

## ANALYSIS OF THE INCIDENCE OF GESTATIONAL SYPHILIS IN THE STATE OF CEARÁ

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**Abstract:** Syphilis, caused by the bacteria *Treponema pallidum*, is a sexually transmitted disease that spreads quickly in the body after contact with mucous membranes or skin. Transmission can occur in up to 80% of cases when the mother is infected. The objective was to analyze the incidence of gestational syphilis in the State of Ceará. This research is a narrative bibliographical review and took place from August to November 2023 through medical books, scientific articles and an epidemiological bulletin. The bibliographic research was carried out in the Scielo, Lilacs and Bireme databases and had the following descriptors: syphilis, gestational and Ceará. The inclusion criteria took into consideration, articles published in the last 5 years in English, Portuguese and Spanish, complete and free, original, clinical cases and cross-sectional studies. Incomplete articles published before 2016, monographs, conference proceedings, review articles and master's and doctoral dissertation theses were excluded. Thus, of the 1210 found, 13 were included in the sample, given their relevance to the topic. The results showed that in Brazil, between 2005 and June 2022, there were more than 535 thousand cases of syphilis in pregnant women, with the majority in the age group of 20 to 29 years. The Southeast region had the highest incidence. Effective treatment, including administration of penicillin in the first trimester, is essential. However, there are challenges, such as high treatment dropout rates and lack of information. It appears from the study that it is essential to improve education about syphilis, promote testing during prenatal care and involve nurses in guiding pregnant women and caring for newborns with congenital syphilis. Furthermore, more effective public policies and well-equipped health structures are needed to combat this public health issue.

**Keywords:** Syphilis, gestational, Ceará.

## INTRODUCTION

Syphilis is caused by *Treponema pallidum* (*T. pallidum*), a spirochete-type bacterium that cannot survive long outside the human body. In sexually acquired syphilis, *T. pallidum* enters through the mucous membranes or skin, reaches regional lymph nodes within a few hours and quickly spreads throughout the body. The infection is transmitted through sexual contact (genital, urogenital and anogenital) and non-sexually through cutaneous or transplacental contact, causing congenital syphilis.

Syphilis in general has a risk of transmission of approximately 30% in just a single sexual encounter with a person with primary syphilis; and, in approximately 60 to 80%, the risk of an infected mother spreading it to the fetus; It is important to clarify that the existence of previous infection does not confer immunity against reinfection (MORRIS, 2023).

Entering the topic of gestational syphilis, it is a manifestation of syphilis in pregnant women and that this population represents a significant challenge for global public health that if not treated appropriately and timely, this pathology can result in serious consequences for both the mother and the fetus. Such complications can be neurological, prematurity of the fetus and even miscarriage.

In terms of health surveillance, syphilis is a condition that requires mandatory notification at the national level. In the Brazilian context, syphilis transmitted from mother to child has been a notifiable event since 1986. While acquired syphilis began to be notified in 2010 (LIMA, 2018). In relation to pregnant women, the notification process began in 2005, as can be seen from the content of Ministry of Health Ordinance No. 33, dated July 14, 2005.

Given this, the importance of effective treatment during the gestational period cannot be underestimated, as treatment, in addition to preserving the health of the pregnant

woman, is crucial to ensuring a healthy birth, contributing to the promotion of the child's well-being, throughout their childhood and adult life, even preventing the spread of this disease. (SOARES & AQUINO, 2021).

This concern reached different organizational levels in different structures, the most notable being the World Health Organization (WHO), which launched, in 2007, an initiative to eliminate the transmission of syphilis and aimed, among other objectives, at increasing access to pregnant women to testing and treatment. This would provide a greater number of pregnant women covered for a greater range of health.

Furthermore, the effective control of syphilis depends on public policies and the commitment of managers to put into practice actions aimed at the quality of care provided to pregnant women, together with their sexual partners, during Prenatal Care (PN). Furthermore, it is important to raise awareness among the community and health professionals regarding the importance of early diagnosis, as well as effective treatment for pregnant women and their partners. (PADOVANI et al, 2018).

Given the impact of syphilis on public health and the increase in the number of cases, the relevance of this issue becomes increasingly greater. Therefore, it is extremely important that the public authorities in its three federative entities (Union, States and municipalities) know the reality of the disease in their population so that prevention and control actions can be adopted.

Thus, aiming to improve the study, we sought the geographic prevalence of the disease's distribution and the incidence of syphilis in the State of Ceará, during the period 2016-2023. To this end, the study was systematized, extracting data from the epidemiological bulletin and medical science literature on the geographic prevalence of the

disease's distribution in the State of Ceará, also mentioning the incidence in the municipality of Canindé/CE.

## METHODOLOGY

This research is a narrative bibliographical review and took place from August to November 2023 through medical books, scientific articles and epidemiological bulletins. The bibliographic research was carried out in the Scielo, Lilacs and Bireme databases and had the following descriptors: syphilis, gestational and Ceará. The inclusion criteria took into consideration, articles published in the last 5 years in English, Portuguese and Spanish, complete and free, original, clinical cases and cross-sectional studies. Incomplete articles published before 2016, monographs, conference proceedings, review articles and master's and doctoral dissertation theses were excluded. Thus, of the 1210 found, 15 were included in the sample, given their relevance to the topic.

## RESULTS AND DISCUSSION

From the epidemiological bulletin, it is clear that in Brazil, in the period from 2005 to June 2022, 535,034 cases of syphilis in pregnant women were reported in the Notifiable Diseases Information System (SINAN), of which 45.3% were residents of the Southeast region, that is, approximately 242,370 cases; 21.4% in the Northeast region, in around 114,497 cases; 14.6% in the South region, around 78,115 cases; 10.3% in the North region, close to 55,109 cases; and 8.4% in the Central-West region, around 44,943 cases.

Regarding the cases of pregnant women reported with syphilis, it was identified that the majority are in the age group of 20 to 29 years old, reaching a percentage of 58.1% of all cases, with emphasis on those aged 10 to 19 years old, classified such as adolescents,

who reached 22.3% of cases in 2021, according to extraction from the 2022 syphilis epidemiological bulletin.

Regarding education, the percentage of ignored data has remained at around 27.0% since 2018, hampering the analysis of cases. In 2021, among cases with known education, 28.5% had incomplete primary education, 34.4% had completed at least primary education and 32.7% secondary education. Regarding the race/color criterion, it was identified that, in 2021, 53.3% of pregnant women diagnosed with syphilis were brown, 27.0% white and 11.9% black.

Furthermore, Ceará had a syphilis detection rate in pregnant women of 31 per 1000 live births. In 2020, there were 2515 cases of syphilis in pregnant women, representing a total of 3.4% of the number of cases of gestational syphilis in Brazil. (SYPHILIS EPIDEMIOLOGICAL BULLETIN, 2022).

In the epidemiological aspect, when analyzing data in Fortaleza in the years 2016 to 2018 of pregnant adolescents with syphilis and its repercussions for the unborn child, it was observed that the high occurrence of congenital syphilis in children of adolescents expresses the perception of the need for early treatment, still in the prenatal phase, in order to avoid contagion to the newborn.

In general, in public health. It is inferred that vertically transmitted diseases represent a significant challenge for public health, the most frequent of which are syphilis, toxoplasmosis and the Human Immunodeficiency Virus (HIV). For researcher Shibukawa (2021), knowing how to deal effectively with these situations is crucial to ensuring an adequate approach for both the pregnant woman and her partner in the treatment, aiming to interrupt the chain of transmission.

However, the literature points to evidence of high rates of abandonment of treatment and follow-up in health services. Therefore,

considering the possible complications for global health and development due to the interruption of specialized monitoring, investigating the reasons for abandoning health monitoring of babies from mothers with this type of aggravating factor in vertical transmission is crucial for defining strategies for health.

The diagnosis of gestational syphilis includes clinical and serological tests, and the same procedure is necessary for the fetus, in order to treat it more quickly or rule out the diagnosis of congenital syphilis. In this sense, Cifuentes (2022) reports that the act of preventing congenital syphilis aiming only at the treatment of gestational syphilis can generate failures, as this condition is difficult to diagnose in an asymptomatic newborn. Therefore, it is necessary to carry out double testing, both on the pregnant woman and the baby.

For Silva (2022), the most effective prenatal treatment measure is that used by primary care units, under guidance from the Brazilian Ministry of Health, which included the administration of penicillin to pregnant women with syphilis in the first trimester of pregnancy. This measure demonstrated the greatest cost-benefit potential due to its effectiveness in treatment.

In research carried out by Gomes (2021) with pregnant women in a Primary Health Care (PHC) unit in a municipality in Rio Grande do Sul, it was noticed that although pregnant women have knowledge about syphilis, they do not adopt prevention techniques, like condoms, when the partner is fixed, which already puts them and the fetus at risk:

The pregnant women investigated demonstrated limited knowledge about syphilis and gestational syphilis. They reported that prenatal guidance is superficial. They said that syphilis is transmitted sexually and expressed surprise about the

complications of the disease for the baby, highlighting their lack of knowledge about congenital syphilis. They cited condoms as a prevention method, but reported not using them when the partner is steady. They demonstrated limited knowledge about the interpretation of rapid tests, not mentioning the performance of the non-treponemal exam as a diagnostic and confirmatory method for the disease.

Thus, Gomes (2021) concluded that the gap identified by the limited knowledge of the pregnant women investigated about syphilis and the prevention of gestational syphilis can be filled by carrying out health education activities, with the nurse as the promoting agent.

Rosa (2020), in her investigation, observed that inadequate management of gestational syphilis was attributed to late diagnosis, which resulted in delayed treatment, in addition to low adherence to the therapeutic regimen by pregnant women and their partners. Factors such as the reduced number of prenatal consultations, professional resistance in administering treatment and organizational problems in health services also had a negative impact on the quality of care.

Likewise, Silva (2019), in his study, investigated the impact of the diagnosis of Gestational Syphilis on postpartum women in a southern pediatric hospital and realized that the diagnosis, often received at the beginning or end of pregnancy, generated emotions such as fright, sadness and fear, mainly due to the possibility of infection of the baby.

Most postpartum women started treatment during prenatal care, but some faced reinfections due to a lack of information about prevention and treatment from their partner.

There were also treatment failures, including cases of premature termination and lack of treatment during prenatal care. The researcher concluded that it is crucial to

improve education about syphilis, promoting testing during prenatal care to avoid late diagnoses and protect the mother-baby binomial. Furthermore, the researcher inferred that current public policies proved to be inadequate to contain the spread of Syphilis, requiring more effective approaches, including the transmission of information and health promotion for mothers and babies.

In this sense, nurses would have a fundamental role in guiding postpartum women, both during prenatal care and during the hospitalization period of the newborn with Congenital Syphilis. They must provide information about symptoms, risks and preventive measures to avoid fetal infection, as well as emphasize the importance of STI testing and partner treatment as an integral part of prenatal care.

In this sense, Figueiredo (2020) analyzed in his work the relationship between the offers of diagnosis and treatment for syphilis in primary care and the municipal incidences of gestational syphilis through data in the bases of Module II of the PMAQ-AB, on the website of the Ministry of Health, as Brazil recorded a significant increase in the number of cases of gestational syphilis, in the years 2010 to 2017, therefore being characterized as a serious public health problem in Brazil.

When carrying out the aforementioned analysis, it was noted that the median incidence of gestational syphilis was higher in the group of municipalities that made penicillin and rapid testing available in most teams. It was also evidenced that diagnostic actions were available in more than 95% of the teams for syphilis. Furthermore, it was found that the median incidence of gestational syphilis, in the municipalities in which the majority of UBS provided benzathine penicillin, and the incidence of congenital syphilis was lower, thus showing that the provision of penicillin in primary care is related to a reduction in



vertical transmission of syphilis and must be expanded.

Furthermore, the aforementioned author identified that the group of municipalities with the greatest reduction in vertical transmission had a higher median number of rapid tests and benzathine penicillin, which corroborated the perception that increasing access to basic care is an important strategy for combating the syphilis epidemic in the country.

A similar perception was that of Macêdo (2020), who evaluated the barriers in prenatal care to control the vertical transmission of syphilis in pregnant women according to the sociodemographic, reproductive and assistance profile in a metropolis in the Brazilian Northeast. The aforementioned author realized that prenatal care is the opportunity to identify and mitigate risks, considering serological screening and adequate treatment of pregnant women and partners.

From this perspective, the aforementioned researcher inferred that the deprivation of prenatal care is attested as a cause of the increase in adverse consequences in pregnancy and childbirth among women and newborns, as can be seen in congenital syphilis, abortion, stillbirth, neonatal death and prematurity. Among those who did not undergo prenatal care, relevant percentages of infection were reported, making it possible to increase negative perinatal results.

The author also notes that in relation to treatment for gestational syphilis, the results demonstrate poor adherence to care standards for screening and treatment, little commitment and preparation from the health team in the face of a reactive result, difficulty in attracting partners and high proportion of inefficient treatment.

Thus, despite the progress made within the scope of the Unified Health System (SUS), the fight against congenital syphilis, anchored in

the treatment of gestational syphilis, remains a challenge. This challenge is even more evident when considering the increase seen over the years. The occurrence of congenital syphilis serves as a sign that highlights deficiencies in the provision of prenatal care, thus becoming an event of great importance for the assessment of access and quality of primary health care services.

## **FINAL CONSIDERATIONS**

Thus, after analyzing the epidemiological bulletin which reveals that syphilis in pregnant women is a public health problem in Brazil, with a total of 535,034 cases reported between 2005 and June 2022. The geographic distribution of these cases highlights the Southeast region as the most affected, representing approximately 45.3% of the total and the age group most impacted by gestational syphilis is 20 to 29 years old with 58.1% of cases and adolescents with 22.3% of cases in 2021, demonstrating the need for specific interventions in this group.

With regard to race/color, the data indicate that in 2021, 53.3% of pregnant women diagnosed with syphilis were brown, 27.0% were white and 11.9% were black. This data highlights the need for public policies to consider socioeconomic and cultural factors so that there is an effective approach to syphilis in pregnant women. This information also sheds light on the chronic problem of basic health care that is rarely addressed to Parthian or black people.

The State of Ceará presented a worrying rate of detection of syphilis in pregnant women, reaching 31 per 1000 live births in 2020, which represents 3.4% of total cases in Brazil, highlighting the urgency of prevention and intervention strategies in the aforementioned State. In turn, the epidemiological study in Fortaleza reveals the importance of early treatment of syphilis in pregnant adolescent

women to prevent vertical transmission. This highlights the need for rigorous monitoring during prenatal care.

Finally, syphilis in pregnant women continues to be an important challenge for public health in Brazil, requiring specific interventions in different regions of the country and age groups. Lack of data on

educational attainment and high treatment dropout rates are areas of concern that require urgent attention. Furthermore, the need for a more comprehensive approach to the diagnosis and treatment of congenital syphilis is crucial for the effective prevention of vertical transmission.

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