pregnant women reported having unprotected sex during pregnancy; 271 (83.9%) did not use illicit drugs; 122 (37.8%) were not smokers and did not ingest alcohol during pregnancy.

Table 2. Prevalence of risk factors related to HIV VT, during prenatal, delivery and immediate puerperium, in HIV positive pregnant women attended at a reference hospital in maternal and child health. Goiânia (GO), Brazil, 2014.

Variable	N	%
When the diagnosis of HIV was made		
Before Pregnancy	136	42%
1st trimester	44	13.6%
2nd trimester	77	23.8%
3rd trimester	53	16.4%
After childbirth	1	0.3%
During childbirth	4	1.2%
NI	8	2.5%
Number of prenatal consultations		
1 to 5 queries	176	54.5%
6 queries or more	125	38.7%
No consultations	10	3.1%
NI	12	3.7%
IG first prenatal visit		
No consultations	6	1.9%
> 14th week	230	71.2%
≤ 14th week	70	21.7%
NI	17	5.3%
Unprotected sex during pregnancy		
No	18	5.6%
Yes	281	87.0%
NI	24	7.4%
Use of illicit drugs		
No	271	83.9%
Yes	20	6.2%
NI	32	9.9%
Smoking		
No	122	37.8%
Yes	52	16.1%
NI	149	46.1%
Alcohol Use		
No	122	37.8%
Yes	47	14.6%
NI	154	48.0%

As can be seen in table 3, 89 (27.6%) pregnant women had partners with positive serology for HIV. In addition, 274 (84.8%) used ARP during pregnancy and 169 (52.3%) started using ARV between the 14th and 28th weeks of pregnancy.

Elective cesarean section was performed in 200 (61.9%) of the HIV positive pregnant women; 275 (85.1%) had no bleeding during delivery and 232 (71.8%) had no other co-infections.

A total of 124 (38.4%) had a VL lower than 1,000 copies / ml and 163 (50.5%) had a TCD4 + lymphocyte count greater than or equal to 200 cells / mm^3. Among the HIV positive pregnant women in the study, 203 (62.8%) did not present premature amniotic membrane rupture and 262 (81.1%) had no maternal comorbidity.

Table 3. Prevalence of risk factors related to HIV VT, during prenatal, delivery and immediate puerperium, in HIV positive pregnant women attending a referral hospital in maternal and child health. Goiânia (GO), Brazil, 2014.

Variables	n	%
Partner Serology		
Negative	22	6.8%
Positive	89	27.6%
NI	212	65.60%
Use of ART during gestation		
No	42	13.0%
Yes	274	84.8%
NI	7	2.20%
Beginning of ARP use during pregnancy		

Did not use	42	13.0%
14th to 28th without	169	52.3%
After 28th without	57	17.6%
Up to 14th without	39	12.1%
NI	16	5.0%
Way of delivery		
Emergency Caesarean section	53	16.4%
Elective cesarean section	200	61.9%
Normal (domicile)	1	0.3%
Normal birth	60	18.6%
Normal childbirth w / episcus	9	2.8%
Bleeding in childbirth		
No	275	85.1%
Yes	39	12.1%
NI	9	2.80%
Pregnancy Co-infection		
No	234	72.4%
Yes	89	27.6%
Viral charge		
<1000 Cop / ml	124	38.4%
≥ 1000 Cop / ml	74	22.9%
NI	125	38.7%
Count Lymphocytes TCD4 +		
<200 cells / mm^3	21	6.5%
≥ 200 cells / mm^3	163	50.5%
NI	139	43.0%
Premature Placental Breakdown		
No	203	62.8%
Yes	117	36.2%
NI	3	1.0%
Maternal comorbidity		
No	262	81.1%
Yes	54	16.7%
NI	2	0.60%

DISCUSSION

This study characterizes the HIV-positive pregnant women attended at a public institution in the Central-West region of Brazil, as well as verifying the main risk factors related to HIV VT, based on the Manual of Recommendations for the prophylaxis of vertical HIV transmission and antiretroviral therapy in pregnant women.[5]

Most pregnant women are of childbearing age and have no employment relationship, data that is similar to those found in countries with different cultures and economies, as in a study conducted in Vietnam[6]. Most are single, brown and have low levels of education, like HIV positive pregnant women in other regions, such as the Southeast and South of the country.[7]

Most of the pregnant women stated that they did not use alcohol, tobacco and illegal drugs. On the other hand, a study involving 40 pregnant women with HIV showed that 10% of them reported using illicit drugs during the gestational period[8] and this is an important factor in the characterization of the health habits of these women.

The number of users of psychoactive substances in this situation is considerable, and these tend to present a deficit in self-care, neglecting their own health and, consequently, adequate treatment of the prophylaxis of TV, and the possibility of prolonging the transmission chain of the HIV through the use of parenteral or injectable drugs.

The early approach of these pregnant women is of fundamental importance, so that the diagnosis of HIV is performed as soon as possible, if possible, in the first trimester of pregnancy.[9] It is observed that most of the pregnant women in this study received the diagnosis prior to gestation, given the difference between a study performed in the southern region of the country where almost half of these women were diagnosed as having HIV during pregnancy[10], which shows the efficacy of the serological testing of pregnant women for the diagnosis in a timely manner, so that the prophylactic measures are performed as early as possible.

The number of prenatal consultations performed by most of these pregnant women was one to five consultations, which is lower than the minimum of six consultations recommended by the Ministry of Health[5]. The gestational age (GA) of the first prenatal visit was also unsatisfactory, since 71.2% did so after the first trimester of gestation, which is contrary to the recommendations of the Ministry of Health, which recommends first prenatal visit in the first trimester.

This data demonstrates that there is a late intake of these pregnant women, either due to the lack of interest in their adherence, the difficulty of access to health services or even the difficulty of the services themselves in guiding and addressing these pregnant women, emphasizing the importance of diagnosis and adherence to prophylactic measures.

Most pregnant women underwent ART between the 14th and 28th week of gestation, confirming that the supply of ARVP drugs in the study region is carried out effectively and that the initiation of ARP administration should be performed, preferably, until the 14th week of gestation and at most until the 28th week of gestation, ensuring that it is performed early.

The serology of the partner of the HIV-positive pregnant woman was a fact that aroused attention, due to a high underreporting rate, like an African survey that reported that HIV testing among men was less than 5% among those investigated[11]. Among the partners who reported on serology, the number of those who declared themselves to be seropositive was higher, with the possibility that these women could be infected through a heterosexual relationship.

According to the recommendations of antiretroviral prophylaxis, it is necessary to choose the delivery route based on the viral load, CD4 + T lymphocyte count and Gestational Age of the pregnant women, emphasizing that the preferred route for this public is elective cesarean.

The results indicate that most pregnant women underwent elective caesarean section with GA between 37 and 41 weeks' pregnancy, similar to the Southeast region of the country where approximately 70% of the research participants performed their delivery through this route.[12]

Hemorrhage, premature rupture of the amniotic membrane and the use of invasive procedures during delivery are important risk factors for the occurrence of VT[13] and, satisfactorily, none of these events occurred with most of the pregnant women in the study. Thus, it can be observed that the choice of the recommended delivery route, associated with the appropriate GA, prevents such risks and/or complications.

The lower the mother's VL, the less the possibility of VT.[14] This condition is the objective of prophylaxis with ARP drugs, whose effects are aimed at ensuring that the HIV-positive pregnant woman arrives at the time of delivery with the lowest VL possible, preferably undetectable or at least less than one thousand viral copies per ml. Clinical status, TCD4 + lymphocyte count, and VL level are the indicators for therapy.[15]

In this study, a considerable deficit was observed in relation to VLD and CD4 + lymphocyte counts attached to the records or notes related to them on the pregnant woman's card, like a study carried out in the Southeast region of Brazil, where approximately 80 % of the pregnant women studied did not have VL value and TCD4 + lymphocyte counts.[16]

This data alerts to the lack of preparation of the health services in addressing these pregnant women and to verify in which degree of viraemia they are. This information becomes relevant because it is responsible for the choice of the way of delivery and which ARP therapy to adopt.[5] However, among the reported cases, most pregnant women had VL lower than one thousand copies/ml and TCD4 + lymphocyte count greater than 200 cells / mm ^{3}. This shows, once again, the importance of adherence to prophylactic measures, especially the use of ARP during prenatal care.

Despite not being part of the study's objectives, an important research finding was obtained regarding the considerable index (30.6%) of tubal ligation observed in these pregnant women, which aroused interest in the researchers to develop another study that address the reproductive issue of HIV-positive women and investigate whether these measures are being adhered to, based on the Sexual and Reproductive Rights Guidelines,[16] or whether they consist basically in the freedom of choice of these pregnant women.

CONCLUSION

The analysis of the profile of the exposed population makes it possible to outline effective actions in the prevention of VT, since, even in the presence of a protocol that guides prophylactic measures, and there are still difficulties in capturing pregnant women at the opportune moment of prenatal care and promoting the adherence of treatment.

The study enabled a quantitative diagnosis about the risks of exposure suffered by the pregnant women, facilitating an assertive planning in relation to the aspects that are still flawed and that increase the chances of the VT if there are no adequate interventions.

Concerning issues involving partners, it is of the utmost importance that health services include educational and care actions that encompass diagnosis and treatment offered throughout the service network, influencing, in them, the joint responsibility of combating the spread of the virus.

It is the duty of the health professional to ensure that the recommendations for the prophylaxis of HIV VT, as recommended by the Ministry of Health, complied with according to the protocols. However, serving them fully is an arduous task, considering that it depends not only on the offer of services, but also on receptivity and adherence to them. The implementation and systematic evaluation of these indicators provide satisfactory results, keeping the HIV VT rate low.

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