

**PROFILE OF
GESTATIONAL AND
CONGENITAL SYPHILIS
IN THE CITY OF
RIBEIRÃO PRETO - SP**

Bruna Galvão

Centro Universitário Barão de Mauá

Aidê Amábile Coelho dos Santos Gaspar

Centro Universitário Barão de Mauá

Daniela Taysa Rodrigues Pimentel

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



Abstract: This study aims to describe and analyze the profile of syphilis in pregnant women and congenital and its incidence in Ribeirão Preto. For this purpose, a descriptive, exploratory methodology with a quantitative approach was used. As a result, there was a drastic increase in the incidence of the two variables in the period from 2010 to 2019 related to the drop in the quality of prenatal care in the city.

Keywords: Incidence, syphilis in pregnant women, syphilis congenital.

INTRODUCTION

Sexually Transmitted Infections (STIs) are among the most common pathologies worldwide and, because they affect people's lives and health, they have become a public health problem. Among them, syphilis has been gaining prominence in recent decades.

According to the World Health Organization (WHO) there are 340 million cases of STIs worldwide per year, among which 12 million are syphilis (MAGALHÃES et al., 2011).

Historically, this disease became known in Europe at the end of the 15th century, and its rapid spread throughout the continent made it one of the main pests of the world. The origin of syphilis in the countries of America is still controversial, but it dates back to 1450, and in Brazil it is believed that it appeared after the arrival of Cabral (LINS, 2014).

According to Azulay (1998), from the 60s onwards there was a considerable increase in its incidence due to changes in human behavior conditioned by several factors such as: sexual freedom, partly due to the use of contraceptives, intensity of tourism, among others.

Syphilis is a chronic, systemic, curable and exclusive disease of humans. It is caused by a Gram-negative bacterium whose etiologic agent is *Treponema pallidum*.

Its transmission is predominantly sexual through intimate contact without a condom with an infected person, but it can be transplacentally transmitted from mother to fetus during pregnancy, contact of the newborn with maternal lesions during childbirth and breastfeeding or, more rarely, blood transfusion, which can produce, respectively, the acquired or congenital forms of the disease.

Both the acquired and the congenital form of the disease can present three stages: primary, secondary or tertiary. Primary syphilis occurs on average 10 to 21 days after the incubation period with the appearance of *Treponema* at the point of inoculation. It is characterized by an ulcerated, pink, usually single, painless lesion called a hard chancre. These lesions are usually located in the genital sites, but they can affect the anal and oral region. These are lesions that tend to heal spontaneously without leaving a scar (COSTA, 2016).

The secondary phase occurs around two months after the appearance of untreated hard chancre and is characterized by a tissue reaction to the presence of *Treponema* transmitted via hematogenous or lymphatic pathways. It has rounded or oval erythematous macules, isolated or confluent. In these phases, the greatest risk of transmission occurs (COSTA, 2016).

After varying latency periods, the clinical manifestations of tertiary syphilis may appear, such as: nodular, nodular-ulcerated lesions and gums that can affect the skin, organs, bones and, in the most severe cases, the neurological system (COSTA, 2016).

The congenital form of syphilis deserves attention in public policies due to the direct impact it has on the reproductive health of women and children, as it can cause infertility, complications in pregnancy and childbirth, fetal death, neonatal deaths and sick neonates (MOREIRA et al. 2017). Thus, in 1986,

congenital syphilis became a notifiable disease and, later, syphilis in pregnant women, thus recording more reliable data (BRASIL, 2019).

Syphilis during pregnancy is observed in a significant number of women and directly favors the occurrence of congenital syphilis. Data from the epidemiological bulletin of the Ministry of Health (MS) show that the number of reports of syphilis during pregnancy increases every year. In Brazil, in 2011, 14,321 cases of syphilis were reported during pregnancy, in 2015, 33,365 cases were reported and in 2018 this number was 62,599 cases, showing an increase of 337% in just 7 years (BRASIL, 2019).

Numerous evidences indicate that adequate prenatal care with assistance to this population is an important factor in reducing the incidence of congenital infections and maternal and child morbidity and mortality. For such outcomes to be avoided, it is necessary for women to be fully assisted according to all their needs in order to avoid compromising the fetus and the newborn (MAGALHÃES et al., 2011).

In this sense, it is evident the importance of knowing the characteristics of the syphilis epidemic and its aggravations together with the protocols of care for women, pregnant women and newborns so that adequate planning of health actions is carried out in order to improve promotion strategies, prevention, monitoring and even treatment of the disease in these periods.

GOAL

To describe and analyze the profile of gestational and congenital syphilis from 2010 to 2019 in the city of Ribeirão Preto - SP.

MATERIALS AND METHODS

This is a descriptive, exploratory study using a quantitative approach.

The study population consisted of 1105 pregnant women and 449 abortions, stillbirths or newborns diagnosed with syphilis from 2010 to 2019 in the city of Ribeirão Preto, São Paulo. To avoid notification delay errors, it was decided to analyze the data available until 2019, the last year in which complete data were available.

According to IBGE data, the estimated population in the last census carried out in 2010 in Ribeirão Preto was 604,682. It is estimated that this population has now exceeded 711,825 inhabitants (IBGE, 2011).

Data collection for the study took place from notifications of gestational and congenital syphilis from users residing in Ribeirão Preto - SP in the last 10 years. From these notifications, the data were analyzed, describing the epidemiological profile.

This collection resulted in two spreadsheets, one referring to the syphilis database in pregnant woman and another to the congenital syphilis database and that were notified in Ribeirão Preto in the period from 01/01/2009 to 12/31/2019. The date of data collection from the Notifiable Diseases Information System (SINAN) Net was 07/08/2020 at 9:00 am.

For the sample of gestational syphilis data, only pregnant women residing and who had prenatal care in Ribeirão Preto were used. For the identification of congenital syphilis, we used only children born in the municipality. Pregnant women and newborns not diagnosed or identified with the disease outside the period mentioned above were not part of the sample.

Data were stored in an electronic spreadsheet structured in Microsoft Excel software and presented in the form of tables and frequency distribution graphs, sequentially inserted into the Office Excel 2010 program using the double typing technique, followed by validation. After validation, the data were

transferred to the IBM-SPSS Program, version 22.0 for Windows (SPSS, Inc., Chicago, IL, USA). Simple frequency descriptive analyzes were performed and data were presented in tables and graphs.

Subsequently, these results were analyzed using government protocols and syphilis control plans, syphilis epidemiological bulletins and bibliographic references on the subject as a reference.

The ethical precepts of Resolution number 466 of 2012 were considered. It was not necessary to send the project to the ethics committee because it is secondary data publicly available from the notifications of congenital and gestational syphilis carried out in the city of Ribeirão Preto - SP, in 2010 to 2019.

RESULTS

Between 2010 and 2019, 1,105 cases of gestational syphilis detected in the first, second or third trimester of pregnancy and 449 cases of congenital syphilis were reported in the municipality of Ribeirão Preto, divided into births, abortions and stillbirths.

For analysis, data that were blank and data named ignored in the notification form were grouped into a single category.

Regarding the characterization of the study participants, all were of reproductive age and were sexually active. During this period, most of the notifications of gestational syphilis occurred in women aged between 20 and 34 years - 70%, followed by those aged less than or equal to 19 years - 16.6% and, finally, women in the age equal or over 35 years old - 12.7%, as shown in Table 1.

As for race/color, it was observed that of the total number of pregnant women notified, 39.6% were white, followed by 28.8% brown and 13.9% black. Considering brown and black, the percentage was 42.7%. It is noteworthy that 17.5% of the data were

ignored according to Table 1.

Regarding education, 48.3% of the notifications did not have this information. The most frequent schooling were elementary school 22.4% and high school 22.6% (Table 1).

As for the type of occupation, for 70% of the women this data was not available, 21% were housewives, 5.9% had some paid activity and 2.3% were students. The number of unemployed women or women who did not fit into the occupational categories was 0.7% (Table 1).

Maternal characteristic	Frequency (n)	Percentage (%)
Age categorized by age		
20 to 34 years	779	70,5%
Less than or equal to 19 years	183	16,6%
Greater than or equal to 35 years	140	12,7%
Ignored	3	0,3%
Breed		
White	438	39,6%
Brown	318	28,8%
Ignored	193	17,5%
Black	154	13,9%
Yellow	2	0,2%
Education		
Ignored	534	48,3%
Illiterate	5	0,5%
Elementary school	303	27,4%
High school	250	22,6%
University level	13	1,2%
Occupation		
Ignored	774	70,0%
Housemaid	233	21,1%
The person Works	65	5,9%
Student	25	2,3%
Chronic unemployed or unable to define	8	0,7%
Total	1105	100

Table 1 – Characterization of pregnant women reported with syphilis according to age, age group, race, education and occupation. Ribeirão Preto, 2010 to 2019.

There was an evolution in the number of cases of gestational syphilis in the period from 2010 to 2016, followed by a decrease in 2017 and again showing an increase in 2018 and 2019. 31 cases were reported in the municipality in 2010, increasing to 184 notifications in 2019. It appears then that the incidence rate of gestational syphilis increased practically 6 times in 9 years in the municipality of Ribeirão Preto, according to figure 1.

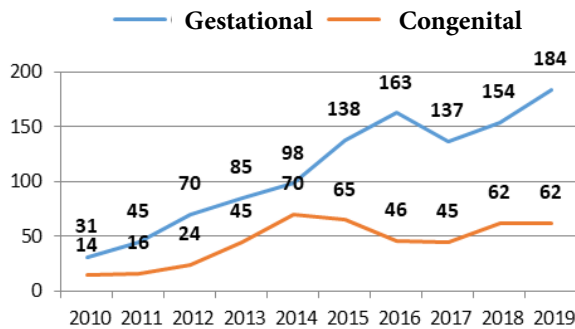


Figure 1 – Rate of detection of gestational and congenital syphilis according to year of diagnosis. Ribeirão Preto, 2010 to 2019.

According to the 2020 Epidemiological Bulletin (BRASIL, 2020), there is a growing increase in Brazil in syphilis rates in pregnant women between 2010 and 2019, from 3.5 cases per 1000 live births in 2010 to 20.8 cases per 1000 live births in 2019, reaching its peak in 2018 with 21.5 cases per 1000 live births. According to the same bulletin, the Southeast and South regions present higher detection rates than Brazil. Although the state of São Paulo is not among the states with the highest incidence of gestational syphilis, during this period the municipality of Ribeirão Preto, in some years, exceeds the national average.

When analyzing the gestational age of syphilis detection, it was observed that 54.3% of the women were diagnosed in the first trimester of pregnancy, 23% in the second trimester and 19.5% in the third trimester. Adding the second and third trimester, cases

reach 42.5% of notifications, according to Table 2.

Gestational age at which syphilis was detected	Frequency (n)	Percentage (%)
First quarter	600	54,3
Second quarter	254	23,0
Third quarter	216	19,5
Ignored	35	3,2
Total	1105	100

Table 2 – Gestational age women were at the time of diagnosis of syphilis. Ribeirão Preto, 2010 to 2019.

Regarding the clinical classification in the period in which the disease was discovered in pregnant women, it is noted that 57.9% of the notifications occurred when the disease was in the latency period, 13% of the notifications occurred in the primary phase of the disease, 11, 4% in the tertiary phase and 3.7% in the secondary phase. It was observed that for 13.9% of the pregnant women this information was ignored (Table 3).

Clinical classification	Frequency (n)	Percentage (%)
Latent	640	57,9
Ignored	154	13,9
Primary	144	13,0
Tertiary	126	11,4
Secondary	41	3,7
Total	1105	100

Table 3 – Clinical classification of syphilis in pregnant women in the period of notification of the disease. Ribeirão Preto, 2010 to 2019.

Regarding the concomitant treatment of the partner, it is noted that 48% did not receive any type of treatment for the disease and 38% received some type of treatment. For 15% this information was ignored (Figure 2).

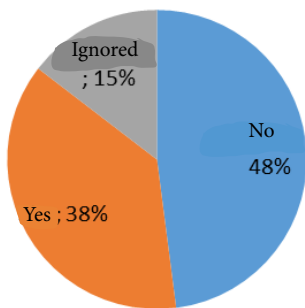


Figure 2 – Proportion of partners who were treated concomitantly with pregnant women diagnosed with syphilis. Ribeirão Preto, 2010 to 2019.

Regarding the reason for not treating the partner concomitantly with the pregnant woman diagnosed with syphilis, it was shown that 48.6% of them did not have this information filled in, 18% claimed another reason for not performing the treatment, 11.5% of the partners had their serology non-reactive, not needing any treatment, 10.5% had no further contact with the pregnant woman, 10.4% of them did not attend the health unit for the treatment or refused to treat and 1% of them were not communicated or summoned to the health unit for treatment, according to Table 5.

Comparing the detection rates of syphilis in pregnant women with the incidence rates of congenital syphilis in the city of Ribeirão Preto in the same period, it is observed that the number of notifications of congenital syphilis is lower than that of gestational syphilis, totaling 449 notifications according to the Figure 1.

Despite the numbers being lower than those of gestational syphilis, it is clear that there was an evolution of cases in the period from 2010 to 2014 with a 5-fold increase in its incidence. In the period from 2015 to 2017, the number of notifications falls again, but there is an increase in 2018 that remains in 2019, reaching almost the maximum peak of the last 10 years, which occurred in 2014, when 70 cases of the disease were reported in the municipality according to Figure 1.

Regarding the period in which maternal syphilis was diagnosed, 59.7% were diagnosed during prenatal care, 21.2% after delivery and 17.6% at the time of delivery or curettage. It must be noted that 1.3% of the notifications had the information at the time of diagnosis ignored and that 0.2% of notifications did not occur in any of these periods (Figure 3).

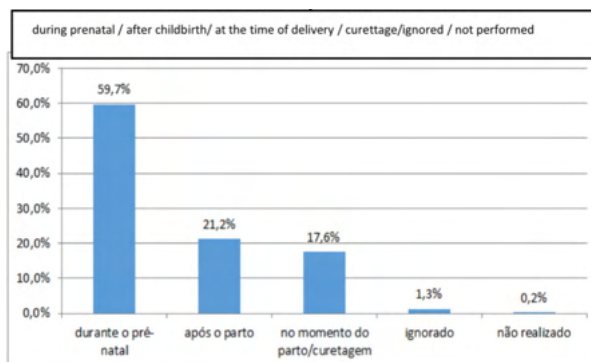


Figure 2 – Time of diagnosis of maternal syphilis. Ribeirão Preto, 2010 to 2019.

Regarding the treatment to which the pregnant woman was submitted after the diagnosis of syphilis, it is observed that 68% was considered inadequate and 22% of the

Reason for non-treatment of partner	Frequency (N)	Percentage (%)
Unfilled information	537	48,6
Other reason	199	18
Partner with non-reactive serology	127	11,5
Partner had no further contact with the pregnant woman	116	10,5
Partner was notified or summoned to the health facility for treatment, but failed to attend or refused treatment	115	10,4
Partner was not communicated or summoned to the health facility for treatment	11	1
Total	1105	100

Table 5 – Reason for non-treatment of the partner concomitantly with the pregnant woman diagnosed with syphilis. Ribeirão Preto, 2010 to 2019.

pregnant women did not undergo any type of treatment. Only 7% of these women received adequate treatment and 3% of the notifications had this information ignored, according to figure 4.

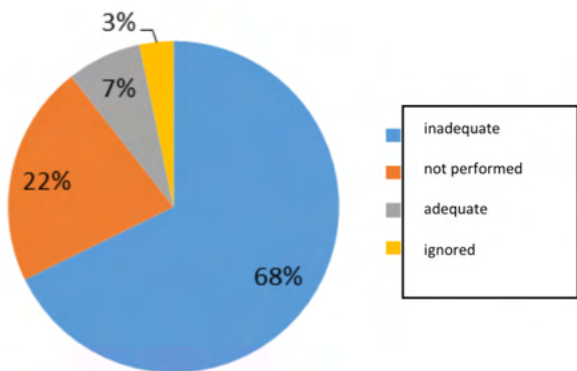


Figure 3 – Maternal treatment schedule for pregnant women who had their children/fetuses diagnosed with congenital syphilis. Ribeirão Preto, 2010 to 2019.

Regarding the place of birth of children diagnosed with congenital syphilis, it was observed that the Reference Center for Women's Health in Ribeirão Preto - MATER had the highest rate of these occurrences, with 39.4% of notifications. In second place comes the Hospital das Clínicas de Ribeirão Preto – HC with 25.4%, followed by 18.5% in Santa Casa, 5.8% in the Cidinha Bonini maternity – Unaerp and 5.8% in the Sinhá Junqueira maternity hospital. It was observed that 4.7% of the total notifications had this information ignored, according to figure 5.

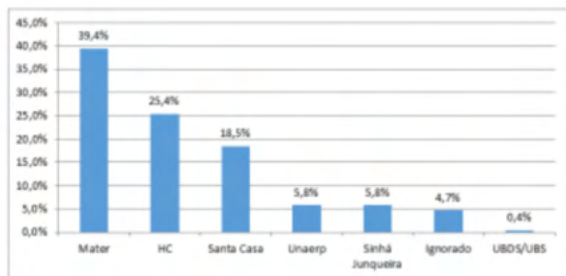


Figure 4 – Birth rate for congenital syphilis according to the health service. Ribeirão Preto, 2010 to 2019.

DISCUSSION

Regarding sociodemographic characteristics, it was observed that most pregnant women were between 20 and 34 years old and were brown or black, coinciding with the study by Padovani, Oliveira and Peloso (2018). Regarding education and occupation, studies show that most pregnant women have a low level of education and do not have a paid occupation (PADOVANI; OLIVEIRA; PELLOSO, 2018; NONATO; MELO; GUIMARÃES, 2015; DOMINGUES et al., 2013). However, it was not possible to correlate with this study since 48.3% of this information was not filled in, making this a limiting factor for this variable.

The incidence of syphilis during pregnancy in Ribeirão Preto has had a gradual and significant increase of practically 5 times in the last 9 years, with a percentage of 2.8% in 2010, rising to 16.7% in 2019. This increase is compatible with what was found in other studies (PADOVANI; OLIVEIRA; PELLOSO, 2018; DOMINGUES et al., 2013). The concern arises when comparing data from the municipality with national data, which point to a drop of 3.3% in the year 2019 (BRASIL, 2020).

This information demonstrates that further studies must be carried out in order to elucidate the causes of this increase, considering that this is a region with a high rate of human development and prenatal coverage. This information raises an even greater concern since most infected people are unaware that this is a sexually transmitted infection, which can contaminate their partner and, if pregnant, the baby through vertical transmission.

Among the cases of gestational syphilis, it is noteworthy that more than half of the notifications in the present study occurred in the first trimester of pregnancy, as in the study by Domingues et al., (2013). The clinical period of the disease at the time of diagnosis,

for most of these pregnant women, occurred in the latency period, with divergence from other studies in which most pregnant women received the diagnosis in the primary phase of the disease (DOMINGUES et al. 2013). This may demonstrate a failure in the programs for the promotion and prevention of Sexually Transmitted Infections and in women's health care in Ribeirão Preto.

As for the district with the highest notification of the disease, a gap was detected in this variable since practically half of this information was filled with ignored, however, the other half of the data revealed that, of the 5 districts that divide the municipality of Ribeirão Preto, The one with the highest number of notifications in this period was the North District, reinforcing the sociodemographic characteristics of this study in which the most vulnerable population consists of brown or black women aged between 20 and 34 years. It is important to note that the Southern District comes in second place in the number of notifications, demonstrating an increase among the population with better socioeconomic conditions, so it is pertinent that new studies are carried out in order to enrich this discussion.

Regarding the treatment regimen to which pregnant women with syphilis are submitted, it is known that, according to the protocol of the IST Aids State Program (IST/Aids State Program – SP), it depends on the period in which the disease is found. Appropriate treatment is done with the administration of benzathine penicillin G, intramuscularly, with a therapeutic regimen in total doses of 2,400UL for primary syphilis, 4,800UL for secondary or recent latent syphilis and 7,200UL for tertiary or late latent syphilis or of unknown duration (SAO PAUL, 2021).

The present study showed that almost 95% of pregnant women received one of these 3 treatments. In contapartida, almost 6% of these

women received any other type of treatment, suggesting that, despite having a high coverage of prenatal care in the municipality, many of them are not receiving treatment or are not being treated properly. It must be noted that benzathine penicillin G during pregnancy is the only medication capable of preventing vertical transmission and treating congenital syphilis.

The treatment prescribed to the partner is done in the same way as that of the pregnant woman, that is, according to the period in which syphilis is.

In this study, when comparing the treatment regimen prescribed to the partner, it is noted that a little more than half of them received one of the three treatments with benzathine penicillin G, and that almost 49% of them received another or no type of treatment. This non-exposure to treatment is also evidenced in the study by Padovani, Oliveira and Pelloso (2018). According to Nonato, Melo and Guimarães (2015), even though care protocols are established and the WHO recommends identifying and treating more than 80% of partners of pregnant women with syphilis with at least 1 dose of benzathine penicillin G, there is a difficulty in capture and adherence of these partners to the treatment of the disease, favoring the non-recurrence of this pregnant woman, which may also be happening in the city of Ribeirão Preto.

This study showed a failure to specify the reasons for not treating the partner, since practically half of the data were not completed. In addition, information such as: other reasons, non-reactive serology, had no more contact with the pregnant woman, did not attend the health unit, and refused to undergo treatment were the main responses present in the notification forms, as were also found in other studies (PADOVANI; OLIVEIRA; PELLOSO, 2018). It must be noted that there is a great risk of reinfection in the woman if

the partner is not treated concomitantly with her and properly.

Regarding congenital syphilis, the present study demonstrates that there has also been a gradual and expressive increase in its incidence in recent years in the municipality, reaching its peak in 2014, showing a decrease in 2015, 2016 and 2017, however, rising again in 2018. and 2019. According to the study, most children born with the disease are the daughters of mothers who had the diagnosis during pregnancy, corroborating data from Padovani, Oliveira and Pelloso (2018). Concern arises when comparing data from the municipality with data from the state of São Paulo and Brazil, since, unlike Ribeirão Preto, there was a drop in cases of congenital syphilis recorded in 2018 and 2019, respectively (SÃO PAULO, 2019; BRAZIL, 2021).

The present study also points out that almost 40% of the diagnoses of congenital syphilis were performed at childbirth, after delivery or curettage, demonstrating a much higher number than in the study by Padovani, Oliveira and Pelloso (2018). This information leads to questioning the quality and efficiency of prenatal care in the municipality and the type of treatment to which these pregnant women and their partners are being submitted.

As for the treatment regimen to which these pregnant women were submitted, who gave birth to babies with congenital syphilis, this study shows that most of them had their treatments considered inadequate or did not undergo any type of treatment, as in the study by Silva et al, (2019). A somewhat questionable number considering that prenatal coverage in Ribeirão Preto is high, which may suggest a low effectiveness of preventive actions against congenital syphilis in the municipality.

Like the pregnant woman, the data from this study show that most partners did not undergo any type of treatment or had this data ignored in the notification form, influencing

the possibility of new reinfections on the part of this pregnant woman and demonstrating a possible resistance to treatment on the part of the pregnant woman. of these partners as in the study by Silva et al., (2019). There needs to be an understanding of the importance of treating the partner concomitantly with the pregnant woman, both for the government, health professionals and the parents of these children in order to eradicate congenital syphilis in the municipality.

Regarding the health unit in which these mothers who gave birth to babies diagnosed with congenital syphilis performed their prenatal care, it is observed that most of this information was ignored in the notification forms, neglecting this variable and bringing a gap to this study. With this expressive amount of ignored data, this study suggests possible under-recording and misinformation of professionals who made these notification forms about the importance of data from SINAN notification forms. As a fundamental part of this scenario, health professionals must become aware of their performance and be responsible for the quality of care provided to this population with health promotion and disease prevention actions.

Regarding the place of birth or occurrence of abortion or stillbirth of these children diagnosed with congenital syphilis in the municipality during the related period, this study shows that practically 90% of deliveries took place in hospitals of the public network of the Unified Health System (SUS) suggesting that this population is more vulnerable and exposed to this type of infection, thus requiring more attention and innovative and differentiated strategies for greater coverage and adherence of these populations to STI prevention programs and control of gestational and congenital syphilis.

It was found in this study that most children had a favorable outcome in relation

to birth because they survived the disease, as in the study by Domingues et al., (2016), porém é possível constatar que para 5% o desfecho ocorreu de forma trágica com aborto, natimorto ou óbito o que é inaceitável pensando na facilidade do tratamento, na oferta da medicação sem custo pelo SUS e pelo fato de Ribeirão Preto ser uma região desenvolvida e apresentar cobertura de pré-natal.

CONCLUSION

The results of this study demonstrate that there is an urgency in decision-making regarding the above problem, since there was a drastic increase of more than 400% both in the incidence of syphilis in pregnant women and in the incidence of congenital syphilis in the city of Ribeirão Preto in the period of 2010 to 2019. Although this increase is proportional, it is not possible to say that the increase in congenital syphilis is fully correlated with the information acquired from the pregnant women's notification forms, as the database system is not interconnected and, for ethical reasons, is not it was possible to acquire the names of the patients involved in the research.

This work presented some limitations derived from the fact that the database system is not interconnected and also due to the absence of information from data that were not filled in by health professionals, or that had inconclusive answers, data that would be of great relevance. for carrying out strategies for disease control measures in the municipality. Among the variables that were not concluded are education, occupation, district with the highest notification of syphilis in pregnant women and the reason for not treating the partner both in the syphilis records in pregnant women and in the congenital syphilis records.

The analyzes showed that, according to the variables age, race and color of the pregnant women, in addition to the fact that 90% of

deliveries occur in the public SUS network, the population most vulnerable and susceptible to this type of infection in the municipality are brown or black women, in the age group of 20 to 34 years and with low socioeconomic level.

It was also found that most pregnant women diagnosed the disease in the first trimester of pregnancy, showing that they have started prenatal care early, however, the discovery of the disease occurred when it was already in its latency period, demonstrating a probable failure to promote women's health and STI prevention programs.

The study showed that most pregnant women diagnosed with syphilis received some treatment with benzathine penicillin G, however, points out that practically 40% of the diagnoses of congenital syphilis occurred only at the moment of delivery and that most of these mothers had their treatment considered inadequate, suggesting that prenatal care in the municipality has been losing its efficiency and quality. It was also found that practically half of the partners of these women did not receive any treatment for the disease, which may be directly related to the recurrence of pregnant women and the significant increase in cases of congenital syphilis.

In the scenario of this study, the importance of informative activities with health professionals is highlighted in order to significantly increase the completion of all information in the notification forms so that it is possible to diagnose failures in the system and, this way, plan new policies. public.

In addition, to reduce the prevalence of syphilis during pregnancy and, consequently, of congenital syphilis, it is essential that there are measures to expand the work of STI prevention and the promotion of women's health to this most vulnerable population, together with the increase in prenatal care. of the partner in order to make these people

aware of the importance of self-care and the risks of unsafe sexual practice.

In order to improve the quality of prenatal care in the municipality, it is necessary to involve a multidisciplinary team composed of trained professionals who focus on the early capture of pregnant women and their partners and who develop actions to promote and prevent health, sexual and reproductive orientation and periodically screen the couple for any signs of infection or reinfection.

REFERENCES

- AZULAY, D. R & AZUALY, M. M. Doenças Sexualmente Transmissíveis. In: SHECHTER, M. & MARANGONI, D.V. **Doenças Infecciosas: conduta diagnóstica e terapêutica**. 2.ed. Rio de Janeiro: Guanabara-Koogan, 1998.
- BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. **Boletim Epidemiológico Sífilis 2019**, Brasília: Ministério da saúde, 2019. Disponível em: <http://www.aids.gov.br/pt-br/pub/2019/boletim-epidemiologico-sifilis-2019> Acesso em: 26 mar. 2021.
- BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. **Boletim Epidemiológico Sífilis 2020**, Brasília: Ministério da saúde, 2020. Disponível em: <http://www.aids.gov.br/pt-br/pub/2020/boletim-sifilis-2020> Acesso em: 26 mar. 2021
- BRASIL.. Ministério da Saúde. **Indicadores e dados básicos da sífilis nos municípios brasileiros 2020**. Disponível em: <http://indicadoressifilis.aids.gov.br/> Acesso em: 26 mar. 2021
- COSTA, D. A. G. **Principais temas para provas de residência médica**. Infectologia. v. 2. São Paulo: Medcel, 2016.
- DOMINGUES, R. M. S. et al. Sífilis congênita: evento sentinela da qualidade da assistência pré-natal. **Rev. Saúde Pública**, v. 47, n. 1, p. 147-57, 2013.
- DOMINGUES, R. M. S. LEAL, M.C. A incidência de sífilis congênita e fatores associados à transmissão vertical da sífilis: dados do estudo Nascer no Brasil. **Rev. Saúde Pública**, v. 32, n. 6, p. 1-12, 2016.
- IBGE, 2017. Disponível em: <https://cidades.ibge.gov.br/brasil/sp/ribeirao-preto/panorama> Acesso em: 01 mar. 2020.
- IBGE, 2011. Disponível em: <https://www.ibge.gov.br/cidades-e-estados/sp/ribeirao-preto> Acesso em: 18 mar. 2020
- LINS, S. D. M. Epidemiologia da sífilis gestacional e congênita no extremo setentrional da Amazônia. 2014. 72 f. Tese de Mestrado – Programa de Pós-Graduação em Ciências da Saúde Universidade Federal de Roraima. Boa Vista, 2014. Disponível em: http://www.btdt.ufr.br/tde_arquivos/6/TDE-2014-07-14T120900Z-166/Publico/CynthiaDantasdeMacedoLins.pdf. Acesso em: 27 fev. 2020.
- MAGALHÃES, D. M. S.; KAWAGUCHI, I. A. L.; DIAS, A.; CALDERON, I. M. P. A sífilis na gestação e sua influência na morbimortalidade materno-infantil. **Comun. ciênc. saúde**, v. 22, sup. esp. 1, p. 43-54, 2011.
- MOREIRA, K. F. A. et al. Perfil dos casos notificados de sífilis congênita. **Cogitare Enferm**, v. 22, n. 2 e:48949, 2017.
- NONATO, S. M.; MELO, A. P. S; GUIMARÃES, M. D. C. Sífilis na gestação e fatores associados à sífilis congênita em Belo Horizonte-MG, 2010-2013. **Epidemiol. Serv. Saúde**, v. 24, n. 4, p. 681-694, out-dez 2015.
- PADOVANI, C.; OLIVEIRA R. R.; PELLOSO, S. M. Sífilis na gestação: associação das características maternas e perinatais em região sul do Brasil. **Rev. Latino-Am. Enfermagem**, v. 26, e. 3019, 2018.

SÃO PAULO, Secretaria do Estado de São Paulo. **Sobre o Programa Estadual DST/Aids: Princípios, Diretrizes e Valores**, 2021 Disponível em: <http://www.saude.sp.gov.br/centro-de-referencia-e-treinamento-dstaidsp/crt/sobre-o-programa-estadual-dstaidsp> Acesso em: 26 mar. 2021.

SÃO PAULO, Secretaria do Estado de São Paulo. **Estado de SP registra queda no número de casos de sífilis congênita**, 2019. Disponível em: <https://www.saopaulo.sp.gov.br/spnoticias/estado-de-sp-registra-queda-no-numero-de-casos-de-sifilis-congenita/> Acesso em: 26 mar. 2021.

DOMINGUES, R. M. S. et al. A incidência congênita e fatores associados a transmissão vertical da sífilis: dados do estudo Nascer no Brasil. **Rev. Saúde Pública**, v. 32, n. 6, 2016.

SILVA, I. M. D. *et. al.* Perfil epidemiológico da sífilis congênita. **Rev. de Enfermagem UFPE on line**, v. 13, p. 604-13, mar. 2019.