

SYPHILIS IN PREGNANCY, FACTORS ASSOCIATED WITH CONGENITAL SYPHILIS AND NEWBORN CONDITIONS AT BIRTH

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ABSTRACT

Objectives: to investigate factors associated with the occurrence of congenital syphilis in pregnant women with syphilis and to describe the cases of this disease regarding the justification for notification and aspects related to the newborn.

Method: cohort study, with data collection between July and September 2017 which included 158 pregnant women diagnosed with syphilis during pregnancy, reported between 2013 and 2015. The characteristics of pregnant women and newborns are presented descriptively. The outcome under study was the occurrence or not of congenital syphilis. Sociodemographic exposure variables related to prenatal care and the adequacy of maternal syphilis treatment were analyzed by the stepwise selection criteria, and those that presented $p < 0.20$, included in adjusted analysis, when critical $p < 0.05$ was adopted.

Results: most pregnant women with syphilis were white, had nine or more years of schooling and did not work. Among the participants, 74 (46.8%) had a newborn with congenital syphilis. Independently, the number of prenatal consultations was the only factor associated with congenital syphilis: as the number of consultations increased, the occurrence decreased ($p=0.013$, $OR=0.87$, $95\%CI=0.79-0.97$). The non-treatment of the mother and partner were the most frequent justifications for defining the case of congenital syphilis, and 33 newborns with syphilis presented complications at birth.

Conclusion: considering the association with the number of prenatal consultations, in order to reduce cases of congenital syphilis, the municipality should modify the follow-up in this period, offering consultations, developing health education actions, implementing diagnostic investigation and appropriate treatment for pregnant women, and partnership when necessary.

DESCRIPTORS: Syphilis. Congenital syphilis. Pregnancy. Risk factors. Longitudinal studies.

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SÍFILIS NA GESTAÇÃO, FATORES ASSOCIADOS À SÍFILIS CONGÊNITA E CONDIÇÕES DO RECÉM-NASCIDO AO NASCER

RESUMO

Objetivos: investigar, em gestantes com sífilis, fatores associados à ocorrência de sífilis congênita e descrever os casos dessa doença quanto à justificativa para notificação e aspectos relativos ao recém-nascido.

Método: estudo de coorte, com coleta de dados entre julho e setembro de 2017, incluiu 158 gestantes com sífilis na gestação, notificadas entre 2013 e 2015. As características das gestantes e recém-nascidos são apresentadas descritivamente. O desfecho em estudo foi ocorrência ou não de sífilis congênita. Variáveis de exposição sociodemográficas, relativas ao pré-natal e à adequação do tratamento da sífilis materna, foram analisadas pelo critério *stepwise* de seleção, e aquelas que apresentaram $p < 0,20$, incluídas em análise ajustada, quando se adotou p crítico $< 0,05$.

Resultados: a maioria das gestantes com sífilis era branca, tinha nove ou mais anos de escolaridade e não trabalhava. Entre as participantes, 74 (46,8%) tiveram recém-nascido com sífilis congênita. De modo independente, o número de consultas pré-natais foi o único fator associado à sífilis congênita: à medida que aumentou o número de consultas, diminuiu a ocorrência ($p = 0,013$, $OR = 0,87$, $IC95\% = 0,79-0,97$). O não tratamento da mãe e do parceiro foram as justificativas mais frequentes para definição do caso de sífilis congênita, e 33 recém-nascidos com sífilis apresentaram intercorrência ao nascer.

Conclusão: considerando a associação ao número de consultas pré-natal, para redução dos casos de sífilis congênita, o município deverá qualificar o seguimento nesse período, com oferta de consultas, desenvolvimento de ações de educação em saúde, implementação de investigação diagnóstica e de tratamento adequado para gestante, e parceria quando necessário.

DESCRITORES: Sífilis. Sífilis congênita. Gravidez. Fatores de risco. Estudos longitudinais.

SÍFILIS EN EL EMBARAZO, FACTORES ASOCIADOS CON LA SÍFILIS CONGÉNITA Y CONDICIONES DEL RECIÉN NACIDO AL NACIMIENTO

RESUMEN

Objetivos: investigar, en gestantes con sífilis, factores asociados a la ocurrencia de sífilis congénita y describir los casos de esta enfermedad en cuanto a la justificación de la notificación y aspectos relacionados con el recién nacido.

Método: estudio de cohorte, con recopilación de datos entre julio y septiembre de 2017 incluyó 158 gestantes con sífilis durante el embarazo, notificadas entre 2013 y 2015. Se presentan descriptivamente las características de gestantes y recién nacidos. El resultado en estudio fue la aparición o no de sífilis congénita. Las variables sociodemográficas de exposición, relacionadas con la atención prenatal y la adecuación del tratamiento de la sífilis materna, se analizaron mediante el criterio *stepwise* de selección escalonada, y las que presentaron $p < 0,20$, incluídas en el análisis ajustado, y cuando se adoptó una $p < 0,05$ crítica.

Resultados: la mayoría de las mujeres embarazadas con sífilis eran blancas, tenían nueve o más años de escolaridad y no trabajaban. Entre las participantes, 74 (46,8%) tenían un recién nacido con sífilis congénita. Independientemente, el número de consultas prenatales fue el único factor asociado con la sífilis congénita: a medida que aumentaba el número de consultas, la ocurrencia disminuía ($p = 0,013$, $OR = 0,87$, $IC 95\% = 0,79-0,97$). El no tratamiento de la madre y la pareja fueron las justificaciones más frecuentes para definir el caso de sífilis congénita, y 33 recién nacidos con sífilis presentaron complicaciones al nacer.

Conclusión: considerando la asociación con el número de consultas prenatales, para reducir los casos de sífilis congénita, el municipio debe habilitar el seguimiento en este período, ofreciendo consultas, desarrollando acciones de educación en salud, implementando investigaciones diagnósticas y tratamiento adecuado a la gestante, y alianzas cuando sea necesario.

DESCRIPTORES: Sífilis. Sífilis congénita. El embarazo. Factores de riesgo. Estudios longitudinales.

INTRODUCTION

Syphilis – a chronic bacterial infection caused by *Treponema pallidum* – is a generally endemic disease in low-income countries, whose rates are lower in middle- and high-income countries. It has individual and public health relevance, because, in addition to the direct morbidity and mortality it causes, an increase in the risk of HIV infection, and can cause lifelong morbidity in children born to infected mothers – including irreversible neurological and cardiovascular complications. Although it has long been known, its varied clinical manifestations and difficulty in interpreting its diagnostic tests and response to therapy make its control difficult¹.

In North America and Western Europe, the incidence of syphilis has increased dramatically in the last decade among men who have sex with men, particularly those with coexisting HIV infection¹. The United States of America, after reaching a historic minimum rate in 2000, has been showing a constant increase since then; however, with a decrease in mortality, possibly due to early detection and improved access to health services². In South America, an adverse situation is observed in Brazil, especially when congenital syphilis is considered. According to the World Health Organization (WHO), in 2015 there were 22,800 cases of congenital syphilis in 37 countries followed up in the Americas region, representing 1.7 cases per 1,000 live births. Moreover, the growing Brazilian rate influenced the regional rate, which has been stable since 2009 when this country was excluded³.

In 2016, 37,436 cases of syphilis were reported in pregnant women in Brazil, these cases were found in the Southeast (46.9%), followed by the Northeast regions (17.7%) and South (17.5%). In the same year, 20,474 cases of congenital syphilis were reported in Brazil, with an increase of 4.7% in the number of reports of vertical transmission, with an increase in the North (21.2%), South (13.8%) and Midwest (5.9%). Thus, the situation is worrying, even if part of this increase can be attributed to the fact that professionals are more aware regarding case notification⁴.

An American study conducted between 2012 and 2014, with the objective of identifying gaps in health systems regarding the management of congenital syphilis, found that 38.4% of pregnant women evolved to this outcome. Among the determinants, the late or incomplete onset of syphilis treatment during pregnancy and the adoption of risk behavior were highlighted⁵. In China, research has demonstrated the effectiveness of treatment with Penicillin G Benzathine at the appropriate dosage and before the 28th week of gestation⁶.

In Brazil, a study based on national hospital data included 23,894 puerperal women between 2011 and 2012, and found the following maternal factors associated with congenital syphilis: age between 20 and 34 years, brown skin color, incomplete elementary school, presence of a partner and absence of paid work. From an obstetric point of view, there was an association with late onset of prenatal care, inadequate number of consultations, non-performance of two serologies for syphilis during pregnancy, complications in pregnancy and prematurity⁷. In the Southeast region, in the state of Minas Gerais, a study found, in the same period, an association between congenital syphilis and teenage pregnancy, low maternal education, late onset and performance of less than six prenatal consultations, non-performance of the VDRL and title of the first and last VDRL equal to or greater than 1:8⁸.

Clinical manifestations in newborns with congenital syphilis are classified as early – when they appear up to 2 years of life and include, among others, jaundice, anemia, hepatosplenomegaly, bone changes; and late – clinical signs, olympic forehead, curved jaw, palate perforation, saddle nose and deafness, and, depending on the affected organ, may occur from 5 to 20 years of age⁹.

The increase in the number of cases of congenital syphilis today, the consequences of the disease not only at birth, but also throughout the life of affected individuals, the existence of diagnosis and treatment in public health services, are aspects that indicate the importance of adequately monitoring the reported cases, aiming to identify weaknesses which need to be faced in order to prevent this disease.

In view of the above, the objectives of the present study are: to investigate, factors associated with the occurrence of congenital syphilis in pregnant women with syphilis and to describe the cases of this disease regarding the justification for the diagnoses and aspects related to newborns.

METHOD

This is a cohort study conducted in Botucatu, a municipality located in the South-Central region of the state of São Paulo, Brazil, whose estimated population is 142,546 inhabitants¹⁰. It includes the Epidemiological Surveillance Group (GVE)¹⁶, with 29 other municipalities, with the detection rate of syphilis in pregnant women, in the region and in the municipality, of 20.7 per thousand live births in 2017; i.e., a value higher than that of the state of São Paulo: 17.3 per thousand live births. Regarding the incidence rate of congenital syphilis in the same year, in the region, it was 5.8 per thousand live births, and in Botucatu, 5.2 per thousand live births, values lower than those of the state of São Paulo: 6.6 per thousand live births¹¹.

The set of primary health care services related to pregnant women consists of 8 Traditional Units and 12 Family Health Strategy Units, all perform treatment against congenital syphilis. In relation to labor and delivery care, there are two maternity hospitals in the municipality, one being public – reference in the care of low risk delivery and high obstetric and neonatal risk – and one private hospital¹²⁻¹³.

The cohort consisted of 158 pregnant women with syphilis during pregnancy, notified from 2013, the year in which the flow of information and follow-up of cases was implemented by the Municipal Program of Sexually Transmitted Diseases and AIDS (PMDST/AIDS), in partnership with the Epidemiological Surveillance Service (VE) and the Health Care Network (RAS) of the municipality. The end of inclusion was established in the cohort in 2015, and the cases were followed up until the end of pregnancy (abortion or birth). In addition, children diagnosed with congenital syphilis were evaluated at 18 months of life to verify their serological status.

Data were collected between July and September 2017 from a database from the Botucatu Municipal DST/AIDS Program, created from the investigation forms, and from instruments which monitor the reported cases of syphilis during pregnancy, in which the date and results of tests and treatment performed are recorded and kept attached to the prenatal medical records.

The outcome variable refers to the presence of congenital syphilis (no, yes), identified from the compulsory notification of the case.

In order to investigate the factors associated with the occurrence of congenital syphilis, the exposure variables included the following data: maternal sociodemographic details – maternal age (continuous variable, in years), self-reported race/color (white, non-white), paid work (no, yes) and years of schooling (up to eight, nine or more); prenatal care – had prenatal care (no, yes), prenatal health primary (traditional, family health) and number of prenatal visits (continuous variable); and related to treatment – gestational age at treatment (continuous variable, in weeks) and title of nontreponemal examination related to the diagnosis during pregnancy (continuous variable).

Regarding the description of congenital syphilis cases, the variables under study were: justification for classifying the cases (partner did not treat or treated inadequately; mother did not treat, treated inadequately or late; symptomatic newborn; alteration in the CSF exam; absence of decrease in the titration of the mother; treatment not completed before 30 days before delivery; partner not treated together with the mother; newborn with titration greater than that of the mother); newborn complications identified at birth (jaundice, intrauterine growth restriction, anemia, low weight, cardiomegaly, coarctation of the aorta, splenomegaly, hepatomegaly, osteochondritis: no, yes); and treponemal test result at 18 months of life (reactive, non-reactive).

Regarding the evaluation of factors associated with the occurrence of congenital syphilis, a crude analysis was initially performed, considering the exposure variables and the outcome, using the stepwise criterion of variable selection from the Wald test. Those with $p < 0.20$ were included in a logistic regression model, and in the adjusted analysis, $p < 0.05$ was applied to consider an association between exposure and outcome, adopting a 95% Confidence Interval (CI). Regarding the analyses, a reference category was established, classified as the lowest risk for the outcome occurrence.

In the descriptive analysis, continuous variables are presented from the median value (minimum value–maximum value) and dichotomous variables, in the form of absolute and relative frequencies. All analyses were performed in the Software Statistical Package for the Social Sciences (SPSS) 21.0.

This study was approved by the Research Ethics Committee of the Botucatu School of Medicine and followed all requirements for research involving human beings.

RESULTS

Most of the pregnant women with syphilis were white, had nine or more years of schooling and performed unpaid work. Almost all of them had had prenatal care: 96.8% (Table 1).

Table 1 – Characteristics of women reported for having syphilis during pregnancy and included in the study. Botucatu, SP, Brazil, 2013-2017. (n=158)

Characteristics	Median (minimum-maximum)	
Age at birth (years)	21 (13 - 45)	
Gestational age at the beginning of treatment (weeks)	15 (4 - 42)	
Number of prenatal consultations	7 (0 - 17)	
Title of nontreponemal examination at diagnosis	16 (1 - 512)	
	n	%
Self-reported skin color		
Non-white	45	28.5
White	113	71.5
Schooling (years of approval)		
Up to eight	65	41.1
Nine or more	93	58.9
Paid work		
No	105	66.5
yes	53	33.5
Prenatal care		
No	5	3.2
yes	153	96.8
Prenatal site		
Traditional primary care	87	55.1
Primary family health care	71	44.9

Among the 158 pregnant women reported with syphilis, 74 cases (46.8%) of newborns were classified as congenital syphilis. Table 2 is related to the gross and adjusted analysis of sociodemographic characteristics, related to prenatal care and treatment and the occurrence of the disease.

Table 2 – Gross and adjusted analysis considering sociodemographic characteristics related to prenatal care and treatment and the occurrence of congenital syphilis. Botucatu, SP, Brazil, 2013-2017. (n=74)

Characteristics	Pregnant woman with congenital syphilis outcome					
			Gross Analysis		Adjusted Analysis	
	No n (%)	Yes n (%)	p*	Odds ratio [†] (CI95%)	p [†]	Odds ratio [†] (CI95%)
Maternal age			0.215	1.03 (0.98-1.08)		
Number of prenatal consultations			0.001	0.85 (0.78-0.94)	0.013	0.87 (0.79-0.97)
Gestational age in treatment			0.054	1.04 (0.99-1.08)	0.059	1.04 (0.99-1.08)
Result of nontreponemal examination			0.144	1.00 (0.99-1.00)	0.255	1.00 (0.99-1.00)
White color						
No	23(51.1)	22(48.9)	0.749	0.89 (0.44-1.78)		
Yes	61(54.0)	52(46.0)		1		
Schooling (years)						
Up to 8	29(45.3)	35(54.7)	0.089	0.57 (0.30-1.08)	0.143	0.58 (0.28-1.20)
9 or more	55(59.1)	38(40.9)		1		
Paid work						
No	55(52.4)	50(47.6)	0.910	0.91 (0.47-1.76)		
yes	29(54.7)	24(45.3)		1		
Prenatal consultation						
No	0(0.0)	5(100.0)	—	—		
Yes	84(54.9)	69(45.1)		1		
Prenatal Basic Health Unit						
Traditional	42(48.8)	44(51.2)	0.198	0.66 (0.35-1.24)	0.493	0.78 (0.38-1.58)
Family health	42(59.2)	29(40.8)		1		

*Wald's Test; † Logistic regression model

Years of schooling, number of prenatal consultations and prenatal care location, gestational age during treatment and result of the nontreponemal examination were the variables selected to be included in the adjusted analysis, due to the fact that they had a greater association with the occurrence of congenital syphilis ($p < 0.20$). Independently, the number of prenatal consultations was the only associated factor, protecting the occurrence of congenital syphilis: $p = 0.013$, $OR = 0.87$, $95\%CI = 0.79-0.97$. Thus, at each performed prenatal visit, the chance of progression to the disease decreased by 13% (Table 2).

Ninety-five justifications were presented for the classification of the 74 cases of congenital syphilis: partner (39.0%) or pregnant woman (17.9%) did not treat or treat adequately; alteration in the CSF test (10.5%); absence of decrease in the mother's titration (8.4%); symptomatic newborn (7.4%); negative fetal outcome by abortion or stillbirth (6.3%); partner not treat together with the mother (4.2%); treatment not finalized 30 days before delivery (3.2%); newborn with titration greater than that of the mother (2.1%); and neonatal death (1.0%) (data not shown in table).

Table 3 is related to the characteristics of newborns with congenital syphilis.

Among the 33 (44.6%) newborns who presented complications at birth, jaundice was the most frequent (28 cases, 66.6%). In addition, 65 children (87.8%) were had treponemal testing at birth and all were reagents; however, only two children (2.7%) maintained reactive treponemal test at 18 months of life (Table 3).

Regarding the two children mentioned above, in one of the cases the mother did not have prenatal care, neither the mother or the partner were adequately treated; a nontreponemal examination was taken upon delivery with a result of 1:64, a result similar to that of the newborn, who was born with jaundice, anemia and splenomegaly. In the second case, the mother had had one prenatal consultation, presented with a nontreponemal test result of 1:256 during pregnancy, treated late, maintained the same titration after delivery, while the newborn, who was born with jaundice, had a nontreponemal test result of 1:1024 at birth (data not shown in table).

Table 3 – Characteristics of newborns with congenital syphilis. Botucatu, SP, Brazil, 2013-2017. (n=74)

Variables	Nº.	%
Complications at birth		
Yes	33	44.6
No	41	55.4
Type of complication at birth (n=42)*		
Jaundice	28	66.6
Intrauterine growth restriction	4	9.5
Anemia	4	9.5
Low birth weight	1	2.4
Cardiomegaly	1	2.4
Coarctation of the aorta	1	2.4
Splenomegaly	1	2.4
Hepatomegaly	1	2.4
Osteochondritis	1	2.4
Treponemal test at birth		
Yes and positive	65	87.8
Not taken	9	12.2
Treponemal test result at 18 months		
Reagent	2	2.7
Non-reagent	72	97.3

*Admitted more than one answer.

DISCUSSION

In the present study, the number of prenatal consultations – regardless of schooling, the care model, gestational age at the beginning of treatment and the result of nontreponemal examination titration – protected pregnant women reported with syphilis from having a newborn diagnosed with congenital syphilis. Thus, in order to reduce the risk of vertical transmission of syphilis, the municipality should make efforts for women to start and maintain follow-up consultations during pregnancy. Considering the important performance of primary health care nurses in prenatal care, it is expected that these professionals can lead actions aimed at regular follow-up of pregnant women. Such actions should include, among others: reduction of the loss of opportunities for funding during care in the health unit and the active search of pregnant women in the community; provision of pregnancy tests at the prenatal follow-up site, with immediate results available; initial care at the time of diagnosis confirmation of pregnancy and guarantee follow up consultations; as well as openings for unscheduled consultations for pregnant woman.

The approach related to the appropriate number of prenatal consultations is complex and will be better explored.

In the first nationwide studies conducted in Brazil after the implementation of the Prenatal and Birth Humanization Program, published in the mid-2000s, with data stored in the Prenatal Information System (SISPRENATAL), syphilis was identified as an indicator of quality of this care. This verification occurred because it is a condition whose diagnosis and treatment are performed with low cost and no operational difficulty, since most laboratories have technology to perform the test. Contrary to what was expected, the number of cases of congenital syphilis was the same when compared to the group that performed prenatal care and the group that did not. Thus, these studies concluded that there was a need for a set of minimum procedures to be developed in prenatal follow-up consultations, including the number of six consultations as necessary¹⁴⁻¹⁵.

At the same time, concerned regarding the need to establish the basic component of prenatal care and the minimum number of consultations for its development globally, the WHO proposed a total of four prenatal consultations and a set of procedures to be developed, with the aim of improving the care given to pregnant women¹⁶.

This recommendation remained in force until 2016, when, upon recognizing the inadequacy of the basic components model, the WHO – as part of its normative work to support evidence-based policies and practices and recognizing that the positive experiences of women during prenatal care and childbirth may constitute the basis of a healthy experience of motherhood – presented the current recommendations, aimed at the improvement of prenatal care. Thus, it included the indication of the adoption of prenatal care models with at least eight follow-up consultations, in order to reduce perinatal mortality and improve the women's experience of care.¹⁷ As seven consultations was the average number found in this investigation, more than half of the pregnant women with syphilis did not reach the number of consultations currently recommended.

Therefore, the importance of indicating the early onset of prenatal follow-up to all pregnant women is assumed, since the protocol of consultations is well established and dependent on gestational age. Thus, periodic and continuous consultations are recommended, the first before the 12th week of pregnancy, 2 consultations in the second trimester and 5 in the 3rd trimester, with 30,34,36, 38 and 40 weeks¹⁷. These follow-up consultations also result in curing the pregnant women of syphilis, since the performance of non-treponemal tests are recommended on a monthly basis¹⁸. However, there are still challenges related to the recommended follow-up care, one of which is focused on the lack of knowledge of health professionals¹⁹.

Most of the pregnant women in this study, reported due to testing positive for syphilis during pregnancy, were white, had schooling (nine or more years) and did not perform paid work. All cases were reported by the public service and, considering that almost all of them reported having prenatal follow-up, the quality of this follow-up care should be reflected, especially since 74 cases evolved to congenital syphilis. A study conducted in Poland highlighted, among the main reasons for the occurrence of congenital syphilis, inadequate screening of pregnant women and/or the indicated treatment, a condition of approximately 8% of the cases analyzed²⁰.

Focusing on what determines the case definition, the relevance of occurrences in which the partner was not treated or was treated inappropriately is evidenced. Similar to the present study, research conducted in China described the importance of the partner in defining cases of congenital syphilis, highlighting its low frequency of testing, because such a condition puts women at risk of reinfection, even after the effective treatment of pregnant women²¹. In the state of Indiana in The United States of America, a study conducted in order to identify the social vulnerability of pregnant women with syphilis, pointed out that no partner was diagnosed before them, indicating little or no contact with health services²². In Brazil, a qualitative study conducted in Rio de Janeiro, involving mothers and fathers who had their children hospitalized due to CS, highlighted that only one partner performed the treatment²³. Thus, the challenge of involving the partner in the treatment of syphilis is evidenced as a way help prevent the disease.

Thus, these data contradict the guidelines for the control of syphilis during pregnancy, since there is indication of treatment of the sexual partner together with the pregnant woman, according to the clinical classification of the disease. It is also necessary to register the therapeutic regimen of the pregnant woman and the partner on the prenatal medical records²⁴.

It is known that the non-treatment of some partners is due to the fact that it is impossible for the pregnant women to contact them, given that it was not explored in the present study, since the notification form of congenital syphilis – data source of this research – allows only to indicate whether they were treated or not. It is also noteworthy that since 2017 the treatment of the mother's sexual partnership is not considered for the purpose of defining the case of congenital syphilis²⁵.

Regarding newborns, complications were frequent at birth, not including the possibility of identifying others in the future (late congenital syphilis). Among the cases, some conditions indicate severity, such as cardiomegaly, coarctation of the aorta and osteochondritis, for example.

An integrative literature review study, based on data from the period 2011-2016, demonstrated a high prevalence of vertical transmission of syphilis, and that the congenital form – not treated or inadequately treated - can cause early and late complications. Thus, it is concluded that it is important to adopt preventive measures, such as stimulating and facilitating early access to prenatal care and performing the recommended tests²⁶.

The high frequency of treponemal test sororeversion at 18 months of life of the child is highlighted. A cohort study conducted in Canada between 2005 and 2010 also found a high frequency of sororeversion, but much lower than that identified in this study. Among the 16 cases of congenital syphilis analyzed, 5 (31%) remained positive at 18 months, with early treatment of the mother, low titers (VDRL) upon delivery and early treatment of the newborn as possibly associated with sororeversion at 18 months²⁷.

The use of a secondary database was the main limitation of this study, since it restricted the possibility of analyzing the data collected in the routine of health services. However, as they were obtained in a specialized service, aimed at the follow-up of cases of sexually transmitted infection, it was possible to access several instruments – the notification form, the copy of the prenatal medical records and the specific follow-up form for syphilis during pregnancy –, which resulted in an adequate amount of important data which could be used.

Finally, it is emphasized that, although local in its scope, the fact that it is a cohort study, through the inclusion of all pregnant women diagnosed with syphilis in a period of 3 years and follow-up for 18 months, its validity in relation to previous studies, largely through a cross-sectional design is increased.

CONCLUSION

The inadequate and late treatment of the pregnant woman and the absence of treatment of the partner were identified among the main reasons why the newborn of the pregnant woman was diagnosed with congenital syphilis. The number of prenatal consultations was the only factor independently associated with the protection of the occurrence of the disease.

Considering that these aspects can be reversed through quality prenatal care, the municipality of this study should work to improve its care network and develop actions that ensure the continuity of prenatal follow-up, including the provision of consultations and the development of health education aimed at the treatment of pregnant women, aiming to contribute to the reduction of the number of cases of congenital syphilis.

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NOTES

ORIGIN OF THE ARTICLE

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CONFLICT OF INTEREST

There is no conflict of interest.

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