DOI: 10.1590/1809-4503201400040008

ORIGINAL ARTICLE / *ARTIGO ORIGINAL*

Barriers to control syphilis and HIV vertical transmission in the health care system in the city of Sao Paulo

Entraves no controle da transmissão vertical da sífilis e do HIV no sistema de atenção à saúde do município de São Paulo

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ABSTRACT: ***Objective:*** The objective of this study was to identify possible barriers to control vertical transmission of syphilis and HIV through the analysis of the orientation process of pregnant women from prenatal care to the obstetric center at an university hospital in Sao Paulo (Reference) and their return (with their exposed babies) for follow-up after hospital discharge (counter-reference). ***Methods:*** It is a retrospective cross-sectional study including interviews with healthcare personnel. Pregnant women with syphilis and/or HIV-infection admitted for labor or miscarriage were identified from August 2006 to August 2007. Routine care for mothers and babies were analyzed. ***Results:*** 56 pregnant women were identified: 43 were HIV-infected, 11 had syphilis and two were coinfected (syphilis/HIV); 22 health care professionals were interviewed. Prenatal care was identified in 91.1% of these women: 7/11 (63.6%) with syphilis; 44/45 (97.8%) HIV-infected or coinfected. The reference for delivery was satisfactory for 57.7% of the syphilis-infected women and 97.7% of the HIV-infected ones. The counter-reference was satisfactory for all babies and mothers at hospital discharge, besides the non-adherence to this recommendation. Interviews with health care professionals showed there are better routines for assisting and following-up pregnant women, puerperal women and HIV-infected or exposed babies than for those infected with syphilis. The epidemiological report and surveillance system are also better for HIV-infected patients. ***Conclusion:*** The difficulties in the reference and counter-reference system of these women and their babies are evident barriers to control the vertical transmission of these infectious diseases.

Keywords: Quality of healthcare. Congenital syphilis/Prevention and control. HIV/prevention and control. HIV/Referral and consultation. Prenatal care.

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Conflict of interests: nothing to declare – **Financial support:** none.

RESUMO: ***Objetivo:*** O objetivo deste estudo foi identificar possíveis entraves ao controle da transmissão vertical da sífilis e HIV através da análise do processo de encaminhamento das gestantes desde os serviços de atendimento pré-natal até o Centro Obstétrico de um hospital universitário, no município de São Paulo (referência), e seu retorno, com seus bebês expostos, após alta hospitalar, para acompanhamento (contrarreferência). ***Método:*** Estudo de corte transversal, retrospectivo, acrescido de entrevistas com profissionais de saúde. Gestantes com sífilis e/ou infecção pelo HIV foram identificadas na admissão para o parto de agosto de 2006 a agosto de 2007. A rotina e o fluxo dos encaminhamentos de mães e recém-nascidos foram analisados. ***Resultados:*** Foram identificadas 56 gestantes infectadas: 43 com infecção pelo HIV, 11 com sífilis e duas coinfectadas (sífilis/HIV); 22 profissionais de saúde foram entrevistados. Acompanhamento pré-natal foi feito por 91,1% das mulheres: 7/11 (63,6%) com sífilis; 44/45 (97,8%) infectadas pelo HIV ou coinfectadas. A referência para o parto foi adequada para 57,1% das gestantes com sífilis e 97,7% daquelas infectadas pelo HIV. A contrarreferência foi adequada para todas as gestantes, apesar da não aderência a essa recomendação. Entrevistas com os profissionais de saúde revelaram que as rotinas e o fluxo de encaminhamento das gestantes, puérperas e recém-nascidos estão mais bem estabelecidos para HIV do que para sífilis. A vigilância epidemiológica e notificação também foram mais eficazes para o HIV. ***Conclusão:*** As dificuldades no sistema de referência e contrarreferência dessas mulheres e seus bebês são evidentes entraves ao controle da transmissão vertical desses agravos.

Palavras-chave: Qualidade da assistência à saúde. Sífilis congênita/Prevenção e controle. HIV/Prevenção e controle. HIV/Referência e consulta. Cuidado pré-natal.

INTRODUCTION

In Brazil, the estimated prevalence of HIV infection among pregnant women is of 0.41% and, of syphilis, of 1.6%, which means that 12,456 newborns (NB) are exposed to HIV, and 12 thousand are born with congenital syphilis every year[1,2]. In 2011, 9,374 new cases of congenital syphilis[3] and 396 cases of vertical transmission (VT) of HIV[4] were notified in the Disease Information System (SINAN). While cases of congenital syphilis have been increasing since 2007 (incidence coefficient = 4.4 new cases/1,000 live births in São Paulo)[5], cases of VT of HIV continuously decline in the whole country[6-8]; its incidence has reduced 68% from 2000 to 2004, and 26% from 2008 to 2011[5] in the city of São Paulo.

The opportunity to control the VT of HIV and syphilis is concentrated on the prenatal period, but other operational stages and control actions should be prolonged during labor and puerperium. Diagnosing these conditions during pregnancy is essential, however, insufficient: besides being diagnosed, pregnant women should be notified to the epidemiological survey service and referred from prenatal to labor (reference), and from puerperium to follow-up outpatient clinics and/or basic health units (counter-reference), without duplicity of actions and with proper treatment. This will ensure full, hierarchized and regionalized care to the pregnant woman and

to the NB[9]. The counter-reference after hospital discharge is important to define VT rates and to prevent the same risk to be prolonged for future pregnancies. Controlling these conditions has been more effective for HIV than for syphilis[10].

The objective of this study was to analyze the operation of care addressed to women with syphilis and/or infected with HIV and to their exposed NB in a university hospital, in the city of São Paulo (assistance actions and referral flow, reference and counter-reference systems)[9], in order to identify possible barriers in the control of VT of these conditions.

METHODS

This is a cross-sectional, retrospective study including interviews with health professionals, which was carried out at Hospital São Paulo (HSP), university general hospital of Universidade Federal de São Paulo (Unifesp), with 743 beds. Its geographic coverage comprehends more than 5 million inhabitants. Prenatal care in HSP is provided in different sectors, for pregnant women with low and high risk pregnancies; in average, 79 deliveries/month were performed in 2006 and 2007. Pregnant women are admitted to the Obstetric Center for labor or curettage after miscarriage after being referred to (reference) from prenatal services (from the hospital itself and its external services) or spontaneous demand. At hospital discharge, the mother and her NB are referred to outpatient clinics in the hospital or to the public network (counter-reference). An outpatient clinic specialized in Pediatric Infectious Diseases in this hospital cares for children born from women with infectious diseases during pregnancy.

The study population (pregnant women presenting criteria to define cases of syphilis and/or infection with HIV during pregnancy, at the time of labor and/or curettage after miscarriage) was identified among all of the admissions to the Obstetric Center of HSP for labor and curettage after miscarriage, from August 2006 to August 2007. The identification of infected pregnant women was based on: record of pregnant women with syphilis and/or infected by HIV at admission to the Obstetric Center; release of Zidovudine (AZT) for endovenous use during labor; Follow-up of NBs with perinatal exposure to syphilis and HIV in the outpatient clinic of Pediatric Infectious Diseases; results for HIV and syphilis serology available in the computerized system of the Central Laboratory of the hospital. Cases of syphilis and HIV infection (in the pregnant woman and in the NB) were characterized according to the definitions from manuals of the Ministry of Health[11,12].

Data of interest were collected by revising medical records of pregnant women and their NBs, with special focus on routine and referral flow. The impossibility to access the medical record and the absence of an adequate record of data to be used in the study were considered as exclusion criteria. The NBs of these pregnant women were also included, and their medical records were revised until the conclusion of medical follow-up, sufficient to define the VT of syphilis and/or HIV.

The definitions used for reference and counter-reference were:

- Reference of pregnant women for labor/post miscarriage curettage: written record of all the data that are important for labor care, for the pregnant women / puerperal women and to the NB, including laboratory tests and treatment conducted during prenatal follow-up.

- Counter-reference of puerperal women and NBs: referral to origin or reference services, with a written record of all of the necessary data for care: type of labor, intercurrences in peripartum and neonatal periods, medication used by the mother (prenatal and birth) and by the NB, breastfeeding, and results of laboratory tests.

A convenience sample of health professionals involved in the assistance addressed to this population was interviewed with the objective of obtaining information on assistance flow and routines. Interviews were conducted in a previously scheduled period, in secrecy, and included open-ended and closed-ended questions about care flow, requests for examinations, referring pregnant women during prenatal and admission for labor, and puerperal women and their NBs after labor.

The study was approved by the Research Ethics Committee of Hospital São Paulo, Universidade Federal de São Paulo, Escola Paulista de Medicina (Unifesp-EPM), and interviews were conducted after the informed consent forms were signed.

RESULTS

In the period of the study, 1,269 pregnant women were admitted to the Obstetric Center for labor (16 stillbirths) and 253 for curettage after miscarriage; 56 women fulfilled the inclusion criteria: 43 with HIV infection, 11 with syphilis and two coinfected women (syphilis/HIV). Most of them were aged between 20 to 34 years old, and had eight or fewer schooling years (Table 1). The distribution of serological results (for syphilis and HIV) of these patients can be seen in Figure 1.

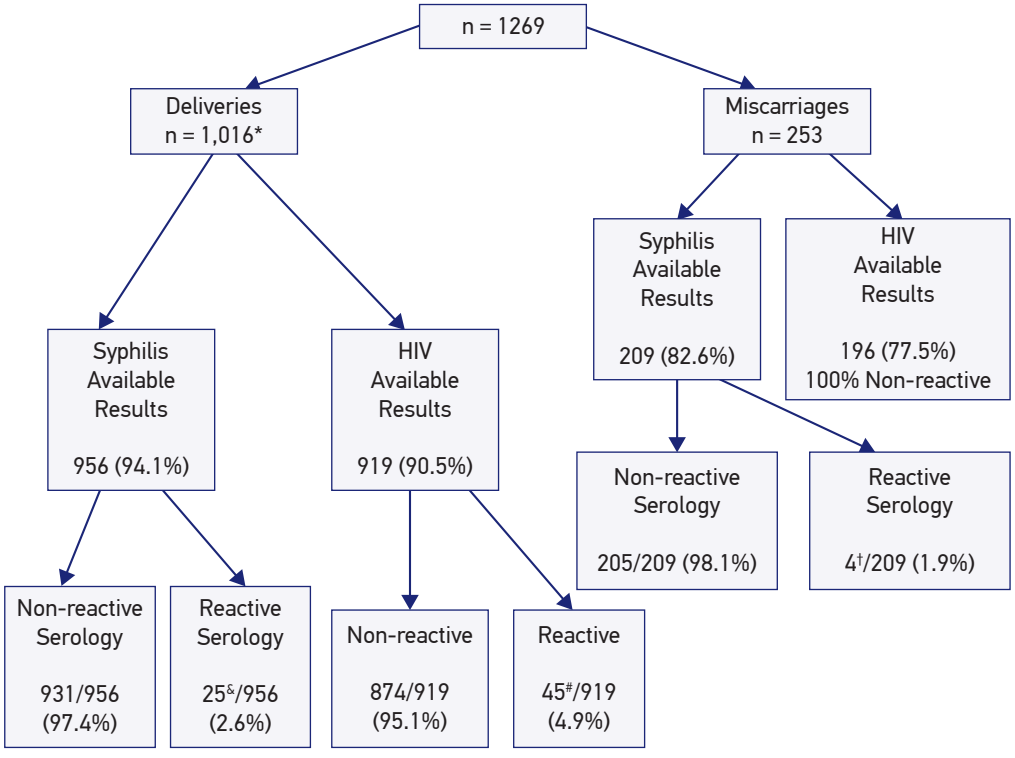
A record of prenatal follow-up was identified in 51 of these 56 pregnant women (91.1%): 7/11 (63.6%) women with syphilis; 44/45 (97.8%) women infected with HIV and/or coinfected (Table 2). Most pregnant women (66.1%) took their NBs for follow-up in the study hospital. There were two cases of spontaneous miscarriages among the 13 women with syphilis (15.4%), and an induced miscarriage (fetal anencephaly) among the 45 women infected with HIV (2.2%) (Table 2).

Four of the seven women with syphilis and prenatal follow-up (57.1%) were properly referred to (reference) at admission for labor or curettage after miscarriage: two women were followed-up at the study hospital and two of the five ones who were followed-up in external services (40%). Serology/treatment of the sexual partner were referenced to the labor of two pregnant women (one followed-up at the study hospital, and another one in an external service). Five of the 13 pregnant women with syphilis (38.5%) were not treated during prenatal follow-up; two of them were treated after diagnosis at labor, and three (one case of fetal death, one case of miscarriage and one live birth) knew the result of serology after hospital discharge.

One of the pregnant women with syphilis and fetal death had not undergone prenatal care, and another one, despite prenatal follow-up, had no reference to the performed tests, treatment and status of the sexual partner. Only one pregnant woman infected with HIV did not have prenatal care, and all of the others (43/44 = 97.7%) were referred to labor with records of all of the necessary data: prophylaxis and/or antiretroviral therapy, result of the last HIV viral load and CD4 cell count. All of them, except for one woman who had prenatal care

Table 1. Distribution of women with reagent tests for HIV and syphilis according to age and schooling years, Sao Paulo, Brazil, August 2006 to August 2007.

	Pregnant women/ women with syphilis		HIV+ Pregnant Women		Pregnant women with syphilis and HIV		Total	
	n	%	n	%	n	%	n	%
Age group								
< 20	1	9.1	3	7.0	0	0	4	7.1
20 – 34	9	81.8	28	65.1	2	100.0	39	69.6
≥ 35	1	9.1	12	27.9	0	0	13	23.2
Total	11	100.0	43	100.0	2	100.0	56	100.0
Schooling years								
< 8	5	45.5	12	27.9	2	100.0	19	33.9
8	2	18.2	17	39.5	0	0	19	33.9
11	2	18.2	12	27.9	0	0	14	25.0
≥ 12	0	0	2	4.7	0	0	2	3.6
Not informed	2	18.2	0	0	0	0	2	3.6
Total	11	100.0	43	100.0	2	100.0	56	100.0



*includes the pregnant woman hospitalized for miscarriage; &2 coinfected ones (syphilis/HIV); 14 excluded ones (absence of records) and 11 included ones; #2 coinfected ones (syphilis/HIV); 45 included ones; †2 excluded ones (absence of records) and 2 included ones.

Figure 1. Distribution of women according to the results of syphilis and HIV tests. São Paulo, 2006 – 2007.

in an external service, had information about serological tests for syphilis during pregnancy (and treatment, when recommended).

Prophylaxis with endovenous AZT during labor was not performed for three pregnant women: two were in labor when admitted to the Obstetric Center, and for the one admitted for pregnancy interruption due to anencephaly, such prophylaxis does not apply. Normal childbirth was conducted for 6/45 women (13.3%), who were on strong antiretroviral therapy and presented with undetectable HIV viral load; a cesarean section was conducted with 39/45 pregnant women (86.7%): 32 elective cesarean sections, 6 urgent ones and one without information.

Serological tests for syphilis were conducted at admission to the Obstetric Center in 54/56 pregnant women (96.4%), as well as tests for HIV among all pregnant women in the study, including those whose gestation progressed to miscarriage or fetal death.

Out of the 11 pregnant women with syphilis, eight were live births (one twin pregnancy), two miscarriages and two stillbirths. Six of them were treated at the nursery and two of them were not treated: one because the treatment addressed to the mother was considered to be adequate, and the other one because the results of the serological test of the mother was only released after hospital discharge. There was one newborn death (treated NB), resulting from extreme prematurity, esophageal atresia and kidney failure. Both children born from coinfected mothers were treated for syphilis and performed the necessary tests in the nursery.

Forty-seven children were born alive, from the 44 pregnant women infected with HIV (one twin and one triplet pregnancy); they all received prophylaxis with oral AZT and milk formula. A NB exposed to HIV died after 29 days, due to cardiac malformation.

Counter-reference was adequate for 54 NBs with probable congenital syphilis and/or exposure to HIV at the time of hospital discharge: schedule for appointment in the outpatient clinic of the study hospital, with data from examinations and treatments. Only 48 of them (88.9%) initiated follow-up in a specialized outpatient clinic: 43 of the 46 NBs exposed to HIV (93.5%) and 5 out of

Table 2. Distribution of pregnant women according to prenatal care and pregnancy outcome, Sao Paulo, Brazil, August 2006 to August 2007.

Prenatal location	Pregnant women with syphilis (n = 11)	Pregnant women with syphilis/HIV+ (n = 2)	HIV+ pregnant women (n = 43)	Total
External service	5	1	3	9
External service / study hospital	0	0	5	5
Study hospital	2	1	34	37
Did not undergo prenatal care	4*	0	1	5
Total	11	2	43	56
Pregnancy outcome	**Delivery**	**Miscarriage**	**Total**	
Pregnant women with syphilis	9**	2	11	
Pregnant women with syphilis and HIV	2	0	2	
Pregnant women with HIV	42	1***	43	
Total	53	3	56	

*2 cases of miscarriage; **2 stillbirths; ***Induced miscarriage due to anencephaly.

the 8 (62.5%) with congenital syphilis. Follow-up until diagnosis occurred for 44 children (3/5 with syphilis and 41/43 of those exposed to HIV); there was no VT of these conditions. Follow-up was not complete for 48 children (8.3%) who initiated follow-up, despite the routine of looking for absent ones. Two NBs with probable congenital syphilis presented with other conditions and, even though they were followed-up in specialized outpatient clinics of the hospital, they did not have specific follow-up to define congenital syphilis.

Referral for appointment for puerperal and/or post-miscarriage periods (counter-reference) was registered in medical records of all women with syphilis and/or infected with HIB, but only one (9%) of the 11 pregnant women with syphilis (including the two miscarriages), and 36/44 (81.8% of those infected with HIV had records of an appointment during the puerperal period.

The compulsory notification to the Hospital Center of Epidemiology (NHE), in the study hospital, was made for 66.7% of the pregnant women with syphilis and 97.8% of those infected with HIV (Table 3). Two notifications of syphilis during pregnancy (external prenatal) were late due to the request of the Health Surveillance Supervision (SUVIS) of the city, because of the notification of the exposed NB. Among the ten children born with probable congenital syphilis, one of them did not fulfill the notification criterion, five were properly notified, one of them was notified at the age of nine months old, and three were not notified. The proper notification of perinatal exposure to HIV was made for 41 of the 47 exposed children (87.2%).

The routines and the referral flow of the pregnant women, puerperal women and NBs were assessed by interviews with 22 health professionals (14 doctors and 8 nurses), who were selected in prenatal services (general, fetal medicine and pregnant women infected with HIV and syphilis), neonatal services and specialized outpatient clinic of Pediatric Infectious Diseases. The time of profession of the interviewees ranged from 2 months to 20 years old, and all of them reported knowing the routine of request of examinations for the pregnant woman (during prenatal care, at labor or curettage after miscarriage), the use of injectable AZT for prophylaxis of VT of HIV and referral of the puerperal woman to post-labor appointment. However, the referral routine and treatment of sexual partner of pregnant women with syphilis, as well as referral with a written record of pregnant women for labor, containing all of the necessary information, was only known by professionals in the prenatal service, who also look for and summon those women who abandon

Table 3. Distribution of notified cases to the Hospital Epidemiology Department according to infection, Sao Paulo, Brazil, August 2006 to August 2007.

Conditions/data	Pregnant women with syphilis+ (n = 13)		Congenital syphilis (live births) (n = 10)		HIV positive pregnant women ++ (n = 45)		Child exposed to HIV (n = 48)	
	n	%	n	%	n	%	n	%
Yes	6*	66.7	6	66.7	44	97.8	41	87.2
No	3	33.3	3	33.3	1	2.2	6	12.8
Does not apply	4**	-	1***	-	-	-	1****	-
Total	13	100	14	100	45	100	48	100

*2 pregnant women notified at prenatal care and 4 afterwards; **2 stillbirths and 2 miscarriages; ***The woman was properly trated; ****Miscarriage caused by anencephaly; + two coinfected ones; ++ two coinfected ones.

treatment. The search for serological tests performed at the admission to the Obstetric Center by women admitted for curettage after miscarriage (without prenatal follow-up in the study hospital) does not have a well-established routine.

In the neonatal unity, professionals knew about the routine of initiating prophylaxis with AZT early for the child exposed to HIV, and of requesting specific examinations for children with probable congenital syphilis. Referral after hospital discharge is more well-established for NBs exposed to HIV than congenital syphilis.

Professionals were able to estimate the number of pregnant women infected with HIV assisted/year and their exposed babies, besides the VT rate of HIV in the services; however, they ignored the number of pregnant women with syphilis and congenital syphilis.

The obligatoriness of notifying NHE about HIV and syphilis cases (pregnant women and NBs) and the proper referral of such notifications are well-established for professional in specialized services to care for these women and their children; however, it is unknown by professionals in prenatal care. In the neonatal unity, the obligatoriness of notifying congenital syphilis is known, however, the notification of NBs exposed to HIV is not part of the routine.

DISCUSSION

Even though serology tests are daily conducted at the time of admission to the Obstetric Center for labor or curettage after miscarriage, their results could not be recovered for 8.2% of the pregnant women for syphilis, and 12.2% for HIV. The prevalence of HIV infection in the studied population, considering only pregnant women who were admitted for labor, was of 4.9% (45/919) and 4.0% (45/1115) when we consider pregnant women admitted for curettage after miscarriage. The prevalence of women with syphilis, calculated based on records of reactive non-treponemal tests, was of 2.6% (29/1115) considering only those who were admitted for labor. By analyzing the criteria used to define syphilis among pregnant women[12], these rates declined, to 1.2% (11/956) among pregnant women admitted for labor, and 1.1% (13/1115) when considering those admitted for labor and curettage after miscarriage. Among women who were admitted for curettage after miscarriage, the crude rate was of 1.91% (4/209), and the rate among women who fulfilled the criteria for syphilis during gestation[12] was of 1.0% (2/209).

These rates are higher than those found in previous studies, conducted by our group in a basic health unit in the city of São Paulo: 3.7%, in 2000, and 0.6%, in 2004, for HIV[13], and 0.2% for HIV and 0.9% for syphilis in 2005[14]; and in national sentinel studies conducted in 2004 and 2006: 0.4% for HIV infection and 1.6% for syphilis[15,16]. The high rates of pregnant women infected with HIV can be explained by the fact that the study hospital is reference for the follow-up of pregnant women with this infection.

Syphilis is in charge for high morbidity rates during gestation, thus resulting in negative outcomes in more than 50% of the cases, such as fetal loss (spontaneous miscarriage, fetal death), early neonatal death and late complications in live births[17,18], especially among untreated women. In this study, only 63.6% of the pregnant women with syphilis identified at the time of labor had undergone prenatal

care, and 4 out of the 13 (30.8%) gestations resulted in fetal death or miscarriage. The stillbirth rate was tem times higher among women who were diagnosed with syphilis, 15.4% (2/13), than for the rest of the population admitted for labor in the study hospital in the same period, 1.5% (14/960).

Besides the diagnosis of syphilis during pregnancy and its treatment, it is important that infected pregnant women be properly referred to labor, with the necessary information that can facilitate managing the infection for both mother and child, thus preventing duplicity of actions, excessive medication and unnecessary examinations. This information (reference) should be registered in a medical record and/or referral letter for labor or curettage after miscarriage. In the studied population, referral was incipient: only 57% (4/7) of pregnant women with syphilis were referred with proper and necessary information, and data on serology and treatment of sexual partner were only obtained for two women. In 2009, in Brazil, 75.5% of pregnant women with syphilis underwent prenatal care and, out of these, 55.4% were diagnosed with syphilis during gestations, and 53.7% of their partners were not treated[19].

Even in a university hospital, only half (3/6) of the pregnant women diagnosed with syphilis at the time of labor and/or admission for curettage after miscarriage were treated, because the results of serological tests were only known after hospital discharge for three women (one delivery, one stillbirth and one miscarriage). The missed opportunity to treat these three women and their NBs, besides showing the flawed organization and agility of the service, may result in new gestations with premature births or infected NBs, fetal losses and sequels for the untreated child. The lack and/or inadequacy of information concerning results of tests and treatment during prenatal care results in the treatment (often unnecessary) of the NB, who remains longer than necessary in the nursery, thus increasing hospital and social costs, leading to difficulties in breast feeding and increasing the risk of hospital infection.

The analysis of the studied population shows there is a major concern about prenatal care of women infected with HIV: 44/45 (97.8%) underwent prenatal care and, out of these, 97.7% presented for labor with adequate referral and records of all necessary data. Even the concern about syphilis among these women is higher than in the population of women who are not infected with HIV: proper referral (serological tests and treatment) was present for almost 57% of the women with syphilis and prenatal care, and for 97.6% of the women infected with HIV.

The high rate of miscarriages (2/13 = 15.4%) and stillbirths (2/13 = 15.4%) among pregnant women with syphilis in this sample is an alarming sign of how severe this infection can be during gestation. By considering neonatal death for a baby born from a woman with syphilis, there were 5 losses of gestational product among 13 pregnant women (28.4%), which demonstrates the large number of negative outcomes in complicated gestations with syphilis.

The evidence of progress in the VT control of HIV and the flaws in VT control of syphilis have been discussed in other national studies[20-25]: even though both of them constitute major public health issues, surveillance and control measures are more effective for HIV infection.

The routine to detect the infection (syphilis and HIV) among pregnant women, both in prenatal care and at the time of labor and puerperium, besides the need for specialized and multiprofessional follow-up for children exposed to these conditions, are well-established[26,27]; however, the control of congenital syphilis is below expectations. This study showed that despite

the proper counter-reference at hospital discharge for all NBs with congenital syphilis and exposed to HIV, the follow-up loss was much higher among NBs with congenital syphilis (5/7 = 71.4%) than among those exposed to HIV (3/46 = 6.5%).

Confirming the vertical transmission of the infection is faster for children exposed to HIV than syphilis[26,27]. The definition of HIV infection among children without clinical symptoms or immunosuppression demands expensive and complex laboratory methodology (RNA or DNA of HIV), however, it can be clear at the age of four months. The definition of asymptomatic congenital syphilis, however, requires easy and low cost serological tests (treponemal and non-treponemal tests), however, it can only be completed after a long-term follow-up period.

The inequities found for the control of both conditions was clear in interviews with health professionals that care for both mother and child. The referral of the NB exposed to HIV is known by all of the professionals (prenatal care, neonatal care and specialized outpatient clinic), but concerning the referral of the NB with probable congenital syphilis, there are doubts. There is integration between prenatal care and child care, involving the control and the convocation of absent patients for cases of HIV infection, but it does not work as efficiently for cases of syphilis.

The unawareness of professionals involved in the number of syphilis cases among pregnant women and congenital syphilis reveals how "invisible" this disease is, which had been previously observed[26]. The number of cases of pregnant women infected with HIV and the low VT of this infection is known by the health team, but cases of syphilis do not gain the same attention and visibility.

An interesting finding shown in interviews with health professionals, confirmed by the data collection of medical records, is the fact that women admitted for curettage after miscarriage received are discharged from the hospital before knowing the results for the serological tests of syphilis and HIV. The flow of search for results from the women themselves and the absence of communication between professionals do not make sure that the patient is followed-up, nor does it prevent negative outcomes for future gestations. Besides, it does not fulfill the recommendation of the Ministry of Health, which established pre and post-test counselling, in case serology for HIV is positive.

Disease notification should be opportune so that preventive and control action for diseases and conditions can be instituted effectively[27]. The opportune notification of pregnant women with syphilis, conducted by the neonatal service, occurred for 2/3 pregnant women (considering only the three ones that had prenatal care in HSP), and only one pregnant woman infected with HIV (2.2%) was not notified.

The notification of HIV exposure was conducted by the outpatient clinic service for 41/43 (95.4%) children who were followed-up; two of them weren't notified because follow-up was abandoned after the infection was established. The notification of 5/13 (38.5%) NBs with congenital syphilis was made by NHE due to the active search for cases in hospitalization units.

The study limitations include assessing secondary, retrospective data from medical records, record books from the Obstetric Center and records of results of laboratory examinations in two different systems. Despite the lack of clarity for some information referring the date of examinations, time and type of treatment, besides the explicit reference to the investigation, treatment of sexual partner and illegible letters, this can represent the real scenario of the flow of pregnant women with syphilis and HIV assisted in a university hospital. Even in a university hospital that is reference

for the treatment of pregnant women and children with infectious diseases, flaws keep occurring during follow-up. The referral of pregnant women infected with HIV, from neonatal care, and the counter-reference of both mother and child, after labor, has a known flow by professionals and by the women themselves, which ensures care with quality. However, for pregnant women with syphilis, the documents regarding examinations and treatment are insufficient, and professionals had doubts as to the proper procedures. Even the women ignore their rights as citizens so they can demand the adequate care. Health teams (prenatal care, Obstetric Center, neonatal service and post-birth follow-up) only communicate to care for the pregnant woman with HIV, which is not true for those with syphilis. When they are properly diagnosed, both the women and their babies are correctly treated and referred to. The notification by the NHE (of pregnant women and NB is better structured for HIV cases, however, it still presented flaws.

CONCLUSION AND RECOMMENDATIONS

Besides the efforts to identify and treat pregnant women with infectious diseases, it is essential that actions be more extensive, involving the referral of the pregnant woman for labor and of the mother and NB after hospital discharge. This will prevent the duplicity of actions, enable more proper assistance and decrease the risk of these events in future gestations. The continuous training of the multidisciplinary team should make sure that patients are referred to other services with sufficient information, which can subsidize the medical conduct, aiming to prevent VT, the consequences of these conditions and the negative outcomes in another possible gestation, thus meeting the principles of full care in health services and actions.

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Received on: 04/24/2013
Final version presented on: 01/28/2014
Accepted on: 05/09/2014