

The epidemiological profile of syphilis cases in pregnant women in Mineiros city, Goiás, between 2015 and 2018

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ABSTRACT. The purpose of this study was to analyze the epidemiological profile of syphilis cases in pregnant women living in Mineiros city, Goiás, between 2015 and 2018. This was a descriptive epidemiological study using a quantitative approach. The study was based on the data obtained from the Information System for Notifiable Diseases (SINAN-NET), Information System on Live Births (SINASC) in Mineiros city, Goiás, between January 2015 and August 31st 2018. In 2015, fewer cases were reported compared to the other years, whereas increasing numbers have been observed over the period evaluated, leading to the question of possible sub-registrations. Thus, it is clear that between 2015 and 2018, there was a prevalence of syphilis in the age group of 20–29 years that represented 47.6% of cases in the year 2017, followed by the group of 15–19 years with 44.4% of cases in 2016. An analysis of the cases stratified by schooling showed that the disease was more common in women who attended school till 5th to 8th grades, i.e., women who had incomplete elementary schooling, representing 33.3% of the cases of pregnant women with syphilis in the year 2017. The study showed a significant increase in the number of gestational syphilis cases in teenagers and young adults over the years.

Keywords: Congenital syphilis, Epidemiologic Surveillance, Gestational syphilis

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INTRODUCTION

Syphilis is a systemic infectious disease of chronic evolution that belongs to the group of sexually transmitted infections (STIs) and is triggered by the bacterium, *Treponema pallidum*. It is transmitted predominantly through sexual intercourse, but it also occurs via the vertical or transplacental route; therefore, investigation for syphilis is essential during prenatal care (Brasil, 2020, OMS, 2019).

The syphilis infection crosses the skin or mucosal barrier and spreads throughout the body (Nonato et al., 2015). The disease can develop in 5 clinical forms in infected patients, namely, primary or hard, secondary, tertiary, latent, and neurosyphilis. According to Teixeira (2020), primary syphilis is

manifested by unique, painless, pink and protosyphilic up to 3 weeks of contagion and disappears within 6 weeks, where it enters the combined latency phase symptoms reappear in up to 6 months, with lesions rich in bacteria throughout the body, as in palms, accompanied by general symptoms such as fever, headache and lymph node enlargement. The secondary syphilis progresses to the second year of the disease, followed by long periods of latency. In the tertiary phase, the infection can affect more crucial organs and systems, including the heart, bones, and the central nervous system (neurosyphilis), thereby increasing the risk of death; therefore, it is considered as the most serious phase of the disease (Lafetá et al., 2016).

According to the epidemiological bulletin of Information Systems for Notifiable Diseases (SINAN), in 2018, there were 158,051 cases of acquired syphilis, 26,219 cases of congenital syphilis, 62,599 cases of syphilis in pregnant women, and 241 deaths from congenital syphilis in Brazil. There was an increase in the rate of syphilis detection in pregnant women between 2005 and 2019, as observed from the record of

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324,321 cases, of which 45% were in the southeastern region; 21%, northeastern region; 14.7%, southern region; and, 8.9% in the midwestern region (Secretaria de Vigilância em Saúde, 2019).

Although health systems publicize the importance of prenatal care for the prevention of maternal and fetal diseases such as congenital syphilis, there is insufficient expansion of diagnostic actions in this regard. This shows that prenatal serology should be used effectively to assist in the diagnosis and treatment of syphilis (Domingues et al., 2016). Most individuals with syphilis are asymptomatic; therefore, they can easily transmit the disease to their partners. When left untreated, syphilis evolves into more severe forms that affect the organism in a systemic manner (Peeling et al., 2017).

Studies on the transversal character and spatial distribution have allowed for a better understanding of municipalities that needed more attention from the government, in addition to playing an important role in the planning and assessment of the impact of programs derived from public policies (Medina & Hartz, 2009). In this context, this study aimed to assess the epidemiological profile of syphilis cases in pregnant women in Mineiros, Goiás, between 2015 and 2018.

MATERIALS AND METHODS

This is a cross-sectional descriptive epidemiological study with a quantitative approach. Data were collected through the Epidemiological Surveillance Service of the Department of Health and Social Action of the Municipality of Mineiros, GO, in July 2018, Information System on Notifiable Diseases (SINAN-NET) and Information on Live Births (SINASC) from January 2015 to August 2018 DATASUS (Computer Department of the Unified Health System in Brazil) and SINAN were used to obtain information on registered notifications of syphilis cases during pregnancy, total number of births in the municipality and characteristics of pregnant women, such as race, age and education.

The selection of studies in the databases occurred through the following collections: PubMed, Scielo, and Google academic, using the following descriptors: "Syphilis," "Gestational syphilis," and "Syphilis in pregnant women." Case reports, letters to the editor, and clinical and randomized studies in animals were excluded from the research.

For data analysis, Microsoft Excel®, Graphpad Prisma, and Statistical Package for the Social Sciences for Windows version 18.0 were used.

RESULTS

Between January 2015 and August 2018, 4,276 deliveries were performed in Mineiros/GO, of which

68 cases were diagnosed with gestational syphilis (SG). Thus, the number of syphilis cases in pregnant women was analyzed according to the year of notification (Figure 1). An increase in the number of notifications was identified throughout the study period, with an increase in the number of diagnosed cases from 5 in 2015 to 24 in 2018.

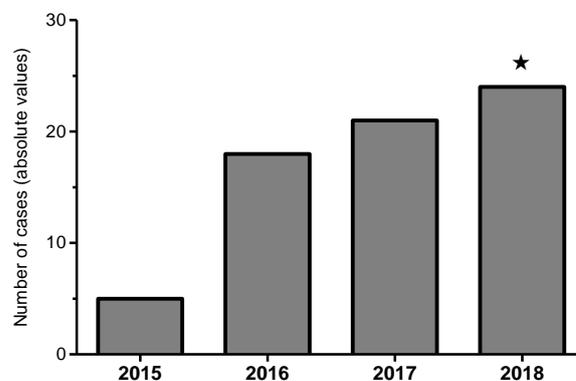


Figure 1. Number of pregnant women with syphilis per year of notification

Subsequently, stratified analyses of the number of syphilis cases in pregnant women were performed according to the age groups per year of notification (Figure 2). On comparing data of all the years studied, in 2015, the lowest rates of syphilis in pregnant women were reported for all the age groups, whereas in 2016, pregnant women aged 15–19 and 20–29 years showed higher numbers of cases.

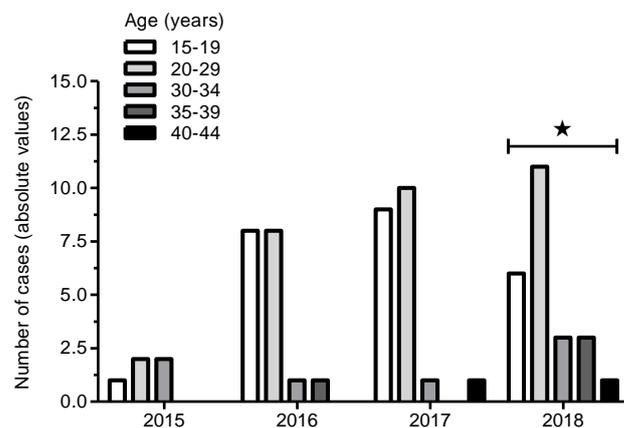


Figure 2. Number of pregnant women with syphilis according to the age groups and year of notification

Further, the cases of syphilis in pregnant women were analyzed according to the level of education (Figure 3). A heterogeneous distribution was observed among the number of cases over the years evaluated, but a high number of cases were associated with early school dropout. However, due to a lack of information, the education level cannot be taken into account as it impairs the actual analysis of the data.

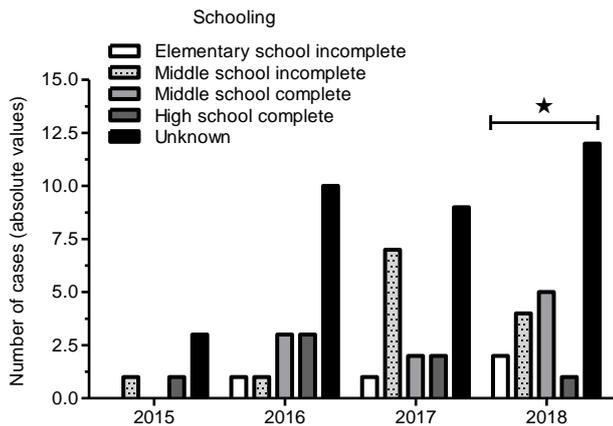


Figure 3. Number of pregnant women with syphilis according to the level of education and year of notification

The percentage of cases of pregnant women with syphilis was also evaluated in relation to the total number of deliveries per year (Figure 4). It was observed that the percentage of syphilis cases in pregnant women in relation to the number of births increased over the years evaluated, where we could observe values of 0.46% for 2015; 1.62%, 2016; 1.73%, 2017; and, 2.98%, 2018. An analysis of the data revealed a four-fold increase in 2016 compared to 2015. In addition, 2018 showed an almost seven-fold increase compared to 2015.

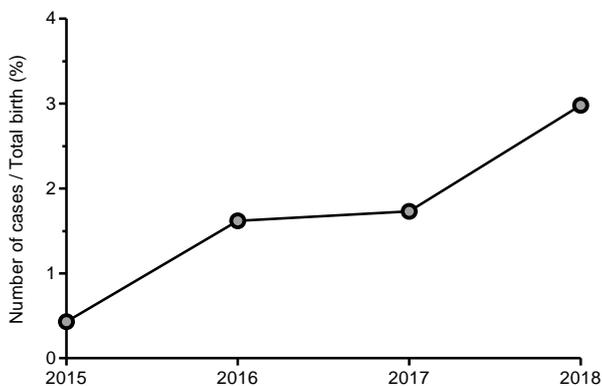


Figure 4. Percentage of pregnant women with syphilis in the total number of resident births and year of notification

To assess the regional distribution of the number of cases of pregnant women with syphilis, the data of the state of Goiás, made available by the Health Department of the state of Goiás through the epidemiological bulletin published in 2018, were accessed (Figure 5A). In addition, the percentage of pregnant women with syphilis in Mineiros city was analyzed in relation to the total number of cases in the state of Goiás (Figure 5B). Thus, an average of 1.57% (SD = 0.99) of cases was reached in relation to those reported in the period between 2015 and 2018.

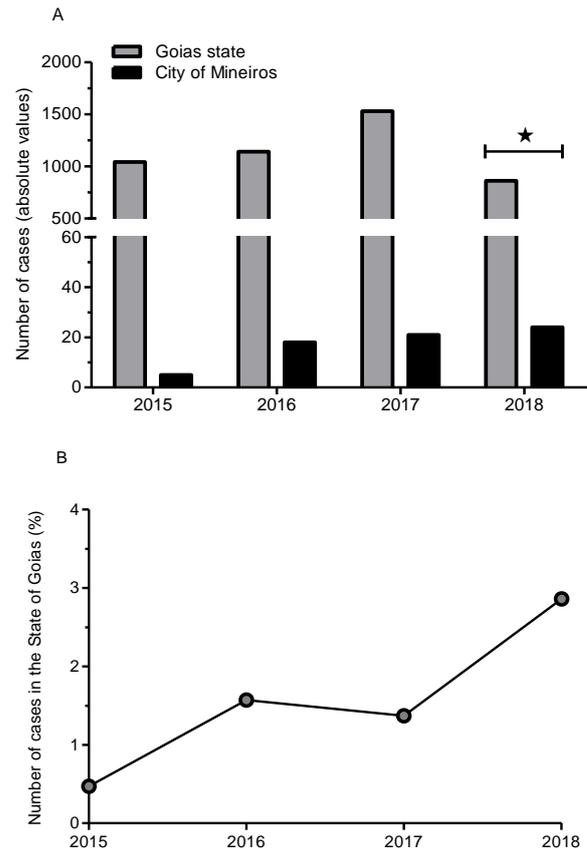


Figure 5. Number of pregnant women with syphilis (A) in the state of Goiás and Mineiros city, according to the year of notification; (B) percentage of pregnant women with syphilis in Mineiros city in relation to the total number of cases in the state of Goiás

DISCUSSION

Congenital syphilis is an STI that arouses the greatest concern of health agencies due to its serious complications that affect the fetus (Cardoso et al., 2018). In the present study, we observed that the number of syphilis cases in pregnant women in Mineiros city had increased seven times between 2015 and 2018, according to data obtained from SINAN NET. According to the epidemiological bulletin of the Secretariat of Health Surveillance-Ministry of Health 2019, with the exception of the Southern region, all the other Brazilian states, mostly in the Northeastern and Midwestern regions, showed an increase in the number of pregnant women with syphilis (Secretariat of Health Surveillance, 2019). These data show that the increase in the cases of infected pregnant women observed in Mineiros city, GO, was also observed in almost the entire nation.

In this sense, Lima and collaborators (2013) pointed out that the increase in notifications may have occurred due to the improvement in the quality of SINAN data. However, it must be taken into account that there is still a failure to control gestational syphilis which, according to Milanez and Amaral (2008), are reflections of the lack of access and use of the public health system primarily by the most disadvantaged

population, since the diagnosis and treatment of syphilis are accessible.

It is necessary to maintain a quality system for pregnant women with syphilis, which allows not only treatment, but also prevention of transmission to the baby, in addition to preventing future infections by addressing the fundamental aspects of preventive medicine and conduct with partners (Qin et al., 2014). However, in primary health care in Brazil, there is a high professional turnover associated with excess demand, work overload, and limitations in consultation time that negatively affect the monitoring of pregnant women with *Treponema pallidum* infections (Medeiros et al., 2010, Silva, 2011).

On analyzing the number of cases of pregnant women with syphilis according to the age group of the patients, it was found that the age group with the highest number of infected pregnant women was 20–29 years, which corroborates with the data reported by Padovani and collaborators in 2018, where 67.41% belonged to the age group of 20–34 years, with a smaller number of teenagers; however, there was a higher prevalence of infection in women in their gestational period as compared with the other ages. The Health Surveillance Secretariat of 2019, in line with the present study, also revealed that pregnant women between 20 and 29 years of age (52.5%) were the most affected between 2015 and 2018. Most of them were diagnosed in the first quarter (39%), which shows an improvement in filling out notification forms (Secretaria de Vigilância em Saúde, 2019, WHO, 2015).

These values indicate that the majority of cases affect young women. Interestingly, although the majority of cases affected women old enough to have completed high school and even higher education, on analyzing the level of education, we observed that syphilis cases in pregnant women are more frequent in those with higher education incomplete elementary school. This result, in addition to reflecting the failure of the Brazilian educational system, demonstrates the impact of the lack of basic education on the population's health and corroborates data from other studies (Araujo et al., 2012, Domingues et al., 2013). In 2018, 51.5% of women with syphilis had not completed high school (Secretariat for Health Surveillance, 2019). On analyzing the number of syphilis cases in pregnant women in Mineiros city compared to the state of Goiás, we observed that the number of cases in Mineiros city increased in 2018, with 2.98% of women with syphilis. This increase was also observed in the state of Goiás (7.9% according to the Department of Health Surveillance, 2019), indicating proportionality between the data of the municipality and the data of the state.

CONCLUSION

The study showed a significant increase in the number of cases of gestational syphilis over the years. The main factors that would be related to the increase in gestational syphilis cases would be a decrease in condom use, ignorance on the part of the population about the severity of the disease, and an improvement in the quality of the notifications.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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