

Syphilis in pregnant women in Acre: an analysis of the period from 2015 to 2020

Sífilis em gestantes no Acre: uma análise do período compreendido entre 2015 a 2020

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ABSTRACT | OBJECTIVE: To describe cases of syphilis in pregnant women in the state of Acre from 2015 to 2020. **METHOD:** This is a descriptive ecological study using secondary data available on the website of the Information Department of the Unified Health System - DATASUS, tabulated from the TABNET whose variables used were: year of notification, level of education, age group, race/color, clinical classification, gestational age, and treatment regimen. **RESULTS:** 2443 cases were reported in the period, and most were aged between 20 and 29 years, 1146 (47%), with incomplete primary education 677 (28%) and brown race/color 1983 (81%). The disease had its highest peak in 2018, with the notification of 627 (26%) cases, showing a reduction from this year. As for the clinical classification, most were classified as primary syphilis 900 (37%), diagnosed in the 1st trimester of pregnancy 876 (36%). As for the treatment scheme used, the one without information in the system predominated 1891 (77.4%), and among the available data, penicillin was the antibiotic of choice 529 (21.7%). **CONCLUSION:** it was found that the cases of syphilis in Acre showed a reduction in the last year analyzed, which may be related to the low frequency of prenatal care due to the Covid-19 pandemic. Young women were affected and classified as primary syphilis in the 1st trimester of pregnancy.

KEYWORDS: Syphilis. Treponemal Infections. Pregnant. Notification of Diseases.

RESUMO | OBJETIVO: Descrever os casos de sífilis em gestantes no estado do Acre no período compreendido entre 2015 a 2020. **MÉTODO:** Estudo ecológico descritivo com a utilização de dados secundários disponíveis no site do Departamento de Informações do Sistema Único de Saúde - DATASUS, tabulados a partir do TABNET. As variáveis utilizadas foram: ano de notificação, grau de instrução, faixa etária, raça/cor, classificação clínica, idade gestacional e esquema de tratamento. **RESULTADOS:** Foram notificados 2443 casos no período. A maioria encontrava-se na faixa etária entre 20 a 29 anos, 1146 (47%), com ensino fundamental incompleto, 677 (28%), e raça/cor parda, 1983 (81%). A doença apresentou seu pico mais elevado no ano de 2018, com a notificação de 627 (26%) casos, e uma redução partir deste ano. A maior parte foi classificada como sífilis primária 900 (37%), diagnosticadas no 1º trimestre da gravidez 876 (36%). Quanto ao esquema de tratamento, 1891 (77,4%) estavam sem informação no sistema, e a penicilina foi o antibiótico de escolha de 529 (21,7%). **CONCLUSÃO:** Os casos de sífilis no Acre apresentaram redução no último ano analisado, o que pode estar relacionado a baixa frequência ao pré-natal, em decorrência da pandemia de Covid-19. Foram acometidas mulheres jovens e classificadas com sífilis primária no 1º trimestre da gravidez.

PALAVRAS-CHAVE: Sífilis. Infecções por treponemal. Gestantes. Notificação de Doenças.

Introduction

Syphilis is an infectious disease of systemic character and chronic evolution, subject to latency periods and flare-ups.¹ It is a bacterial disease caused by *Treponema Pallidum*, a gram-negative bacterium of the spirochete group, which can occur sexually or vertically and cause the acquired or congenital form of the disease.²

The vertical transmission of syphilis, called congenital syphilis, is one of the most relevant cases in public health today. However, its pre-eminence of transmission at a global level means that the contamination rates do not decline, despite implementing preventive and educational measures.³

According to data from the World Health Organization (WHO), approximately 1.5 million pregnant women are infected with syphilis every year, and most of them are not treated, leading to contamination of their children with adverse outcomes, such as neonatal death, low weight at birth and/or clinical evidence of infection.⁴

In Brazil, in 2019 alone, 152,915 cases of acquired syphilis were reported to the National System of Notifiable Diseases (SINAN); 61,127 cases of syphilis in pregnant women; 24,130 cases of congenital syphilis; and 173 deaths from congenital syphilis (mortality rate of 5.9/100,000 live births).⁵

Syphilis in pregnant women has been a disease of compulsory notification in Brazil since 2005, through ordinance no. 33/2005, and congenital syphilis since 1986, through ordinance no. 542/1986, thus becoming mandatory communication to the health authority when confirming the disease.⁶

It is noteworthy that among the factors considered determinants of risks associated with vertical transmission of the disease are: prenatal care started late, reduced number of consultations, failure to test for syphilis, or failure to treat sexual partners and the pregnant woman.⁷

In this sense, prevention of vertical transmission becomes a priority, through prenatal care, with

timely testing and treatment, in addition to partner treatment, as well as prophylactic treatment with a single dose of penicillin in all newborns born to mothers diagnosed with syphilis during pregnancy.^{6,8}

Thus, surveillance of syphilis during pregnancy and congenital syphilis must occur during care for women, which aims to identify cases to support prevention and control actions, monitor the epidemiological profile and its trends, monitor and evaluate the actions for its elimination.⁹

In Acre, there is a scarcity of studies on this topic, thus highlighting the need to carry out the study whose objective is to describe the cases of syphilis in pregnant women in Acre in the period between 2015 and 2020.

Method

This is a descriptive ecological study using secondary data extracted from the website of the SUS It Department - DATASUS, tabulated from TABNET using the "Epidemiological and Morbidity" data of the National System of Notifiable Diseases (SINAN NET), through the following steps: DATASUS: Access to information: Health Information (TABNET): Epidemiological and Morbidity → Syphilis in pregnant women.

For data collection, variables such as year of notification, education level, age group, race/color, clinical classification, gestational age, and treatment regimen were analyzed. The sample consisted of all reported syphilis cases in pregnant women and entered into the DATASUS platform from 2015 to 2020, totaling 2443 cases.

Data on reported syphilis cases in pregnant women on the DATASUS platform from 2015 to 2020 were included in the study, according to the study variables: year of notification, education level, age group, race/color, clinical classification, gestational age, and treatment regimen. None of the data was excluded. Data collection was carried out in March 2021.

Quantified data were presented in absolute and percentage frequency. In addition, they were shown in the form of tables and graphs according to the existing variables. To produce the graphics, the Microsoft Office Excel 2010 tool was used.

The work was not submitted to the Research Ethics Committee - CEP, as it is a study in secondary sources and does not fit within the CONEP/MS legislation, resolution of 466/2012.

Results

During the study period, 2443 cases of syphilis were reported in pregnant women in the state of Acre. The categorization of samples under the parameters of the year of notification, level of education, age group, and race/color are shown in table 1. Most were in the age group between 20 and 29 years 1146 (47%). As for the level of education, most had incomplete primary education 677 (28%), followed by complete secondary education 611 (25%), and when faced with the question of race/color, brown 1983 (81%) predominated.

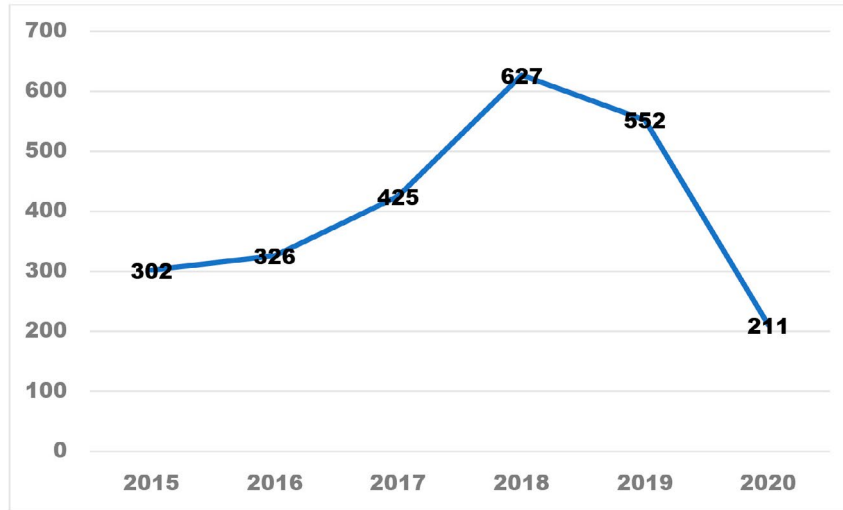
Table 1. Socio-demographic profile of pregnant women with syphilis in the state of Acre, from 2015 to 2020 (n=2443)

VARIABLE	N	%
Age Group		
10 to 14 years old	47	2.0
15 to 19 years old	811	33.0
20 to 29 years old	1146	47.0
30 to 39 years old	396	16.0
40 years or more	43	2.0
Schooling Degree		
illiterate	37	2.0
Incomplete Elementary School	677	28.0
Complete primary education	209	9.0
Incomplete high school	498	20.0
Complete high school	611	24.0
Incomplete Higher Education	98	4.0
Complete Higher Education	51	2.0
Ignored	37	11.0
Color/Race		
White	222	9.0
Black	110	5.0
Yellow	29	1.0
Brown	1983	81.0
Indigenous	56	2.0
Ignored	43	2.0

Source: DATASUS, 2021

Regarding the number of cases diagnosed per year, the disease in the state presented 627 notifications in 2018, showing a reduction in registered cases after this period.

Figure 1. Number of syphilis cases in pregnant women in the state of Acre, from 2015 to 2020 (n= 2443)



Source: DATASUS, 2021

Table 2 describes the clinical characteristics of the disease in pregnant women in Acre. It is observed that most were classified as primary syphilis with 900 (37%) of the cases, followed by latent syphilis with 858 (35%) of the cases. Most occurred in the 1st trimester of pregnancy 876 (36%) concerning gestational age at diagnosis. As for the treatment scheme used, there was a predominance of 1891 (77.4%) without information, and among the available data, penicillin was the antibiotic of choice with 529 (21.7%) of the cases.

Table 2. Clinical characteristics of syphilis in pregnant women in the state of Acre, from 2015 to 2020 (n= 2443)

VARIABLE	N	%
Clinical Classification		
Primary Syphilis	900	36.0
Secondary Syphilis	137	6.0
Tertiary Syphilis	283	12.0
Latent Syphilis	858	35.0
Ignored	265	11.0
Gestacional Age		
1st Quarter	876	36.0
2nd Quarter	774	32.0
3rd Quarter	765	31.0
Gestational age ignored	28	1.0
Treatment Schedule		
Penicillin	529	21.6
Other Scheme	4	0.2
Unrealized	12	0.5
Ignored	7	0.4
No Information	1891	77.4

Source: DATASUS, 2021

Discussion

Regarding the age groups found in this study, they corroborate the findings of Silva et al.¹⁰, in which there is a very similar result since a large part (49.67%) of the pregnant women diagnosed with syphilis were between 21 and 30 years old. Other studies with similar results are the ones by Marques et al.¹¹, in which 74.9% were between 20 and 39 years old.

Concerning education, the study by Cavalcante, Pereira, and Castro¹², carried out in the Tocantins, observed that 76% of pregnant women with syphilis had education between incomplete elementary school and complete high school similar to the 82% found in the present study. Marques et al.¹¹ justify this finding because women with low education have difficult access to information about the disease and greater difficulty in performing prenatal care.

About education, the study by Cavalcante, Pereira, and Castro¹², carried out in Tocantins, observed that 76% of pregnant women with syphilis had education between incomplete elementary school and complete high school, a result similar to the 82% found in the present study. This finding can be explained by the fact that women with low education have more difficulty accessing information about the disease and having prenatal care.

Furthermore, with regard to self-reported race/color, in the study by Marques et al.¹¹, 80.3% of pregnant women diagnosed with syphilis declared themselves brown, a result similar to the present study. Brown and black women face difficulties with health care, given that they are victims of inequality in access to adequate prenatal care, so they have fewer appointments and exams, in addition to being less linked to maternity hospitals, delivery, and receive less guidance.¹³

With regard to the number of cases notified per year, it was observed that from 2015 onwards, there began to be an increase in the number of notifications of syphilis cases throughout the studied historical series. This fact can be attributed to several factors, such as a decrease in the number of underreports and, consequently, an increase in notifications and epidemiological surveillance actions aimed at a better approach and identification of cases of the disease in the city.¹⁴

However, attention is drawn to a significant reduction in 2020, which may be related to the fact that the country is in a Covid-19 pandemic, which may justify the lack of attendance at prenatal consultations and consequently the lack of notification of the disease. Corroborating the findings of this research, an exploratory study on the incidence rates of syphilis and gonorrhea during the Covid-19 pandemic carried out in Cuba showed that after confirming the disease

and implementing social confinement measures, the incidence rates of syphilis and gonorrhea decreased significantly.¹⁵

Thus, a study carried out in a sexually transmitted infections (STI) treatment unit, the San Gallicano Dermatological Institute, in Rome, also showed that since the beginning of the lockdown, there was a reduction in STI diagnoses, mainly of syphilis. Thus, the fear of SARS-CoV-2 infection may have reduced sexual encounters and led to a decline in syphilis infections. However, the possibility of contamination cannot be excluded due to not looking for health facilities for diagnosis and treatment.¹⁶

Thus, the limitation of outpatient consultations and hospital screening services due to social isolation measures resulting from the pandemic may have favored the circulation of syphilis and delayed diagnosis and adequate treatment. However, a false sense of protection and social containment generated by blocking measures can underestimate the community's circulation of sexually transmitted diseases. In particular, the diagnosis of syphilis requires an expert eye and a high level of suspicion, as is characteristic of dermatological field practice.¹⁷

Following the findings shown in table 2 regarding the clinical classification of syphilis, a study carried out in Bahia showed that primary syphilis was also the most reported in the region. However, the records showed that, on average, just over 32% of cases in this state, the clinical stage of the disease was not reported.¹⁸

It is also noteworthy that the primary type of gestational syphilis is the most registered in most Brazilian regions, favors a good response to treatment if properly and early instituted. However, the limited access to the recommended therapy, penicillin G. benzathine, being the only one with high efficacy for gestational syphilis, as well as the non-adherence or discontinuity on the part of the patient, prevents these cases from actually progressing with a good prognosis, and predisposes to a higher risk of vertical transmission and several unfavorable outcomes.^{17,19}

In Brazil, it is recommended to request serological tests to detect the disease in pregnant women in the prenatal period, in the 1st and third trimester for the prevention of diseases and institution of appropriate treatment as soon as possible, in order to prevent

transmission to the fetus, in addition, new tests must be performed before delivery.²⁰

However, in an investigation carried out, 27% of the pregnant women who did not undergo the treatment claimed that the non-treponemal VDRL test was only positive in the second exam, on the eve of admission to the maternity hospital.²¹ That type of situation adds to the fact that pregnant women do not attend prenatal care, and the deficiencies are still present in maternal-fetal care.²²

Concerning the pregnancy period in which gestational syphilis was diagnosed, Conceição et al.²³ identified that 46.3% of the diagnosis took place in the 3rd trimester of pregnancy in the city of Caxias. On the other hand, in the study by Souza et al.¹⁸, 33% of the notifications occurred in the 2nd trimester and 32% in the third trimester, which may negatively contribute to the increase in cases of congenital syphilis, given the time taken to detect the disease and late treatment initiation.

In addition, benzylpenicillin is available for the pharmacological treatment of gestational syphilis, varying the dose and duration indicated according to the clinical classification of the disease. This drug has low cost and high efficacy if correctly applied; however, there was a shortage of raw material of this drug in Brazil, a factor that may be directly related to treatment failure and the maintenance and progression of the disease.^{11,24}

In this sense, it is worth noting that there is a persistence of therapeutic indication not consistent with what is established as the best efficacy factor and possible cure for the disease, as Miranda et al.²⁰ demonstrated in a survey that about 38% of patients in the Federal District and 54% in Rio de Janeiro received other drug therapy other than benzathine penicillin and had successful treatment.

This study had some limitations that deserve to be mentioned regarding the use of secondary data, which do not allow the researcher to control possible errors arising from typing and registration, in addition to possible underreporting. Despite this, it is believed that, as it is official national data and mandatory in

the health service, the data collected allowed the achievement of the objectives proposed in this study.

Conclusion

The present study's findings showed that gestational syphilis is a serious public health problem in the state, as there was a significant number of notifications of the disease in the study period, with a downward trend last year. That may relate to the Covid 19 pandemic that devastates the country and might be leading to low adherence to prenatal care and, consequently, fewer diagnoses and notifications of the disease.

Most cases occurred in young pregnant women with incomplete primary education and of mixed race/color. As for the clinical classification, most were classified as primary syphilis and in pregnant women in the 1st trimester of pregnancy, and penicillin was the antibiotic of choice for treatment.

In this sense, given the relevance of the findings, the need for improvements in prenatal care is reinforced for better adherence of pregnant women and better performance in the face of the problem.

Author contributions

Cavalcante GS, Paula MDNA, Nascimento NS, Conceição MS, and Souza CWS participated in the conception, design, research data collection, interpretation, data search and analysis, and writing of the scientific article. Costa RSL participated in the conception, design, project submission to the Ethics and Research Committee, data interpretation, search and analysis of research data, interpretation of results, and scientific article writing.

Conflict of interests

No financial, legal, or political conflicts involving third parties (government, companies, and private foundations, etc.) have been declared for any aspect of the submitted work (including, but not limited to grants and funding, advisory board participation, study design, preparation manuscript, statistical analysis, etc.).

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