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Clinic And Epidemiological Situation Of Gestational Syphilis In Araguatins, Tocantins State

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Abstract:
Background*: The aim of this study was to assess the clinical and epidemiological situation of gestational syphilis in the municipality of Araguatins, Tocantins.*
Materials and Methods: *This was a quantitative, epidemiological and exploratory-descriptive study.*
Results: *It was observed that in 42.3% of the forms analyzed, the clinical classification was ignored, reflecting significant flaws in the complete filling out of compulsory notification forms by health professionals. In addition, in 54.6% of the cases, the treatment of the partners was also ignored, revealing another important gap in care.*
Conclusion: *These data reinforce the urgent need to train health professionals through continuing education, as well as to increase investment in epidemiological surveillance actions in the municipality. Strengthening these actions is essential to ensure proper notification of syphilis during prenatal care, thus ensuring a better quality of care.*
Key Word: *Notification; Prevalence; Gestational Syphilis.*

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I. Introduction

Syphilis, a sexually transmitted infection (STI) of global relevance, has been documented for more than half a millennium, affecting men and women in various age groups. Its prevalence, especially among young people of reproductive age, highlights the biopsychosocial impact of this infection (Oliveira, 2017). Despite advances in treatment, syphilis remains stigmatized as a venereal disease and is still widely neglected by those who expose themselves to unprotected sex (Neto, 2017).

Globally, it is estimated that approximately 2 million pregnant women are diagnosed with syphilis every year. Many of these women are not tested for the disease or do not receive adequate treatment. As a result, around 50% of untreated or inadequately treated pregnant women can transmit the infection to the fetus, resulting in serious complications such as prematurity, fetal death, neonatal death, low birth weight or congenital infection (WHO, 2011). Gestational syphilis, when left untreated, has a vertical transmission rate that can vary between 70% and 100% in the primary and secondary phases of the disease (Ministry of Health, 2014), making it one of the STIs with the highest vertical transmission rate (Veronesi & Foccacia, 2005). Given the impact of syphilis on maternal and newborn health, it is essential to monitor its prevalence at a local, regional and national level. Such monitoring allows for the optimization of public health policies, strengthening the prevention, diagnosis, surveillance and treatment of the disease.

This study was justified by the need to describe the sociodemographic, clinical and laboratory characteristics and therapeutic measures used to treat pregnant women diagnosed with syphilis. The aim of this study was to evaluate the epidemiological profile of gestational syphilis in the municipality of Araguatins,

Tocantins, between 2015 and 2021, contributing to a better understanding of the quality of care provided and the control of this important STI.

II. Material And Methods

In this epidemiological, exploratory-descriptive and quantitative study, conducted in the municipality of Araguatins, in the north of Tocantins, between 2015 and 2021, the study population included all women living in the region who had been notified of gestational syphilis.

The sample included 100% of the compulsory notification forms provided by the Araguatins Municipal Health Department during this period. The inclusion criteria included women who lived in Araguatins-TO between 2015 and 2021 and had cases of gestational syphilis notified during this period. Records with incomplete information and cases of gestational syphilis outside the period of analysis were excluded.

The project was approved by the Research Ethics Committee of the State University of Tocantins, under opinion number 48164721.0.0000.8023, and used data from the Notifiable Diseases Information System (SINAN). The profile of the sample was characterized by absolute and relative frequency, and prevalence rates were assessed over the period from 2015 to 2021, using Pearson's chi-square test, with analysis using SPSS statistical software. The significance level adopted was 5% ($p < 0.05$).

III. Result And Discussion

Table 1 shows the period of pregnancy in which pregnant women in the municipality of Araguatins were diagnosed with syphilis and the respective clinical classification, from 2015 to 2021. It was found that 47.4% of pregnant women were diagnosed only in the 3rd trimester of pregnancy, 30.9% in the 1st trimester, and 16.5% in the 2nd trimester. In 5.2% of cases, the field referring to the period of pregnancy in which the diagnosis was made was not filled in.

Similar results were found in studies by Oliveira (2016), Padovani et al. (2018) and Cavalcante et al. (2017), who also reported that most pregnant women were diagnosed with syphilis only in the 3rd trimester. This data is in line with research carried out in other Brazilian states, such as the study by Lafetá et al. (2016), which pointed to a late diagnosis in a large proportion of pregnant women. Araujo et al. (2008) add that this late diagnosis can be explained by women's low adherence to prenatal care in the first months of pregnancy, as well as the insufficient quality of care provided to pregnant women.

Table 1. Clinical classification and quarter of notification of gestational syphilis cases in the municipality of Araguatins from 2015 to 2021.

	Year n (%)							Total	*p**
	2015	2016	2017	2018	2019	2020	2021		
Trimester of pregnancy									
1º Trimester	4 (40,0)	1 (33,3)	4 (36,4)	6 (26,1)	6 (30,0)	4 (23,5)	5 (38,5)	30 (30,9)	
2ª Trimester	3 (30,0)	2 (66,7)	1 (9,1)	2 (8,7)	4 (20,0)	4 (23,5)	0 (0,0)	16 (16,5)	0,06
3ª Trimester	3 (30,0)	0 (0,0)	2 (18,2)	14 (60,9)	10 (50,0)	9 (52,9)	8 (61,5)	46 (47,4)	
Ignorado	0 (0,0)	0 (0,0)	4 (36,4)	1 (4,3)	0 (0,0)	0 (0,0)	0 (0,0)	5 (5,2)	
Clinical Classification									
Primary	4 (40,0)	1 (33,3)	2 (18,2)	3 (13,0)	9 (45,0)	2 (11,8)	4 (30,8)	25 (25.8)	
Secondary	0 (0,0)	1 (33,3)	0 (0,0)	0 (0,0)	0 (0,0)	2 (11,8)	0 (0,0)	3 (3.1)	
Tertiary	3 (30,0)	1 (33,3)	2 (18,2)	2 (8,7)	1 (5,0)	2 (11,8)	2 (15,4)	13 (13.4)	0,11
Latent	0 (0,0)	0 (0,0)	1 (9,1)	6 (26,1)	4 (20,0)	3 (17,6)	1 (7,7)	15 (15.5)	
Ignored	3 (30,0)	0 (0,0)	6 (54,5)	12 (52,2)	6 (30,0)	8 (47,1)	6 (46,2)	41 (42.3)	
Source: Research data, 2022.									

With regard to clinical classification, 42.3% of the notification forms had this field ignored. Among the complete notifications, the primary form had the highest prevalence, corresponding to 25.8%, followed by the latent phase, with 15.5%. Syphilis in the primary phase is particularly worrying, as it poses a greater risk of infection to the conceptus (Costa et al., 2013). In addition, the diagnosis of primary syphilis is hampered by the location of the hard chancre, often found in the perineum, cervix or vaginal wall, which can lead to inadequate treatment due to the wrong clinical classification of the disease (Brasil, 2015).

The main characteristic of primary syphilis is the presence of a treponemal-rich ulcer, usually painless and single, with regular and defined edges. This ulcer, called a hard chancre, appears where the bacteria entered

the body (vulva, vagina, penis, cervix, mouth, anus, among others), and after one or two weeks, regional lymphadenopathy occurs. The ulcer can disappear with or without treatment (Brazil, 2018).

Secondary syphilis, on the other hand, usually manifests itself 6 weeks to 6 months after the hard chancre has healed, and can occur simultaneously with the primary phase. It is initially characterized by an erythematous macular rash (roséola) on the trunk and limbs, which is barely visible. These lesions evolve into papular and erythematous-brownish forms and can spread all over the body, most frequently to the genitals, palms and soles. These lesions are often confused with anogenital warts caused by HPV. As in the primary phase, symptoms disappear within a few weeks, regardless of treatment (Brazil, 2018).

Most syphilis diagnoses occur in the latent phase, characterized by the absence of signs and symptoms. Diagnosis is carried out exclusively using treponemal and non-treponemal tests. Latent syphilis is subdivided into recent latent, when the infection is less than two years old, and late latent, when it exceeds this period (Brazil, 2018).

The tertiary phase of syphilis can appear between 1 and 40 years after the initial infection, affecting around 20% to 25% of untreated cases. It is characterized by tissue destruction, which can affect the cardiovascular and nervous systems and cause the formation of tumours in bones, mucous membranes, skin or other tissues. These lesions can result in disability, disfigurement and even death (Brazil, 2018).

The lack of complete filling in of the notification forms in this study, due to negligence or underreporting, reveals the lack of appreciation of compulsory notification in everyday work. This reflects the poor quality of prenatal care (Freitas Júnior, 2014; Nonato, Melo, Guimarães, 2015).

Table 2 describes the treatment regimen of pregnant women diagnosed with syphilis in the municipality of Araguatins between 2015 and 2021. Of the cases analyzed, 43.3% of pregnant women received Benzathine Penicillin G 2,400,000 IU, while 32% were treated with Benzathine Penicillin G 7,200,000 IU. However, 11.3% of the pregnant women did not receive any treatment.

These data raise concerns, especially given the higher prevalence of primary syphilis observed in the forms, suggesting that there may be significant difficulties among health professionals in accurately identifying the clinical signs of the different stages of syphilis. This can lead to errors in the clinical classification and appropriate treatment of the infection (Brazil, 2018), compromising the effectiveness of the care provided to pregnant women.

Table 2. Description of the treatment regimen for pregnant women diagnosed with syphilis in the municipality of Araguatins between 2015 and 2021.

	Year n (%)								
	2015	2016	2017	2018	2019	2020	2021	Total	*p**
Treatment regimen prescribed to the pregnant woman.									
Ignored	0 (0,0)	0 (0,0)	0 (0,0)	3 (13,0)	1 (5,0)	1 (5,9)	1 (7,7)	6 (6,2)	
Not performed	0 (0,0)	0 (0,0)	2 (18,2)	3 (13,0)	1 (5,0)	4 (23,5)	1 (7,7)	11 (11,3)	
Another regimen	0 (0,0)	0 (0,0)	0 (0,0)	1 (4,3)	1 (5,0)	1 (5,9)	0 (0,0)	3 (3,1)	
Penicillin G Benzathine 2.400.000 UI	4 (40,0)	2 (66,7)	4 (36,4)	9 (39,1)	8 (40,0)	6 (35,3)	9 (69,2)	42 (43,3)	0,79
Penicillin G Benzathine 4.800.000 UI	0 (0,0)	0 (0,0)	1 (9,1)	0 (0,0)	1 (5,0)	2 (11,8)	0 (0,0)	4 (4,1)	
Penicillin G Benzathine 7.200.000 UI	6 (60,0)	1 (33,3)	4 (36,4)	7 (30,4)	8 (40,0)	3 (17,6)	2 (15,4)	31 (32,0)	

Source: Research data, 2022.

The information obtained in this research diverges from the data found by Neto (2017) in a study carried out in the municipality of Itapeva, São Paulo, where Penicillin G Benzathine 7,200,000 IU was prescribed to 88.3% of pregnant women. Similar divergences were also identified in a study conducted by Nonato et al. (2015) in Belo Horizonte, Minas Gerais, where 38.8% of pregnant women received treatment with Benzathine Penicillin G 7,200,000 IU.

Syphilis is treated with Benzathine Penicillin G, an antibiotic widely available in the main health services of the Unified Health System (SUS). The dose of penicillin administered depends above all on the clinical stage of the infection at the time of diagnosis. Penicillin is the antibiotic of choice for the treatment of syphilis; however, other antibiotics can be used in specific cases, after careful evaluation by a health professional. Even after complete treatment, it is crucial to continue monitoring the patient with non-treponemal tests to ensure a cure. In addition, it is recommended that all people with whom the patient has had sexual relations in the last three months be tested and treated, if necessary, in order to interrupt the chain of transmission (Brazil, 2022).

Although alternative antibiotics, such as macrolides and tetracyclines, have been used to treat syphilis in adults, they are not recommended during pregnancy due to their toxicity to the fetus or their inability to cross

the placental barrier. There have also been reports of bacterial resistance to macrolides. The efficacy of ceftriaxone in the treatment of fetal syphilis has also not been established in pregnant women, which disqualifies this therapeutic option during pregnancy. Therefore, the only effective and safe alternative for the treatment of syphilis in pregnant women remains Benzathine Penicillin G (Brazil, 2019).

Table 3 shows the description of the treatment regimen for the partners of pregnant women diagnosed with syphilis in the municipality of Araguatins, between 2015 and 2021, as well as the reasons for the lack of treatment. It was observed that in 54.6% of cases, the treatment of partners was ignored, while 22.7% of partners did not undergo any treatment. Only 22.7% of partners were treated at the same time as pregnant women. The low adherence to treatment on the part of partners shown in this study is corroborated by other literature, such as Lafetá et al. (2016), who also report this difficulty in managing gestational syphilis.

Table 3. Description of the treatment regimen for partners diagnosed with syphilis in the municipality of Araguatins between 2015 and 2021.

	Year n (%)							Total	*p**
	2015	2016	2017	2018	2019	2020	2021		
Treatment regimen prescribed for the partner									
Ignored	10 (100,0)	3 (100,0)	5 (45,5)	15 (65,2)	7 (35,0)	5 (29,4)	4 (30,8)	49 (50,5)	
Not done	0 (0,0)	0 (0,0)	1 (9,1)	5 (21,7)	1 (5,0)	6 (35,3)	8 (61,5)	21 (21,6)	
Another scheme	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	2 (10,0)	0 (0,0)	0 (0,0)	2 (2,1)	
Penicillin G Benzathine 2.400.000 UI	0 (0,0)	0 (0,0)	2 (18,2)	3 (13,0)	7 (35,0)	4 (23,5)	1 (7,7)	17 (17,5)	0,05
Penicillin G Benzathine 4.800.000 UI	0 (0,0)	0 (0,0)	1 (9,1)	0 (0,0)	1 (5,0)	0 (0,0)	0 (0,0)	2 (2,1)	
Penicillin G Benzathine 7.200.000 UI	0 (0,0)	0 (0,0)	2 (18,2)	0 (0,0)	2 (10,0)	2 (11,8)	0 (0,0)	6 (6,2)	
Reason for not treating partner									
Ignored	10 (100,0)	3 (100,0)	7 (63,6)	17 (73,9)	15 (75,0)	9 (52,9)	4 (30,8)	65 (67,0)	
Another reason	0 (0,0)	0 (0,0)	3 (27,3)	2 (8,7)	3 (15,0)	1 (5,9)	0 (0,0)	9 (9,3)	
Partner with non-reactive serology	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	1 (5,0)	0 (0,0)	1 (7,7)	2 (2,1)	0,06
Partner was summoned to the health unit for treatment but did not attend.	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	1 (7,7)	1 (1,0)	
Partner was not summoned to the health unit for treatment	0 (0,0)	0 (0,0)	0 (0,0)	3 (13,0)	0 (0,0)	7 (41,2)	6 (46,2)	16 (16,5)	
Partner had no further contact with the pregnant woman	0 (0,0)	0 (0,0)	1 (9,1)	1 (4,3)	1 (5,0)	0 (0,0)	1 (7,7)	4 (4,1)	
Partner treated concurrently with the pregnant woman									
Ignored	10 (100,0)	3 (100,0)	8 (72,7)	17 (73,9)	6 (30,0)	5 (29,4)	4 (30,8)	53 (54,6)	
Not	0 (0,0)	0 (0,0)	1 (9,1)	4 (17,4)	2 (10,0)	7 (41,2)	8 (61,5)	22 (22,7)	0,05
Yes	0 (0,0)	0 (0,0)	2 (18,2)	2 (8,7)	12 (60,0)	5 (29,4)	1 (7,7)	22 (22,7)	

Source: Research data, 2022.

With regard to the treatment regimen prescribed for the partners, the data shows that 50.5% of the notifications had the treatment ignored, while 21.6% of the partners did not receive treatment. Among the 25.8% who received treatment, Penicillin G Benzathine 2,400,000 IU was prescribed for 17.5% of partners.

As for the reasons for not receiving treatment, 67% of the cases were ignored. Other reasons identified were: 16.5% of partners were not summoned to the health unit for treatment, 9.3% were not treated for other reasons, 4.1% had no further contact with the pregnant woman, 2.1% had unreactive serology, and 1% were summoned but did not attend the unit.

This information highlights the low adherence of partners to the diagnosis and treatment of syphilis, which can be attributed to the lack of active search, loss of contact with pregnant women, and the subsequent possibility of continuous transmission and reinfection of pregnant women who have already been treated. The study therefore highlights the urgent need to improve care and interrupt the chain of syphilis transmission (Oliveira, 2016).

The problems related to adherence and identifying partners for treatment are often associated with the partners' working hours, which often do not coincide with the opening hours of the Basic Health Units (UBS). In addition, the lack of information about syphilis and its consequences for the concept, as well as the perception that they do not have an STI, contribute to low adherence to treatment (Mesquita, 2012).

Similar data was found in research conducted by Silva et al. (2020) in the 16th Health Region of Apucarana, Paraná, where more than a third of partners did not receive treatment for syphilis. In comparison, Oliveira (2016) in Natal, Rio Grande do Norte, reported that 48% of partners did not receive treatment, with only 16.3% receiving the recommended treatment. These studies corroborate the difficulty in addressing the treatment of partners, highlighting the main reason as the lack of complete information during the notification of gestational syphilis.

IV. Conclusion

The research revealed deficiencies in the care provided to pregnant women by primary health services, which represent the first point of access to the Unified Health System (SUS). These shortcomings are compromising the effectiveness of prenatal care and, consequently, not ensuring the birth of children free from the complications associated with vertical transmission of syphilis. There have been flaws in the surveillance process and negligence on the part of health professionals when it comes to filling in the notification forms correctly.

In view of the arguments presented, it is imperative to encourage proper notification of syphilis in order to increase the volume of information and scientific production on this public health issue.

Prevention of syphilis should include taking care during sexual relations, such as reducing promiscuous behavior and using condoms. During prenatal care, it is essential to carry out tests for early diagnosis, thus ensuring greater adherence to treatment for pregnant women diagnosed with syphilis and preventing vertical transmission of the infection.

It is also essential to invest in the qualification of health professionals through continuing education, as well as greater investment in epidemiological surveillance actions in the municipality.

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