

ORIGINAL ARTICLE

NOTIFICATION OF SYPHILIS ACQUIRED IN A REGIONAL HEALTH SUPERINTENDENCE OF SOUTH MINAS GERAIS*

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ABSTRACT

Objective: To evaluate the notifications of syphilis cases acquired at a Regional Health Superintendence of Southern Minas Gerais.

Method: A descriptive-analytical cross-sectional study of the 294 syphilis cases reported between January 2010 and June 2017. In the collection an instrument elaborated by the researchers was used and the data were analyzed with the Pearson chi-square test and Fisher's exact test. Odds ratio variables were estimated with a confidence interval of 95%.

Results: There was a higher frequency of people aged 20 to 35 years old, 162 (55.1%); male, 203 (69%); complete high school education, 58 (19.7%); non-treponemal reagent test result, 256 (87.1%), 156 (53.1%); tertiary phase clinical classification, 89 (30.3%). The gender variable was significantly associated with sexual behavior ($p < 0.001$).

Conclusion: The assessment of the notifications was achieved, which may favor early detection, appropriate diagnosis and prompt treatment to the person.

DESCRIPTORS: Health Information Systems; Disease Notification; Syphilis; Epidemiological Monitoring; Nursing.


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NOTIFICAÇÃO DA SÍFILIS ADQUIRIDA EM UMA SUPERINTENDÊNCIA REGIONAL DE SAÚDE DO SUL DE MINAS GERAIS

RESUMO

Objetivo: avaliar as notificações dos casos de sífilis adquirida em uma Superintendência Regional de Saúde do Sul de Minas Gerais.

Método: estudo transversal-descritivo-analítico dos 294 casos de sífilis notificados entre janeiro de 2010 e junho de 2017. Na coleta utilizou-se um instrumento elaborado pelos pesquisadores e os dados foram analisados com os testes Qui-quadrado de Pearson e Exato de Fisher. Estimou-se o odds ratio das variáveis, com o intervalo de confiança de 95%.

Resultados: observou-se maior frequência de pessoas com faixa etária de 20 a 35 anos, 162 (55,1%); sexo masculino, 203 (69%); escolaridade de ensino médio completo, 58 (19,7%); resultado do teste não-treponêmico reagente, 256 (87,1%), 156 (53,1%); classificação clínica em fase terciária, 89 (30,3%). A variável sexo apresentou associação significativa com o comportamento sexual ($p < 0,001$).

Conclusão: a avaliação das notificações foi alcançada, o que pode favorecer a detecção precoce, o diagnóstico apropriado e o tratamento imediato à pessoa.

DESCRITORES: Sistemas de Informação em Saúde; Notificação de Doenças; Sífilis; Monitoramento Epidemiológico; Enfermagem.

NOTIFICACIÓN DE SÍFILIS HECHA EN UNA SUPERINTENDENCIA REGIONAL DE SALUD DEL SUR DE MINAS GERAIS

RESUMEN

Objetivo: evaluar las notificaciones de los casos de sífilis adquirida en una Superintendencia Regional de Salud del Sur de Minas Gerais.

Método: estudio trasversal, descriptivo y analítico de los 294 casos de sífilis notificados entre enero de 2010 y junio de 2017. Se obtuvieron los datos por medio de un instrumento creado por los investigadores y se los analizaron por medio de los tests Chi cuadrado de Pearson y Exato de Fisher. Se estimó el odds ratio de las variables, con el intervalo de confianza de 95%.

Resultados: se observó mayor frecuencia de personas en la franja etaria de 20 a 35 años, 162 (55,1%); sexo masculino, 203 (69%); escolaridad de enseñanza secundaria completa, 58 (19,7%); resultado del test no treponémico reagente, 256 (87,1%), 156 (53,1%); clasificación clínica en fase terciaria, 89 (30,3%). La variable sexo presentó asociación significativa con el comportamiento sexual ($p < 0,001$).

Conclusión: se alcanzó la evaluación de las notificaciones, lo que sí puede favorecer la detección precoz, el diagnóstico apropiado y el tratamiento inmediato a la persona.

DESCRIPTORES: Sistemas de Información en Salud; Notificación de Enfermedades; Sífilis; Monitoreo Epidemiológico; Enfermería.

INTRODUCTION

It is known that there are relevant factors in the transmissibility of syphilis related to social, biological, cultural and behavioral aspects of individuals. Such factors may interfere with the determination of the disease and the search by the affected people for diagnostic and treatment services.⁽¹⁾

Syphilis persists as a public health problem, although its etiological agent was discovered centuries ago; despite the existence of reliable and affordable diagnostic methods, including rapid tests; and of the cost-effective therapy available.⁽²⁾

The latest data published by the World Health Organization (WHO) shows an estimated 12 million new cases of syphilis per year worldwide and, between 2016 and 2017 there was a 31.8% increase in the number of cases in the sexually active Brazilian population.⁽³⁻⁴⁾

The Ministry of Health (MoH) recommends that health professionals, especially doctors and nurses, be able to recognize the clinical manifestations of syphilis, to interpret laboratory test results and to monitor the treatment response through health surveillance services. But the professionals are not always prepared to approach these individuals in the health services.⁽⁵⁾

When syphilis carriers and reinfections are not adequately treated, there may result a certain the risk of bacterial resistance. Thus, the next infection may progress to the more severe forms, i.e., the secondary and tertiary phases. Moreover, there is a risk of progression to pelvic inflammatory disease for women, and to infertility for women and men.⁽⁶⁾

In Brazil, over the past five years, there has been a steady increase in the number of cases of acquired syphilis.⁽⁷⁾ It is up to the public health policy managers to strengthen actions to control syphilis, with early screening, diagnosis and treatment strategies, preventing complications, smoothing morbidity, aiming at a better quality of the sexual and reproductive health of the population.⁽⁸⁾

Thus, due to the incipient studies on acquired syphilis and the recent insertion of this condition as a disease of compulsory notification, knowledge of the epidemiological profile of patients with syphilis is important for the population, for the health professionals, including nurses, and for the public health policies. This is due to the fact that early detection enables immediate diagnosis and treatment, to the affected people and their partners, and orientation of prevention practices that can prevent the disease progression, breaking the chain of transmission.

Thus, this study aimed to evaluate the reports of cases of acquired syphilis registered in a Regional Health Superintendence (*Superintendência Regional de Saúde, SRS*) of Southern Minas Gerais.

METHOD

This is a cross-descriptive-analytical study, developed in an SRS of Southern Minas Gerais, covering 26 municipalities, with an approximate population of 460 thousand inhabitants.

The study population consisted of all cases of acquired syphilis reported in the referred SRS between January 2010 and June 2017, accompanied by the investigation form, counting 294 tokens. This period was chosen because the notification of acquired syphilis began in 2010 and due to the data collection period that occurred from August to December 2017.

For data collection, an instrument developed by the researchers was used, based

on the investigation form recommended by the State Health Department. This instrument consists of three parts: sociodemographic data, with 10 variables; clinical and laboratory data, with 5 variables; and case evolution, with 2 variables.

The SRS requested that each municipality belonging to the micro-region send, via e-mail, the scanned investigation files, with the individual data of each patient (name and address) hidden. In possession of these, forms were extracted from the information and recorded in the instrument which, upon complete completion, was held by the researchers for further analysis of the data.

The collected data were grouped in a database using a spreadsheet. Double-typing was performed to avoid possible transcription errors and, for descriptive statistical analysis, the Statistical Package for the Social Sciences (SPSS), version 20.0, was used. The Pearson Chi-square test and the Fisher's Exact test were used with a significance level of 5%. After the analyses, the odds ratio of the evaluated variables was estimated with a 95% confidence interval.

This study was approved by the Research Ethics Committee by means of Opinion No. 2,197,263.

RESULTS

It was found that from January 2010 to June 2017 294 notifications were sent with acquired syphilis investigation forms. The most frequent year of notification was 2016, with 69 (23.5%) research sheets; and the year with the most diagnoses was 2015, with 66 (22.4%) cases.

It was found that the most frequent age group was 20 to 35 years old, with 162 (55.1%) notification forms (mean value of 30.73 years old and median of 28 years old), followed by 36 to 50 years old, with 54 (18.4%) tokens. Regarding gender, 203 (69%) individuals were male. The white race/skin color corresponded to 157 (53.4%) investigations, followed by brown, with 83 (28.2%).

Regarding schooling, the notified and investigated individuals have completed high school, totaling 58 (19.7%) of the notification forms, followed by 5th to 8th grade of incomplete elementary school, with 54 (18.4%) of the forms. Regarding the dwelling zone, 261 (88.8%) of the records indicated the urban zone; home occupation corresponded to 34 (11.6%) cases, followed by general services, with 30 (10.2%) and students with 28 (9.5%) of the notification forms.

According to the research files analyzed, 39 (13.3%) cases of syphilis had a history of this disease. Of these cases, the treatment was performed on 30 (76.9%) people, as shown in Table 1.

Table 1 – Distribution of the Regional Health Superintendence's investigation forms, notified from January 2010 to June 2017, according to the variables "history of syphilis" and "treatment performed". Alfenas, MG, Brazil, 2017 (continues)

Variables	n	%
Syphilis background		
Not filled	11	3.7
No	210	71.4
Yes	39	13.3

Unknown	34	11.6
Treatment performed [†]		
Yes	30	76.9
No	7	17.9
Unknown	2	5.1

[†] Only records that filled in the "yes" field for the syphilis antecedents variable (n=39).

When assessing the investigation forms according to the variable of sexual behavior, it was found that the cases of acquired syphilis reported and investigated were 120 (40.8%) individuals (men and women) who have sex with men; 110 (37.4%) people (men and women) who have sex with women; and 16 (5.4%) cases (men and women) with a history of relationships with both men and women.

It was found that the gender variable was significantly associated with sexual behavior, i.e., cases of acquired male syphilis are more likely to have sexual behavior for sexual relations with men and women, as shown in Table 2.

Table 2 – Analysis of the factors associated with sexual behavior (sex with men and sex with men and women), according to the variable "sex". Alfenas, MG, Brazil, 2017

Variable	Sexual behavior		p-value	OR [†]	95% CI [‡]
	Sex with men	Sex with men and women			
Gender					
Male	49 (79.0%)	13 (21.0%)	<0.001 §	1.000	0.007 - 0.431
Female	69 (98.6%)	1 (1.4%)		0.055	

[†] OR=Odds ratio. [‡] CI=Confidence Interval (lower/upper). [§] Application of Fisher's Exact Test.

It was found that 256 (87.1%) of the evaluated cases had non-treponemal reagent test results. Among them, it was found that the reported cases presented different titrations. Regarding the result of the treponemal test, 156 (53.1%) investigation files had a reagent result, as shown in Table 3.

Table 3 – Distribution of the Regional Health Superintendence investigation forms, notified from January 2010 to June 2017, according to the variables "non-treponemal test result", "titrations" and "treponemal test result". Alfenas, MG, Brazil, 2017 (continues)

Variables	n	%
Non-treponemal test result		
Not filled	18	6.1
Reactive	256	87.1
Non-reactive	5	1.7

Not performed	14	4.8
Unknown	1	0.3
Titrations †		
Not filled	21	8.2
Titration 1 to 8	87	34
Titration 16	44	17.2
Titration 32/36	46	18
Titration 64	42	14.3
Titration 128 or more	16	6.3
Treponemal test result		
Not filled	36	12.2
Reactive	156	53.1
Non-reactive	13	4.4
Not performed	70	23.8
Unknown	19	6.5

† Only records that had the reagent field filled in for the non-treponemal test result variable (n=256).

When verifying the distribution of acquired syphilis cases according to the clinical classification variable, it was found that 89 (30.3%) individuals had the disease in its tertiary phase. The most common treatment regimen was 7,200,000 IU of benzathine Penicillin G, corresponding to 111 (37.8%) cases. Regarding the final classification of the cases, 233 (79.3%) were confirmed cases of acquired syphilis patients, as shown in Table 4.

Table 4 – Distribution of the Regional Health Superintendence's investigation forms, notified from January 2010 to June 2017, according to the variables "clinical classification", "treatment scheme performed" and "final case classification". Alfenas, MG, Brazil, 2017 (continues)

Variables	n	%
Clinical classification		
Not filled	43	14.6
Primary	76	25.9
Secondary	36	12.2
Tertiary	89	30.3
Latent	22	7.5
Unknown	28	9.5
Treatment scheme performed		
Not filled	27	9.2
Benzathine Penicillin G; 2,400,000 IU	87	29.6
Benzathine Penicillin G; 4,800,000 IU	18	6.1
Benzathine Penicillin G; 7,200,000 IU	111	37.8

Other scheme	10	3.4
Not performed	25	8.5
Unknown	16	5.4
Final case classification		
Not filled	51	17.3
Confirmed	233	79.3
Excluded	10	3.4

The variables age, schooling and area of residence were not significantly associated with sexual behavior (respectively, $p=0.749$, $p=0.528$, $p=0.608$). The variables age, gender, schooling and area of residence also did not present any significant association with history of syphilis ($p=0.377$, $p=0.152$, $p=0.143$, $p=0.143$, respectively) or with clinical classification ($p=0.970$, $p=0.622$, $p=0.066$, $p=1.000$, respectively). There was no significant association between the antecedent syphilis variable with the sexual behavior variables ($p=1.000$) and the sexual behavior variable with the clinical classification variable ($p=0.821$).

DISCUSSION

In this study, the sample consisted of cases in the age group of 20 to 35 years old, male/white, with complete high school education, urban area as housing and occupation of the home. These findings are similar to the results of other studies,⁽⁹⁻¹²⁾ presented below.

In an investigation conducted in Germany, 94% of the reported cases were found to be male.⁽⁹⁾ In a survey conducted in São Paulo there was male predominance: 97.8%. Thus, it is clear that men are more affected by syphilis compared to women, even in other countries.

In the same study, there was a higher frequency of the age group from 25 to 34 years old, 40.3%; 33.4% of complete high school education and white, with 59.9% of the cases evaluated.⁽¹⁰⁾ In a survey conducted in Bahia with 33,665 individuals, in 100% of the cases of acquired adolescent syphilis it was observed that they lived in the urban area.⁽¹¹⁾

In a study conducted in New York in 2015 with a population of 2805 men with syphilis, it was found that 4% of them had more than one diagnosis of syphilis, and that 67.2% of the men had sex with men and its lower proportion was 13.3% of men who had sex with women.⁽¹²⁾ In the present investigation, 13.3% of the evaluated cases had a history of syphilis, and 79.9% of men have sex with men.

Regarding the characteristics of sexual behavior, a study found 88.1% of men who have sex with men,⁽¹⁰⁾ values above what was found in the present research.

Due to the hegemonic gender patterns of society, males are more exposed to the risks of contracting Sexually Transmitted Infections (STIs), as they have a more susceptible sexual behavior associated with initiation of early sex life, exposure to multiple partners, homosexuality and non-use of condoms.⁽¹³⁾

Thus, it is worth reflecting on the social determinants in health that mention a set of information listed in categories of behavioral, biological and circumstantial factors. These factors include living conditions, access to quality education, family nucleus, behavioral attitudes in sexual life, among others, and the existence of psychosocial factors.⁽¹⁴⁾

According to the analysis of the associations of the variables, it was found that males had a significant association with sexual behavior. Thus, it is important to discuss some aspects that may be linked to this association of the highlighted variables.

Data found in the survey conducted in Canada led to the finding that increased syphilis acquired in men may be associated with sexual behavior, with increasing numbers of men who have sex with men, as these causes in this specific group may be multi-factorial and more complex than in other groups.⁽¹⁵⁾

These findings were manifested in a study conducted with adolescents in Bahia, since the multiplicity of sexual partners was more frequent among males, thus increasing the risk of contagion with other STIs, apart from acquired syphilis.⁽¹¹⁾

Over the years, men's sexual behavior has contributed substantially to the increasing number of acquired syphilis cases seen at all ages, but especially among young adults.⁽¹⁶⁾ It is worth adding that men tend to look less for health services because of the difficulties they encounter, such as the opening hours of the services, as they often do not have availability in their daily working lives to schedule appointments or even to wait for the query that can be delayed.⁽¹⁷⁾

In this context, the nurse has the role of encouraging safe behavioral habits in order to break the chain of transmission, as well as to create prevention, education and counseling strategies in order to inform people about the risks of acquiring these infections and their possible complications.⁽¹⁸⁾

Regarding the clinical and laboratory variables, in the present study cases were verified with results of the non-treponemal reagent test, with titration from 1 to 32, clinical classification of the disease in the tertiary phase, with treatment scheme performed with 7,200,000 International Units (IU) of benzathine Penicillin G and final classification as confirmed carriers of acquired syphilis.

In an investigation carried out in São Paulo, of the reported cases of acquired syphilis, 90.6% presented results from the 1/32⁽¹⁰⁾ titrated treponemal reagent test, corroborating the present study.

The most frequent clinical classification was tertiary. A New York survey of disease surveillance records found that only 14% of the men had syphilis in their tertiary phase,⁽¹²⁾ which corroborates the findings of a research conducted in London with men diagnosed with syphilis in its early (primary and secondary) phases.⁽¹⁹⁾

It is noteworthy that the apex of syphilis transmission happens when the infection is in its primary and secondary phase, thus, a well performed screening by the health professionals, especially nurses, and the treatment with follow-up results are paramount to inhibit this transmission.⁽²⁰⁾

Regarding the treatment regimen variable, an international study found individuals who were treated with 2.4 million IU of intramuscular benzathine penicillin, as they were diagnosed with primary and secondary syphilis.⁽²⁰⁾ These findings were discordant with the results of the present study, but are justified by the fact that there is a predominance of people diagnosed with this condition in the tertiary phase.

The MoH recommends the use of penicillin as the drug of choice for the treatment of syphilis. In primary, secondary and recent latent syphilis, which should be up to one year long, the treatment should be carried out with 2.4 million IU of benzathine penicillin G, intramuscularly (IM) and in a single dose (1.2 million IU in each gluteus).⁽⁵⁾ For latent syphilis longer than one year or latent with unknown duration and for tertiary syphilis 2.4 million IU of benzathine penicillin G, IM, with 1.2 million IU in each gluteus should be used, weekly and for three weeks.⁽⁵⁾

However, the authors point out that other treatments may be as effective as penicillin

for treating syphilis, especially if it is in its primary phase. However, patients should be closely monitored, since if this process fails, the condition can be identified prematurely.⁽²¹⁾

The great difficulty to find the approach of the variable of the final classification of the case in the acquired syphilis studies is highlighted. Thus, the comparison of this variable occurred with research studies conducted with congenital syphilis, in which almost all of the evaluated individuals presented the confirmed case.⁽²²⁻²³⁾

Acquired syphilis presents itself as a silent disease, often asymptomatic, contributing to cases that remain difficult to be diagnosed, treated and, consequently, properly reported/ investigated. Thus, if the appropriate treatment and early diagnosis are not offered, this disease can have a negative impact on the patient's life. In addition, it can have social consequences for patients, leading to financial impacts with the use of medicines, removal from work, prejudice from society, among other effects that the disease can bring.⁽²⁴⁾

Thus, if not treated properly, acquired syphilis may progress to subsequent phases of the disease, causing the health impairment in the carrier individual to increase. Thus, early detection and prompt treatment of syphilis are essential to prevent further transmission and control of the disease, as well as to prevent severe complications, providing clarifications to the carrier, especially on aspects related to changes in sexual behavior and risk exposure.⁽²⁴⁾

In this context, it is worth discussing the role of nurses in the counseling activity, as this is a primordial stage in the testing process, for which this professional is the most responsible. There is a need for nurses to offer adequate emotional support in the post-test, and in the implementation of training and continuing education activities focused on this theme, as well as the involvement of other team members.⁽²⁵⁾

Thus, it is necessary that all health professionals involved make comprehensive counseling, using previous sexual histories, and have the attitude of tracking the STIs in the population.⁽²⁶⁾

Still, it is noteworthy that nurses perform numerous activities relevant to the prevention of the STIs. Thus, patients can be referred by this professional, more quickly and effectively, to other levels and health care services.⁽²⁷⁾

The present study had the limitation that only the acquired syphilis investigation forms sent in full to the SRS were evaluated, since in the Notification of Disease Information System the form is not available in its entirety and exists only as one of case completion. In view of this, it is stated that there is an urgent need to insert the original acquired syphilis investigation form in this system since, without the competent data in the system, the MoH may be unable to know the clinical and laboratory data of this population in the state of Minas Gerais.

CONCLUSION

It was concluded that acquired syphilis occurred more in young men, and diagnosed in the tertiary phase. Men were more likely to present a sexual behavior of having relations with and with men and women, and had a wider opportunity to acquire this or any other STI.

Given this, this study contributes to the real knowledge of the epidemiological profile of acquired syphilis, contributing to the construction of information that favors the development of joint actions between the health care services and the managers of each location, in order to offer diagnosis and early treatment to inhibit transmission.

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