EPIDEMIOLOGICAL SITUATION OF SYPHILIS, BETWEEN 2010 AND 2021, IN THE MUNICIPALITY OF PONTE NOVA - MG

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Epidemiological situation of syphilis, between 2010 and 2021, in the municipality of Ponte Nova - MG
Epidemiological situation of syphilis in the last decade, in Ponte Nova - MG

Cláudia Aparecida Viana Silva[1], Kemile Albuquerque Leão[2].

[1]*Pharmacy student, Faculdade Dinâmica do Vale do Piranga.*

[2]*Doctor of Pharmacy, Faculdade Dinâmica do Vale do Piranga.*

Corresponding author*: *vianaclaudia005@gmail.com

ABSTRACT

It is well known that syphilis, a bacterial infectious disease, has been rising in Brazil and worldwide in recent years. The aim of this study was to analyze the situation regarding notifications of acquired syphilis in the municipality of Ponte Nova, Minas Gerais, in comparison with the rest of the country over the last 12 years. This is a descriptive study with a quantitative and cross-sectional approach. As a result, it was possible to observe a reduction in notifications of acquired syphilis in Brazil, in Minas Gerais and in Ponte Nova. We also observed a very low number of notifications in Ponte Nova compared to the results for the state of Minas Gerais. It is assumed that the data may be low due to underreporting and it is reinforced that this attitude may make it impossible to know the true situation of syphilis in the municipality, hindering disease control actions, which should be based on epidemiological data from SINAN notifications.

Keywords: Syphilis; Treponema pallidum; Epidemiology of syphilis; Incidence.

RESUMO

É sabido que a sífilis, uma doença infecciosa bacteriana, voltou a crescer no Brasil e no mundo nos últimos anos. Este estudo trouxe como objetivo a realização de uma análise entre a situação das notificações de sífilis adquirida no município de Ponte Nova-MG em comparação com o restante do território nacional ao longo dos últimos 12 anos. Trata-se de estudo com método descritivo, com uma abordagem quantitativa e transversal. Como resultado, foi possível observar uma redução de notificações de sífilis adquirida no Brasil, em Minas Gerais e em Ponte Nova. Observou-se ainda um número muito baixo de notificações em Ponte Nova se comparado com os resultados do estado de Minas Gerais. Supõe-se que os dados podem ser baixos devido a subnotificação e reforça-se que tal atitude pode impossibilitar o conhecimento da verdadeira situação da sífilis no município, prejudicando as ações de controle da doença, que devem ser baseadas nos dados epidemiológicos de notificações do Sinan.

Palavras-chave: Sífilis; Treponema pallidum; Epidemiologia da sífilis; Incidência.

INTRODUCTION

Syphilis is an infectious bacterial disease caused by *T. Pallidum,* classified as acquired or congenital, depending on the form of transmission. It can be transmitted sexually, by blood transfusion or during pregnancy from an infected mother to her unborn child (SOUZA; BENITO, 2015). Historically, syphilis came to be considered a "world plague" on the European continent at the end of the 15th century. But it was only in the 19th century, as the endemic increased, that this infection became the target of concern for health professionals. It was at this time that the syphilis epidemic resurfaced in Brazil, causing panic in society at the time and becoming known as the time of the anti-venereal fight (GRIEBELER, 2009). As medicine advanced, the first drugs capable of controlling the disease were discovered, such as penicillin. However, as the years went by and society's behavior changed (greater sexual freedom, the emergence of contraceptives and less use of condoms), the number of cases grew again (AVELLEIRA; BOTTINO, 2006).

Because it is a slowly developing disease, syphilis develops in stages. The primary phase begins as a small, solid, limited elevation on the skin that becomes eroded, hardened and painless. A multiple, bilateral regional ganglion reaction occurs 8 to 15 days after contracting the bacteria. This reaction is known as hard chancre or protosyphiloma and contains serous secretion and many treponemes. During the secondary phase, the disease affects more of the skin and internal organs. Signs and symptoms include mucosal skin lesions and lymphadenopathy, malaise, headache, myalgia and pharyngitis. The latent phase of the disease appears when there has been no treatment, after the signs and symptoms of secondary syphilis have disappeared, considered recent in the first year and late after that. Latent syphilis has no clinical manifestations. The tertiary phase takes 10 to 30 years to appear. In this phase, obliterating endarteritis is detected, a granulomatous inflammation with a central area of necrosis (SILVA; BONAFE, 2013).

Despite being an ancient disease, the diagnosis of syphilis is still based on testing in multiple stages, using flowcharts with treponemal tests and non-treponemal tests,

depending on the stage of the disease. In general, the diagnostic test for syphilis should be carried out on patients with signs and symptoms of the disease or on asymptomatic patients who are part of a risk group, such as: patients whose partner has been diagnosed with recent syphilis (primary, secondary or latent); HIV-infected patients and anyone who has unprotected sex. Detection of syphilis in the latency period is more likely, as this is when virulence occurs, facilitating detection due to the high reactivity of serological tests. However, at this stage, patients do not show signs and symptoms and therefore do not seek health care (SOARES; CARVALHO; LIMA, 2019).

Non-treponemal tests are non-specific and detect the production of IgG and IgM antibodies against the cardiolipin released by treponemes. The VDRL (*Veneral Disease Research Laboratory*) is an example of a non-treponemal test that has been used for several years. This test has high sensitivity and low specificity, with positive results related to various interferents. Another example of a non-treponemal test is the RPR (rapid plasma reagin test). Treponemal tests, on the other hand, use *T. Pallidum* as an antigen and detect IgG and IgM antibodies without class distinction. These tests are positive earlier than non-treponemal tests and remain positive for life in most treated patients, but cannot be used to check for a cure. Examples of treponemal tests include the chemiluminescent particle immunoassay (CMIA), fluorescent treponemal antibody with absorption (FTA-Abs) and hemagglutination (TPHA). The use of flowcharts for the diagnosis of syphilis, with two or more sequential combined tests, aims to increase the positive predictive value of a positive initial test. In the classic flowchart, the first test indicated is a non-treponemal test (VDRL, RPR), which is inexpensive, has good sensitivity and is easy to perform. When positive, it is confirmed with a more expensive treponemal test (TPHA, FTA-Abs), ruling out possible false-positive results from the screening test (FREBASGO, 2017).

According to the Ministry of Health's current ordinance, Consolidation Ordinance No. 4 of September 28, 2017, Annex V - Chapter I, notification is mandatory in cases of acquired syphilis, syphilis in pregnant women or congenital syphilis (BRASIL, 2017). Compulsory notification of acquired syphilis throughout the country was instituted by Ordinance No. 2,472, published on August 31, 2010 (BRASIL, 2010). According to Soares, Carvalho and Lima (2019), to notify means to communicate to the health

authority in force the occurrence of a certain disease or health problem, for the purposes of adopting intervention measures. Health professionals in the exercise of their profession, as well as those responsible for public and private health and education organizations and establishments, are obliged to notify SUS managers of the occurrence of suspected or confirmed cases of diseases of national interest, such as syphilis. For public health, monitoring the evolution of the number of syphilis cases is of great importance, so that municipalities and states can monitor the reality of the disease in their population and adopt prevention and control measures (LIMA et al., 2019).

It is well known that syphilis has increased again in Brazil and worldwide in recent years (BRASIL, 2023). In Ponte Nova - MG the situation is no different. In 2021, the newspaper Estado de Minas reported that cases of acquired syphilis in Ponte Nova had risen from 92 to 113 cases per year. According to the 2022 demographic census, the population of Ponte Nova - MG reached 57,776 inhabitants. With the population growth in the municipality, it is inferred that the tendency is for acquired syphilis to continue affecting more and more patients. Therefore, the aim of this study was to carry out a comparative analysis of the situation regarding notifications of acquired syphilis in the municipality of Ponte Nova-MG and the rest of the country over the last 12 years. The importance of this study is justified in order to understand the epidemiological profile of acquired syphilis in Ponte Nova/MG.

METHODOLOGY

This research used the descriptive method, with a quantitative and cross-sectional approach. The bibliographic review was carried out using scientific databases: PubMed, Scielo and the Virtual Health Library (VHL), as well as Ministry of Health websites. The descriptors used in the search were: syphilis, incidence and indicators. There was no time limit for the search for articles. The relevant articles were selected by reading the titles and abstracts.

The search for data was carried out using a time series analysis of the occurrence of acquired syphilis in Ponte Nova/MG, between 2010 and 2021, using the variables: gender, ethnicity and age. The research instrument used was the notification records of

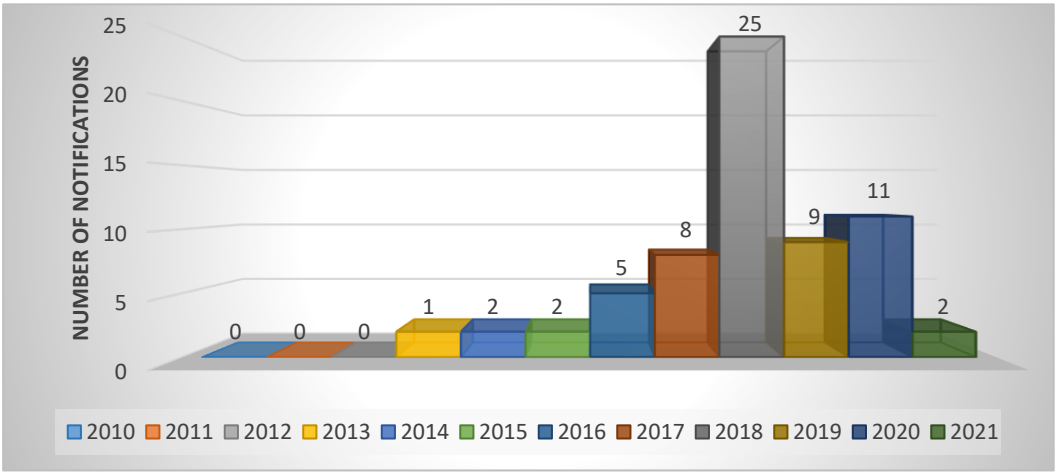
cases of acquired syphilis from the Notifiable Diseases Information System (SINAN) database. The data was collected during the first half of 2022. The age used for the study was 15 years or older, which is the system's minimum age for notifications. After collecting the data, it was tabulated and organized in an Excel spreadsheet for the discussion (Sinan, 2021).

As this was a study using publicly accessible data, there was no need for an ethics committee to assess it, in accordance with Article 1 of Resolution No. 510 of 2016 of the National Health Council.

RESULTS AND DISCUSSION

In order to carry out a comparative analysis between the situation in Ponte Nova-MG and the rest of the country, data on the notification of acquired syphilis in Brazil over the last decade was sought. The results were organized in graphs to facilitate comparison between the different years.

Figure 1: Notifications of acquired syphilis recorded electronically in the last 12 years in the municipality of Ponte Nova-MG

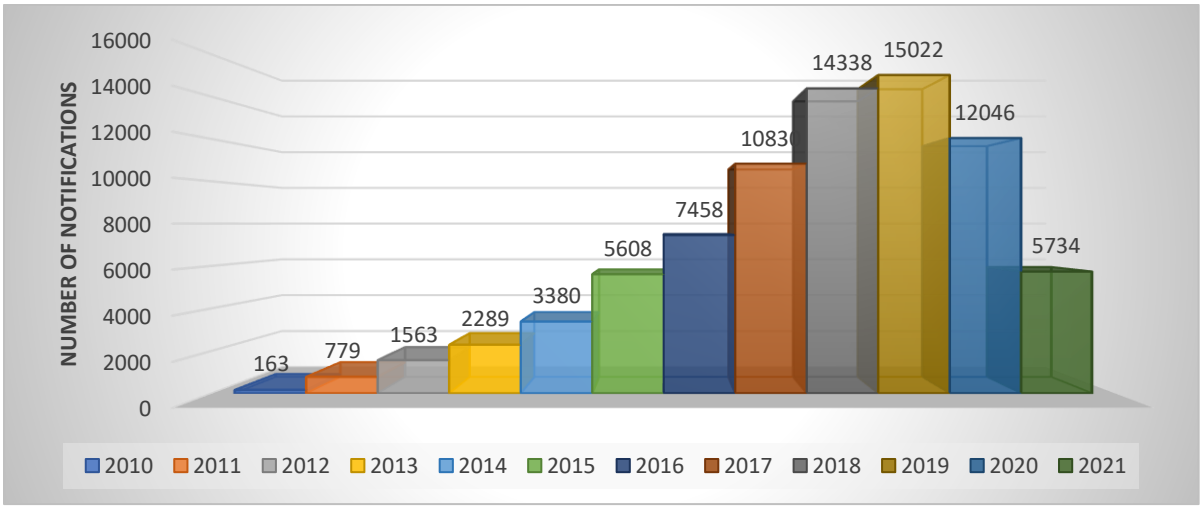


Source: Data obtained from Sinan

Analyzing figure 1, with data from the last decade at municipal level, it can be seen that the number of notified cases is very low, going against what was expected, since the Ministry of Health's epidemiological bulletin released in October 2020 points out that syphilis continues to have a high incidence throughout the country. Data from the municipality of Ponte Nova/MG (figure 1) show that notification at municipal level began in 2013, since it is inconceivable to accept that there were no cases of acquired syphilis in the municipality in previous years. In 2018, about five years after the first notifications were made, there was a considerable increase compared to 2013 and the following years.

In addition to organizing municipal notification data, a survey of notifications in the state of Minas Gerais was carried out. There was a higher number of notifications in 2018 and a significant drop in notifications in 2021, as shown in figure 2.

Figure 2: Notifications of acquired syphilis recorded electronically in the last 12 years in the state of Minas Gerais



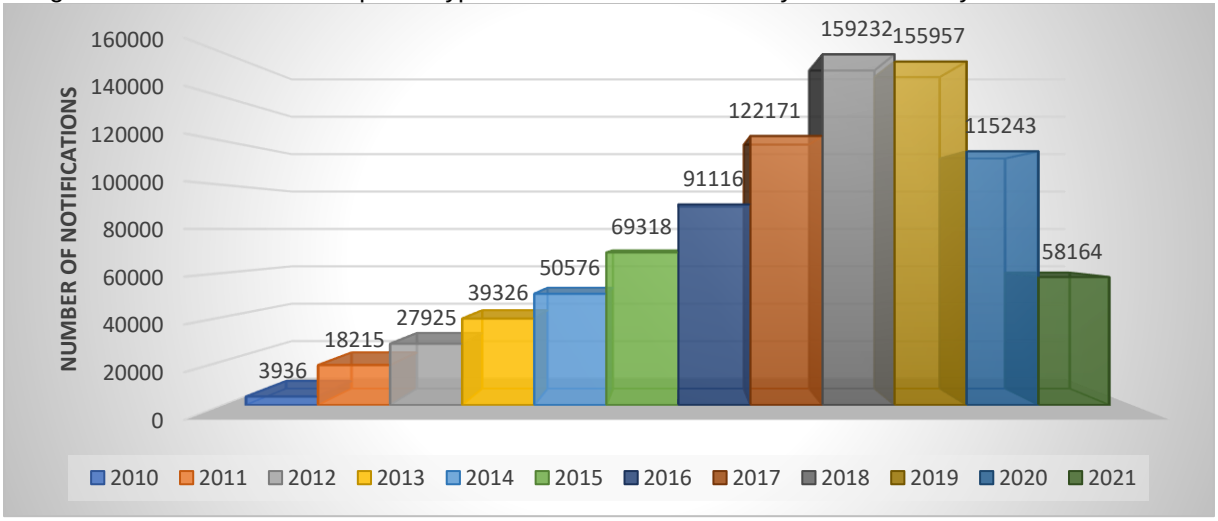
Source: Data obtained from Sinan

Comparing the number of cases in Ponte Nova (figure 1) with the number of cases in Minas Gerais (figure 2), it can be seen that in 2018, even with the introduction of rapid tests for syphilis in health centers, Ponte Nova still had a very low number of notifications compared to the results for the whole state, corresponding to 0.17% of the total number of syphilis cases notified in the state that year. These figures may be low due to possible under-reporting. This information is based on the low number of notifications between

2013 and 2015, which goes against the annual warnings issued by the Ministry of Health about the increase in the incidence of syphilis. Underreporting makes it impossible to know the true situation of acquired syphilis, which is detrimental to actions to control the disease, since these actions are based on data from notifications entered into the system (SINAN, 2020).

Figure 3 shows the reported cases of syphilis in the country in absolute figures.

Figure 3: Notifications of acquired syphilis recorded electronically in the last 12 years in Brazil



Source: Data obtained from Sinan

Looking at figure 3, it is clear that 2018 was the year with the highest number of syphilis notifications over the last decade. The lowest number of notifications occurred in 2011; however, it can be seen that in 2021 there was a notable decrease in reported syphilis cases, going against the trend of the decade.

According to the Epidemiological Bulletin released by the Ministry of Health in 2020, 115,371 cases of acquired syphilis were reported on SINAN (detection rate of 54.5 cases/100,000 inhabitants). The National Epidemiological Bulletin highlights that of these, 12,052 cases of acquired syphilis were reported in Minas Gerais (BRASIL, 2021). The bulletin released by the Minas Gerais State Health Department points out that in 2020, 12,749 cases of acquired syphilis were reported in the state of Minas Gerais, 92 of which (0.7%) were in Ponte Nova (MINAS GERAIS, 2021). The divergence of data can also prevent knowledge of the true situation of acquired syphilis in the municipality, hindering disease control actions, as these are based on SINAN notification data.

According to the Minas Gerais State Health Department's Epidemiological Bulletin, there has been a reduction in syphilis cases in Minas Gerais. In 2020, compared to 2019, the reduction was 26.6% in the detection rate of acquired syphilis, 0.9% in the detection rate in pregnant women and 9.4% in the incidence rate of congenital syphilis, which may have occurred due to underreporting of cases on SINAN, due to the local mobilization of health professionals caused by the Covid-19 pandemic (MINAS GERAIS, 2021).

The Ministry of Health, through the Technical Manual for the Diagnosis of Syphilis, emphasizes the need for health professionals to know the guidelines for diagnosing syphilis, how to perform rapid tests and the procedure for making proper notifications (BRASIL, 2021).

It is important to emphasize the importance of health professionals knowing the legislation in force, so that they can commit themselves to transmitting truthful information in real time in order to combat the disease effectively.

CONCLUSION

The data collected during the literature review showed an upward trend in syphilis case notifications in Brazil, Minas Gerais and Ponte Nova over the last 12 years. In 2020 and 2021 there was a very low number of municipal notifications compared to the results for the whole state. It is inferred that this is due to possible underreporting. Another hypothesis is that due to the preoccupation with COVID-19, the other notifiable diseases have taken a back seat, both on the part of health professionals and patients.

It is important to emphasize that this reality can hinder knowledge of the true situation of acquired syphilis in the municipality, jeopardizing disease control actions, which should be based on SINAN notification data.

The relevance of this study is that it demonstrates the importance of properly reporting syphilis so that health actions can be planned effectively. It is suggested that field studies be carried out, with data collected from the municipal basic health units in

order to find out the real situation regarding the incidence and prevalence of this infectious disease in the municipality.

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