

## CASE REPORT

# SYPHILIS IN PREGNANCY AND TRANSMISSION: EPIDEMIOLOGICAL PROFILE

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## ABSTRACT

**INTRODUCTION:** Syphilis is a disease caused by the bacterium *Treponema Pallidum*. In pregnant women, if the disease is not diagnosed and adequately treated, it can reach the fetus, contaminating it and causing repercussions on fetal development. This hematogenous spread is called congenital syphilis. Maternal-fetal transmission occurs more frequently with pregnant women with primary and secondary syphilis.

**OBJECTIVES:** To identify the growth rate of Syphilis in the period from 2017 to 2019.

**METHODS:** Retrospective cross-sectional study

**RESULTS:** In the present study, we found 188 patients reported with syphilis between the years 2017 to 2019, these patients were aged between 15 and 43 years, with a mean  $24.6 \pm 5.9$  years. The number of syphilis cases between the years 2017 to 2019 grew by 85%. Despite this high growth, it was not statistically significant;  $p = 0.411$ . In the present study, 73.4% of pregnant women with syphilis were brown, 1.6% were black and 7.4% were white. Of the notified patients, 82.3% live in an urban area, 60.6% are single and 47.9% have had prenatal care, 34.6% of the notified pregnant women were in the 3rd trimester. There was no information on the use of alcohol, smoking and drugs to be studied. Regarding the clinical classification, 18.6% were found in primary syphilis and 6.9% in latent syphilis. 78.7% of patients had a reagent treponemic test. 38.3% of pregnant women had VDRL  $\geq 1/8$ . The diagnosis of congenital syphilis was found in 34.6% of cases, abortion in 9% of cases and fetal death in 8% of the entire sample. On the treatment of pregnant women: Penicillin 2.4 million in 17.6%, Penicillin 4.8 million in 27.1% and Penicillin 7.2 million in 12.2%. 7.4% of patients received another treatment regimen, therefore, it is considered inappropriate treatment. Regarding the treatment of the partner, only 12.8% of the partners were proven to be treated.

**CONCLUSION:** Of the patients notified in the HMDI, the majority were young (mean age 24.6 years), brown, single and living in an urban area. Regarding the period of pregnancy, 17 patients were in the first trimester, 5 patients in the second trimester and 65 patients in the third trimester. did prenatal care, there was no information about the presence or absence of prenatal care. The number of syphilis cases between the years 2017 to 2019 grew by 85%, 65 cases of congenital syphilis were diagnosed, 17 cases of abortion and 15 cases of fetal death. The treatment was carried out in 12.8% of the partners, 87.2% of the forms did not contain information about the treatment or not of the partners. 107 pregnant women received treatment with Penicillin G Benzatin.

**KEYWORDS:** SYPHILIS, PREGNANCY, TRANSMISSION.

## INTRODUCTION

Syphilis is a disease caused by the bacterium *Treponema Pallidum*. In pregnant women, if the disease is not diagnosed and adequately treated, it can reach the fetus, contaminating it and causing repercussions on fetal development. This hematogenous spread is called congenital syphilis. Maternal-fetal transmission occurs more frequently with pregnant women with primary and secondary syphilis.

Among vertical transmission diseases, syphilis is the one with the highest rates of contamination of the fetus during pregnancy. The prevention of congenital syphilis is done with early diagnosis and treatment during prenatal care. The late diagnosis of syphilis in pregnant women is consid-

ered a risk factor for congenital syphilis, because it can lead to delayed treatment or even failure to undergo treatment during pregnancy. It is known that the use of Penicillin is highly effective in preventing vertical transmission<sup>1</sup>.

According to the WHO, each year there are 2 million cases of syphilis in pregnant women, and of this total, 25% have not been treated or have not received adequate treatment, resulting in spontaneous or stillborn abortions. From the second week of gestational age, *Treponema pallidum* can infect the fetus and cause spontaneous abortion, as from the sixteenth week of gestation, the bacterium damages the placenta, umbilical cord and several fetal organs, causing prematurity, stillbirth and malformation in newborns<sup>2</sup>.

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Congenital syphilis includes newborns with clinical findings suggestive of the disease, abnormal laboratory tests, and babies born to pregnant women who have not started treatment with penicillin at least 30 days before delivery. When not properly treated during pregnancy, the rate of vertical transmission reaches 80%, causing abortions, premature births, low birth weight and neonatal death<sup>2</sup>.

Proper treatment of contaminated pregnant women prevents fetal contamination by bacteria, the partner must also receive treatment. Penicillin is the drug of choice in the treatment of syphilis, and has 98% effectiveness in preventing congenital syphilis, and acts positively in all trimesters of pregnancy. Penicillin is also effective in cases of latent syphilis, secondary and tertiary syphilis. Adequate prenatal care includes early diagnosis, treatment of the mother and partner, reducing cases of congenital syphilis and improving maternal and child health indicators. Diagnosis and treatment (early and appropriate) are then the most important factors for preventing congenital syphilis and other adverse pregnancy outcomes, such as abortions<sup>1,2</sup>.

Therefore, the objective of this study is to identify the growth rate of Syphilis in the period from 2017 to 2019 at Hospital Da Mulher e Maternidade Dona Íris.

**METHODS**

In order to achieve the objectives described in this work, a cross-sectional, descriptive retrospective study will be carried out in order to assess the prevalence of patients diagnosed with Syphilis in Pregnancy and Congenital Syphilis. The compulsory notification forms of the Ministry of Health of patients treated at Hospital da Mulher and at Maternidade Dona Íris (HMDI) between January 2017 and December 2019 will be investigated.

**Inclusion criteria**

- Notification forms for pregnant women attended from January 2017 to December 2019.

**Exclusion criteria**

- Notification forms before January 2017 and after December 2019.

The Excel program was used to build the database with the survey carried out in the research and later the SPSS program (Statistical Package for the Social) was used to analyze the clinical-pathological data and determine the prevalence.

The ethical aspects of the study are in accordance with CNS Resolution No. 466, of December 12, 2012 and CNS Resolution No. 510 of April 7, 2016 under the supervision of the Research Ethics Committee of the Hospital da Mulher e Maternidade Dona Iris, taking into account the benefits of research mainly in relation to the community.

**RESULTS**

In the present study, we found 188 patients notified with syphilis between the years 2017 to 2019, these patients ranged in age from 15 to 43 years, with a mean of

24.6 ± 5.9 years. The number of syphilis cases between the years 2017 to 2019 grew by 85%. Despite this high growth, it was not statistically significant; p = 0411.

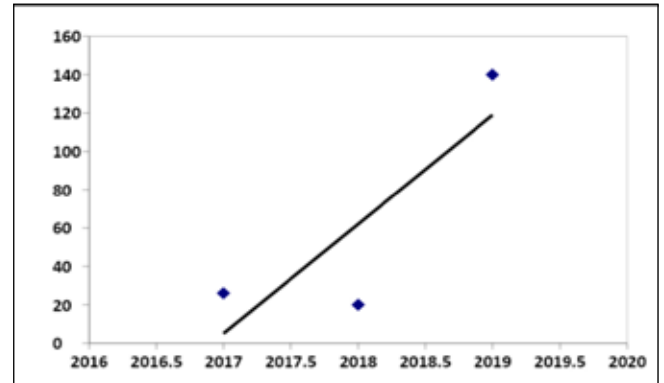


Figure 1. Number of syphilis cases reported at HMDI per year in the period from 2017 to 2019, Goiânia - GO.

Variable	Number of cases (n = 188)	
	N	
<b>Race</b>		
White	14	
Mulatto	138	
Brown	3	
Asian	2	
Indigenous	1	
No information	30	
<b>Zone</b>		
Urban	155	
Rural	6	
No information	27	
<b>Marital status</b>		
Single	114	
Married	37	
No information	37	
<b>Gestation period</b>		
1 <sup>st</sup> trimester	17	
2 <sup>nd</sup> trimester	5	
3 <sup>rd</sup> trimester	65	
No information	101	
<b>Did prenatal care</b>		
Yes	90	
No	7	
No information	91	
<b>Partner treatment</b>		
Yes	24	
No information	164	

Table 1 - Epidemiological profile of patients notified with syphilis between the years 2017 to 2019 at HMDI, Goiânia - GO.

Variable	Number of cases (n = 188)	
	n	
<b>Clinical Classification</b>		
Primary	35	
Latent	13	
No information	140	
<b>Treponemic Test</b>		
Reagent	148	
No information	40	
<b>Treatment Scheme</b>		
Penicillin 2.4 million	33	
Penicillin 4.8 million	51	
Penicillin 7.2 million	23	
Other schemes	14	
No information	67	
<b>Diagnosis</b>		
Congenital syphilis	65	
Abortion	17	
Fetal death	15	
No information	91	
<b>VDRL</b>		
< 1/8	81	
≥ 1/8	72	
Reagent	10	
Non-reagent	3	
No information	22	

Table 2 - Clinical profile of patients notified with syphilis between the years 2017 to 2019 at HMDI, Goiânia - GO.

In the present study, 73.4% of pregnant women with syphilis were brown, 1.6% were black and 7.4% were white. Of the notified patients, 82.3% live in an urban area, 60.6% are single and 47.9% have had prenatal care, 34.6% of the notified pregnant women were in the 3rd trimester. There was no information on the use of alcohol, smoking and drugs to be studied.

Regarding the clinical classification, 18.6% were found in primary syphilis and 6.9% in latent syphilis. 78.7% of patients had a reagent treponemic test. 38.3% of pregnant women had VDRL ≥ 1/8. The diagnosis of congenital syphilis was found in 34.6% of cases, abortion in 9% of cases and fetal death in 8% of the entire sample.

On the treatment of pregnant women: Penicillin 2.4 million in 17.6%, Penicillin 4.8 million in 27.1% and Penicillin 7.2 million in 12.2%. 7.4% of patients received another treatment regimen, therefore, it is considered inappropriate treatment. Regarding the treatment of the partner, only 12.8% of the partners were proven to be treated.

**DISCUSSION**

The highest rate of congenital syphilis is found in groups with low education, racial groups with low socioeconomic status (blacks and browns), young, single pregnant women, with multiple sexual partners, alcohol and drug use, and even a past history of domestic and sexual violence. It was also associated with the late start of pre-

natal care, fewer consultations and lower educational level of the pregnant woman, in addition to the greater chance of a vertical infection with syphilis and congenital syphilis. There was a lower prevalence of vertical transmission and congenital syphilis and adverse events to the newborn in the postpartum period in older pregnant women, who had a high level of education, . It was also observed that living in the countryside is another important risk factor for syphilis infection during pregnancy. These inequalities need to be reduced to limit the incidence of congenital syphilis<sup>3,4,5,6,7</sup>.

It is known that the treatment of the sexual partner is of vital importance. It is not considered adequate treatment for syphilis when only the pregnant woman undergoes treatment. When there is an early diagnosis associated with adequate treatment, there is a reduction in vertical transmission close to 97%. Unfortunately, it is observed that there is still a high rate of untreated partners. Of the reported cases of congenital syphilis, only 11% of the partners were treated. Health units must be well structured to receive and treat not only pregnant women, but also their sexual partners, reducing the possibility of reinfection and the rate of vertical transmission<sup>3,5</sup>.

Congenital syphilis can be defined as an indicator of the quality of prenatal care. In addition, the increased rates of vertical transmission serve as an alert and indicate opportunities for intervention that have not been realized. It reinforces that there were failures in the whole process of assistance to pregnant women. The occurrence of fetal death was six times higher among cases of congenital syphilis compared to those without syphilis infection<sup>3,5</sup>.

The health system is financially affected by the high rates of vertical transmission, because congenital syphilis is still an important cause of fetal losses, neonatal deaths, prematurity and serious health problems in surviving children. Newborns with congenital syphilis need a longer hospital stay, diagnostic tests such as lumbar puncture, radiological exams, laboratory tests, use of intravenous antibiotics for a long period (at least 10 days) and sometimes even hospitalizations in a neonatal ICU<sup>5,8</sup>.

The proportion of fetal deaths among cases of congenital syphilis is up to six times higher than that observed in newborns of women without a diagnosis of syphilis. To combat all of these neonatal complications, barriers to the diagnosis and treatment of syphilis must be addressed, and there is a real need for change in health care to overcome obstacles (demographic, cultural and socioeconomic) and offer a higher quality of health care pregnant women in order to reduce the rates of vertical transmission of syphilis. In Brazil, public health measures are still unable to reduce the rates of syphilis in pregnant women and the rate of congenital syphilis<sup>5,8</sup>.

The Ministry of Health has been adopting measures to reduce the contamination of syphilis during pregnancy and vertical transmission. However studies have shown that the number of pregnant women attended in low qual-

ity prenatal care (reaching 90%), did not identify syphilis in the pregnant woman early or had treatment failures is still high. The Rede Cegonha was created to increase the coverage of prenatal care, greater access to health care for patients with low socioeconomic status, availability of rapid test for syphilis and HIV in several health units, treatment with benzathine penicillin for pregnant women and their partners in primary care units and creation of vertical transmission investigation committees. All these measures are intended to reduce and eliminate syphilis in pregnant women and congenital syphilis, which are still a major public health problem in Brazil, especially in the most vulnerable regions, which are most affected by syphilis infection<sup>5</sup>.

## CONCLUSION

Of the patients notified in the HMDI, the majority were young (mean age 24.6 years), mixed race, single and living in an urban area.

Regarding the period of pregnancy, 17 patients were in the first trimester, 5 patients in the second trimester and 65 patients in the third trimester. Did prenatal care. There was no information about the presence or absence of prenatal care.

The number of syphilis cases between the years 2017 to 2019 grew by 85%, 65 cases of congenital syphilis were diagnosed, 17 cases of abortion and 15 cases of fetal death.

The treatment was carried out in 12.8% of the partners, 87.2% of the forms did not contain information about the treatment or not of the partners. 107 pregnant women received treatment with Penicillin G Benzatin.

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