



EPIDEMIOLOGICAL ANALYSIS OF SYPHILIS CASES IN PREGNANT WOMEN IN THE STATE OF ALAGOAS

ANÁLISE EPIDEMIOLÓGICA DOS CASOS DE SÍFILIS EM GESTANTES NO ESTADO DE ALAGOAS

ANÁLISIS EPIDEMIOLÓGICO DE CASOS DE SÍFILIS EN EMBARAZADAS EN EL ESTADO DE ALAGOAS

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RESUMO

Objetivo: realizar a análise epidemiológica dos casos de sífilis em gestantes, no Estado de Alagoas, de 2010 a 2019. **Método:** trata-se de um estudo descritivo realizado por meio do levantamento de dados do departamento de informática do Sistema Único de Saúde do Brasil (DATASUS). A população do estudo foi composta por casos de sífilis em gestantes, notificados de 2010 a 2019, residentes de Alagoas. **Resultado:** observa-se uma tendência de crescimento do número de casos de sífilis em gestantes ao longo dos anos em Alagoas, com maior registro em 2018, com 950 casos e taxa de detecção de 18,9. Em relação à variável idade materna, observa-se a predominância na faixa etária de 20 a 29 anos, correspondendo a 47,5 do total de casos. **Conclusão:** observa-se que o número de casos de sífilis em gestantes em Alagoas ainda se encontra em ascensão, sendo necessário fortalecer e intensificar as ações para o controle do agravo.

Palavras-chave: Perfil de saúde; Epidemiologia; Atenção Primária à Saúde.

ABSTRACT

Objective: perform the epidemiological analysis of syphilis cases in pregnant women, in the State of Alagoas, from 2010 to 2019. **Method:** this is a descriptive study carried out through a survey of data from the Informatics Department of the Brazilian Unified Health System (DATASUS). The study population was composed of cases of syphilis in pregnant women, reported from 2010 to 2019, residents of Alagoas. **Result:** there is an increasing trend in the number of syphilis cases in pregnant women over the years in Alagoas, with the highest record in 2018, with 950 cases and detection rate of 18.9. Regarding the maternal age variable, there is predominance in the age group of 20 to 29 years, corresponding to 47.5 of the total cases. **Conclusion:** it is observed that the number of syphilis cases in pregnant women in Alagoas is still rising, and it is necessary to strengthen and intensify actions to control this grievance.

Keywords: Health Profile; Epidemiology; Primary Health Care.

RESUMEN

Objetivo: realizar el análisis epidemiológico de casos de sífilis en gestantes, en el estado de Alagoas, de 2010 a 2019. **Método:** se trata de un estudio descriptivo realizado a partir de la recolección de datos del departamento de TI del Sistema Único de Salud Brasileño (DATASUS). La población del estudio estuvo constituida por casos de sífilis en gestantes, notificados de 2010 a 2019, residentes de Alagoas. **Resultado:** Se observa una tendencia creciente en el número de casos de sífilis en gestantes a lo largo de los años en Alagoas,

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con el récord más alto en 2018, con 950 casos y una tasa de detección de 18,9. En cuanto a la variable edad materna, hay un predominio en el grupo de edad de 20 a 29 años, correspondiente al 47,5 del total de casos. **Conclusión:** se observa que el número de casos de sífilis en gestantes en Alagoas sigue en aumento, y es necesario fortalecer e intensificar las acciones para el control de la enfermedad.

Palabras clave: Perfil de Salud; Epidemiología; Atención Primaria a la Salud.

INTRODUCTION

Syphilis is an infection caused by the spirochete *Treponema pallidum*, subspecies *pallidum*, with horizontal (predominantly sexual) and vertical transmission.¹ The classification of syphilis is divided into: primary, secondary, latent and tertiary. In primary syphilis, the main characteristic is the appearance of hard chancre and regional lymphadenomegaly; in secondary syphilis, characteristic widespread lesions occur on the skin and mucous membranes. In the absence of treatment, symptoms disappear and syphilis enters the latent mode, and in the tertiary syphilis stage, lesions no longer affect only the skin and mucous membranes, but also the organs.²

During pregnancy, syphilis requires immediate intervention to reduce the possibility of vertical transmission. The disease can be transmitted to the fetus trans-placentally at any stage of gestation or through the birth canal, where the likelihood of fetal infection will be directly influenced by the mother's stage of syphilis.³

According to estimates by the World Health Organization (WHO), approximately 1.5 million pregnant women are infected with syphilis annually; half of them are untreated and will have children with adverse outcomes, such as neonatal death, low birth weight, and/or clinical evidence of infection.⁴ In Brazil, between 2007 and 2016, there was an increase in the number of notifications and in the epidemiological rates of syphilis in pregnant women and congenital syphilis. In pregnant women, the detection rate was 2.5 cases/1,000 live births in 2007 to 12.4 cases/1,000 live births in 2016.³

Congenital syphilis and syphilis in pregnant women are compulsorily notifiable in Brazil since 1986.⁵ The elimination of congenital syphilis is one of the goals proposed by the WHO among the Millennium Development Goals (MDGs), stipulating as incidence rate 0.5 cases per 1,000 live births.⁶

Despite the progress in the access to diagnostic and treatment actions in primary care, the incidences of congenital and gestational syphilis are still far from the internationally recommended goals.⁷ The national data reveal that the efforts made so far have been insufficient to break the chain of transmission, resulting in

an increasing trend in the incidences of acquired, gestational and congenital syphilis in all regions of the country.⁷

In this sense, considering syphilis as a public health problem and the increase in notifications of cases in pregnant women, this research seeks to answer the following guiding question: "What is the epidemiological profile of syphilis cases in pregnant women in the State of Alagoas?".

This study has the general objective of performing the epidemiological analysis of syphilis cases in pregnant women in the State of Alagoas, from 2010 to 2019. As specific objectives, describe the epidemiological profile of pregnant women with syphilis and identify the risk factors associated with the occurrence of cases.

METHOD

- Type of study

The study, of descriptive and epidemiological nature, was conducted through a survey in the DATASUS database, public domain data and unrestricted access. The data was collected in September 2020; however, it refers to the period from 2010 to 2019.

- Sample

The study population was composed of all confirmed cases of syphilis in pregnancy, in women residing in the State of Alagoas, notified in the period from 2010 to 2019.

- Variables

The following variables were selected and arranged in the form of tables in absolute and relative numbers: gestational age (1st trimester, 2nd trimester, 3rd trimester, ignored and ignored gestational age); age group (10-14, 15-19, 20-29, 30-39, 40 years or older, ignored/blank); race or color (white, black, yellow, brown, indigenous and ignored); education (illiterate, 1st to 4th grade incomplete, 4th grade complete, 5th to 8th grade incomplete, Elementary School complete, High School incomplete, High School complete, College incomplete, College complete, not applicable, and ignored); treatment regimen (penicillin, other regimen, not performed, and ignored) and clinical classification of syphilis in pregnant women (primary, secondary, tertiary, latent, ignored).

- Data analysis

The data processing and analysis was done using the software TabWin (DATASUS) and Excel (Microsoft®), whose results received the simple treatment

of descriptive statistics and were presented in tables and later analyzed for discussion.

- Inclusion criteria

The inclusion criteria were all cases of syphilis in pregnant women, reported in the period from 2010 to 2019, in the Information System for Notifiable Grievances (SINAN), available at DATASUS.

RESULTS

A growing trend in the number of syphilis cases in pregnant women has been observed over the years in Alagoas, with the highest record in 2018, with 950 cases and a detection rate, which is the percentage of fetuses affected by the disease, of 18.9 (Chart 1).

Chart 1 - Cases and detection rate (per 1,000 live births) of pregnant women with syphilis, in Alagoas, by year of diagnosis.

Syphilis in pregnant women	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of cases	184	200	190	203	280	316	371	595	950	298
Detection rate	3.4	3.7	3.6	3.9	5.4	6	7.7	11.8	18.9	-

Source: UHS Computer Department (DATASUS). Consolidated data as of September 2020. Alagoas.

Despite the increasing number of cases, it is noted that they are identified in a non-opportune period starting in the 2nd and 3rd trimesters (Table 1).

Table 1 - Percentage distribution (%) of cases of pregnant women with syphilis according to gestational age, by year of diagnosis, in Alagoas.

Gestational Age	2010 (%)	2011 (%)	2012 (%)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)
1 st Trimester	8.7	14.5	13.2	14.8	16.1	21.5	23.2	25.5	26.8	25.8
2 nd Trimester	44	41.5	48.9	43.8	37.5	39.9	38.8	33.3	32.6	25.8
3 rd Trimester	44.6	41.5	36.3	34.5	40	34.2	36.4	36.6	37.8	42.3
Ignored gestational age	2.7	2.5	1.6	6.9	6.4	4.4	1.6	4.5	2.7	6
Ignored	-	-	-	-	-	-	-	-	-	-

Source: UHS Computer Department (DATASUS). Consolidated data as of September 2020. Alagoas.

Regarding the variable maternal age, there is a predominance in the 20-29 age group, corresponding to 47.5% of all cases in the studied period, characterizing the young adult phase (Table 2).

Table 2 - Percentage distribution of cases of pregnant women with syphilis according to age group, by year of diagnosis, in Alagoas.

Age group	Total (%)	2010(%)	2011(%)	2012(%)	2013(%)	2014(%)	2015(%)	2016(%)	2017(%)	2018(%)	2019(%)
10 t 14 years	1.95	0.5	2	2.6	3.4	2.5	2.2	1.9	2	1.4	1
15 to 19 years	28.3	24.5	18.5	27.9	27.6	28.6	35.8	31	27.2	26.8	34.9
20 to 29 years	47.5	48.9	48	47.4	43.3	42.5	44.3	48.8	52.6	51.6	47.7
30 to 39 years	19.6	22.8	27	20.5	23.2	24.6	13.9	15.9	16.3	17.4	14.8
40 years or more	2.62	3.3	4.5	1.6	2.5	1.8	3.8	2.4	1.8	2.8	1.7
Ignored	-	-	-	-	-	-	-	-	-	-	-

Source: UHS Computer Department (DATASUS). Consolidated data as of September 2020. Alagoas.

In the variable race or color, it is observed that the highest percentage was of brown women, with 64.8% (Table 3).

Table 3 - Percentage distribution (%) of cases of pregnant women with syphilis, according to race or color, by year of diagnosis.

Race or color	Total	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
White	13.1	13	15.5	12.1	15.3	10.4	12.7	14.8	11.4	10.9	15.1
Black	13.6	9.8	14.5	17.4	18.2	17.5	14.9	14.3	10.4	10.7	8.1
Yellow	1.3	0.5	1.5	1.1	1	1.1	2.8	1.6	0.8	1.3	1.3
Brown	64.8	68.5	56.5	65.3	59.6	63.9	63.3	61.5	71.6	69.7	67.8
Indigenous	0.52	0	1	0.5	1	0.4	1.3	0	0.3	0.4	0.3
Ignored	6.72	8.2	11	3.7	4.9	6.8	5.1	7.8	5.4	6.9	7.4

Source: UHS Computer Department (DATASUS). Consolidated data as of September 2020. Alagoas.

Regarding schooling, the largest number of pregnant women was from the 1st to the 4th grade incomplete (14.9%) and only 0.64% with complete college education (Table 4).

Table 4 – Percentage distribution (%) of cases of pregnant women with syphilis, according to education, by year of diagnosis.

Education	Total	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Illiterate	4.11	5.4	6	6.8	3.4	5	4.1	3.8	3	2.9	0.7
Incomplete 1 st to 4 th grade	14.9	19	21	18.9	18.2	19.6	13	13.7	11.6	8.3	5.7
Complete 4 th grade	5.75	6	4	5.3	5.9	7.1	4.1	8.6	5.9	4.9	5.7
Incomplete 5 th to 8 th grades	22	22.3	13	19.5	23.6	22.9	21.8	20.8	24.7	26	25.2
Complete Elementar school	5.71	1.1	6.5	4.2	7.4	5	6.6	5.9	6.1	5.9	8.4
Incomplete Highschool	7.59	2.2	4	7.9	5.9	6.4	8.2	9.2	9.6	10.1	12.4
Complete Highschool	7.01	1.6	4.5	6.8	4.9	5	8.5	6.5	9.2	11.7	11.4
Incomplete Higher Education	0.56	-	-	1.1	-	0.4	0.3	0.3	0.7	0.4	0.7
Complete Higher Education	0.64	-	-	0.5	0.5	0.4	0.3	1.1	1.3	0.4	-
Not applied	-	-	-	-	-	-	-	-	-	-	-
Ignored	32.1	42.4	41	28.9	30	28.2	32.9	30.2	27.9	29.3	29.9

Source: UHS Computer Department (DATASUS). Consolidated data as of September 2020. Alagoas.

In this study, 88.6% of pregnant women with syphilis in 2015 underwent penicillin treatment and 4.7% did not undergo treatment in the same year (Table 5).

Table 5 - Percentage distribution (%) of cases of pregnant women with syphilis, according to the treatment regimen prescribed, by year of diagnosis.

Treatment regimen	2015	2016	2017	2018
Penicillin	88.6	86	83.5	85.2
Another regimen	2.5	1.6	2.2	2
Not performed	4.7	3.8	4.7	4.6
Ignored	4.1	8.6	9.6	8.2

Source: UHS Computer Department (DATASUS). Consolidated data as of September 2020. Alagoas.

DISCUSSION

It is believed that the increase in the number of notifications is a consequence of improved diagnosis after the implementation of rapid HIV and syphilis tests in Basic Health Units through the "Stork Network" program created in 2011 by the federal government.¹⁵ The absence of data regarding 2019 detection rates may be related to underreporting or the delay in updating the database.

The late diagnosis highlights the fragility of primary care in early detection of pregnant women for the provision of routine tests, among them, the rapid test for syphilis or Venereal Disease Research Laboratory (VDRL), used for the detection of syphilis. The ideal period is always the earliest, because it allows timely treatment, reducing complications.

The data on the age range shows that the predominant age group fits the fertile age, corroborating the study conducted in Santa Catarina whose mean age was 23.62 years (± 6.27), the majority being white, single, with complete Elementary School or incomplete High School, which is proportional to the age at which pregnancy most occurs.¹⁵

Brown race/color, low education, and unpaid work are prevalent characteristics in pregnant women with syphilis.¹⁶ Regarding the ignored numbers, this fact can directly influence the analyzed information. It is necessary that the health teams are aware of the importance of their work and the correct filling of data that will subsidize the actions and services in health.

In Brazil, regional studies have identified the relationship between congenital syphilis and low education of the mother.¹¹⁻¹³ It is known that syphilis is a disease that affects less socially favored groups in which social factors are more pronounced. This factor can corroborate a deficiency in their self-care and the compromise in the realization of the treatment.¹⁰

To be considered adequate syphilis treatment in pregnant women, the Ministry of Health has established some criteria to be considered, namely: treatment with benzathine penicillin, to be performed in full with the application of doses of the appropriate therapeutic scheme for the clinical phase of the disease (primary, secondary or latent); sexual partner treated concomitantly with the pregnant woman and having been completed at least 30 days before delivery.⁹

Treatment should be according to the clinical stage of infection and, in its indefiniteness or if it is not possible to know the history of adequate previous treatment of the pregnant woman, it should be considered as tertiary or late latent syphilis.¹⁴

CONCLUSION

Through the data presented in this study, it is observed that the number of syphilis cases in pregnant women in Alagoas is still rising. It was also possible to conclude that the predominant profile of pregnant women with syphilis is composed of young, brown and with low education.

Based on the data presented, the importance of further research on this subject is evident. This study is extremely important for knowing the epidemiological situation in the state of Alagoas to direct and strengthen the actions of surveillance, promotion, and prevention of the grievance.

Among the limitations found, the main one is the occurrence of underreporting or incomplete data, which hinders the reliable analysis of the information. In this sense, it should be discussed, in primary care, what are the obstacles regarding the promotion, prevention and treatment of the grievance, in order to strengthen and intensify the actions for the control of the grievance, with the provision of testing for syphilis for all pregnant women, timely diagnosis and treatment, as directed by the MH, in order to reduce vertical transmission.

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