

## CONGENITAL SYPHILIS: AN INTEGRATIVE RESEARCH

Sífilis congênita: uma pesquisa integrativa

Sífilis congénita: una investigación integrativa

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### ABSTRACT

**Introduction:** in Brazil, statistics show 937 cases of syphilis infections in the population, each year. What is published about the subject is being questioned. **Objective:** to identify in scientific production what has been produced on Congenital Syphilis. **Method:** integrative bibliographical research. The following steps were taken: identification of the theme and selection of the research question, search in the databases of the Virtual Health Library, where the Latin American and Caribbean Literature in Health Sciences and the Online Search and Analysis of Medical Literature, having as descriptor congenital syphilis, establishment of inclusion and exclusion criteria, evaluation and interpretation of the selected studies. **Results:** seven studies were selected from the Virtual Health Library in the last two years. **Conclusion:** the topic congenital syphilis is comprehensive worldwide. There is much published material on its incidence and prevalence but little publication on prevention.

**Keyword:** congenital syphilis.

### RESUMO

**Introdução:** no Brasil, as estatísticas apontam 937 mil casos de infecções de sífilis na população, a cada ano. Questiona-se o que existe publicado acerca da temática. Objetivo: identificar na produção científica o que tem sido produzido sobre a Sífilis Congênita. **Método:** pesquisa bibliográfica do tipo integrativa. Foram percorridas as etapas: identificação do tema e seleção da questão de pesquisa, busca nas bases de dados da Biblioteca Virtual de Saúde, onde elencou-se a Literatura Latino-americana e do Caribe em Ciências da Saúde, e do Sistema Online de Busca e Análise de Literatura Médica, tendo como descritor sífilis congênita, estabelecimento dos critérios de inclusão e

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exclusão, avaliação e interpretação dos estudos selecionados. **Resultados:** na Biblioteca Virtual de Saúde foram selecionados sete estudos nos dois últimos anos. **Conclusão:** o tema sífilis congênita é abrangente no âmbito mundial. Existe muito material publicado sobre sua incidência e prevalência, mas, pouca publicação sobre prevenção.

**Descritores:** Sífilis congênita.

## RESUMEN

**Introducción:** en Brasil, las estadísticas apuntan a 937 mil casos de infecciones de sífilis en la población, cada año. Se cuestiona lo que existe publicado acerca de la temática. **Objetivo:** identificar en la producción científica lo que ha sido producido sobre la Sífilis Congénita. **Método:** investigación bibliográfica del tipo integrativa. Se realizaron las etapas: identificación del tema y selección de la cuestión de investigación, búsqueda en las bases de datos de la Biblioteca Virtual de Salud, donde se enumeró la Literatura Latinoamericana y del Caribe en Ciencias de la Salud, y del Sistema Online de Búsqueda y Análisis de Literatura Médica, teniendo como descriptor sífilis congénita, establecimiento de los criterios de inclusión y exclusión, evaluación e interpretación de los estudios seleccionados. **Resultados:** en la Biblioteca Virtual de Salud se seleccionaron siete estudios en los dos últimos años. **Conclusión:** el tema sífilis congénita es amplio en el ámbito mundial. Hay mucho material publicado sobre su incidencia y prevalencia, pero, poca publicación sobre prevención.

**Descriptor:** sífilis congénita.

## INTRODUCTION

Congenital syphilis (CS) is the result of hematogenous dissemination of *Treponema pallidum* via placenta of untreated or incorrectly treated infected woman<sup>1</sup>. The risk of fetal involvement depends on the incubation phase of the pregnant woman and on the trimester of pregnancy with transmissibility ranging from 70% to 100%. Therefore, it is recommended that during prenatal follow-up, pregnant women should perform at least twice the Venereal Disease Research Laboratory (VDRL) test at the first visit and at the beginning of the third trimester as well as the moment of childbirth.

Eliminating CS is important for reducing child mortality according to the World Health Organization (WHO), and is part of the eight goals of the Millennium Development Goals. Worldwide, it is estimated that every year 12 million new cases of the disease occur on average. In Brazil, statistics pointed to 937,000 cases of sexually transmitted syphilis infections in the sexually active population each year<sup>3</sup>.

From 2011 to June 2016, there was a considerable increase in the number of syphilis cases in pregnant women nationwide (129,757 cases), indicating an improvement in the epidemiological surveillance system and a probable increase in access to diagnosis. In the same period, there were 79,670 cases of CS. In 2015, there was an incidence rate of 6.5 cases/thousand live births in Brazil and, especially, from 2010, there was a progressive increase in the incidence rates of SC: in 2006, the rate was 2.0 cases / thousand live births; and in 2015 it rose to 6.5 cases / 1,000 live births.

Despite being an easily preventable disease through its diagnosis and treatment accessible to the population, CS represents today a worldwide public health problem and its incidence is increasing considerably every day. Therefore, constant research on the best method of intervention with the population is necessary in order to decrease the occurrence and ensure effectiveness of elimination of the disease over time<sup>5</sup>. In this context, it is important to emphasize that health professionals have their share of contribution to educational actions in health, clarifying in a simple way the disease trajectory, its implications, prevention, treatment and outcomes.

Investigating and discussing this proposal in the professional and academic environment has become a challenge, and its neglect on the part of the population causes serious health problems, especially regarding maternal and child health. In addition, the topic in question is referenced in the National Agenda for Priorities in Health Research, published in 2011, having as priority research related to the vertical transmission of diseases such as syphilis<sup>6</sup>, which justifies this study.

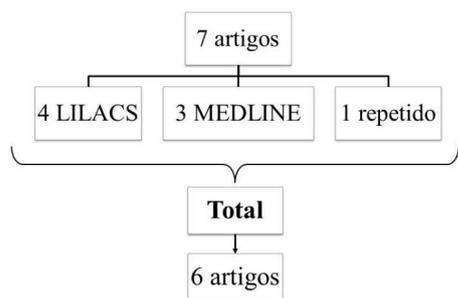
Faced with this finding, the question is: what is published in the country about the theme, in the national and international scientific? In order to answer this question, the present study aimed to identify in scientific production what has been produced about Congenital Syphilis.

## METHOD

This integrative bibliographic research was developed from March to June 2017. The following steps taken to carry out this study: identification of the theme and selection of the research question; search in the databases of the Virtual Health Library (VHL), which listed the Latin American and Caribbean Health Sciences Literature (LILACS), and the Online Medical Literature Search and Analysis System (MEDLINE) using congenital syphilis as keywords; establishment of inclusion and exclusion criteria; and, evaluation and interpretation of the selected studies.

For this study, 2,548 publications on CS were found. As it is a very expressive number of publications, it was decided to delimit the search in the LILACS and MEDLINE listed publications, from 2015 to the current year, by searching for what has been produced in recent years in recent publications. As inclusion criteria, we considered only complete articles available online, in Portuguese, Spanish and English, having delimited research conducted in Brazil. Exclusion criteria were studies from other databases, which were not in article format or articles not available in full form, in other languages and those on studies performed in other countries. After this delimitation, only seven articles were available, as shown in Figure 1, which represents the stages of this search.

**Figure 1** - Flowchart of the search and selection process of studies in the LILACS and MEDLINE databases from 2015 to 2017.



## RESULTS

In the VHL database, seven studies were selected due to the refinement performed for the year of publication (2015 to date). Of these, one was excluded because it was repeated, leaving four from the LILACS database and two from the MEDLINE database. After analyzing the synthesis of each article, a synoptic table was constructed (Chart 1) with the representation of the most relevant data from each study, such as: article, article title / authors, journal / database, study objective, study design and classification according to level of evidence (NI).

**Chart1** - Synoptic chart referring to the bibliographical research on CS. Santa Maria, 2017

Article	Title/ author	Periodical/ Database	Objective of the study	Description of the study	NI
A1	Incidência de sífilis congênita e sua prevalência em gestantes em um município do noroeste do Paraná/ BONI, S. M.; PAGLIARI, P. B.	Saúde e pesquisa (Impr.); 9(3): 517-524, set-dez 2016. LILACS	To analyze the prevalence of syphilis in pregnant women attended in Nova Esperança (PR) between 2013 and 2014 and the incidence of congenital syphilis reported in the same period in the city.	Retrospective descriptive study with data collected from prenatal pregnant women records, with medical request for the Venereal Disease Research Laboratory exam and registration of compulsory CS notifications by the epidemiology sector of the municipality.	VI
A2	Incidência de sífilis congênita e fatores associados à transmissão vertical da sífilis: dados do estudo Nascer no Brasil/ DOMINGUES, R. M. S. M.; LEAL, M. do C.	Cadernos Saúde Pública; 32(6) 2016 Jun. LILACS	The objective was to estimate the incidence of congenital syphilis at birth and to verify the factors associated with vertical transmission of syphilis.	National, hospital-based study, conducted in 2011-2012 with 23,894 postpartum women, through hospital interview, medical record data and prenatal card. Univariate logistic regression was performed to verify factors associated with congenital syphilis.	VI
A3	Sífilis na gestação e fatores associados à sífilis congênita em Belo Horizonte-MG, 2010-2013/ NONATO, S. M. et al.	Epidemiologia e serviços de saúde; 24(4): 681-694, Out.-Dez. 2015. LILACS	To estimate the incidence and factors associated with congenital syphilis in concepts of pregnant women with syphilis treated at the basic health units of Belo Horizonte-MG, Brazil.	Historical cohort study, between November / 2010 and September / 2013; data obtained from electronic medical records; relative risks (RR) and 95% confidence intervals (95% CI) were calculated	VI
A4	Dez anos de sífilis congênita em maternidade de referência na Amazônia brasileira/ ROJAS, M. M. et al.	Revista Paraense de Medicina; 29(1) jan.-mar. 2015. LILACS	To study in a 10-year historical series the cases of congenital syphilis (CS) in a reference public maternity hospital in the Brazilian Amazon.	This is a descriptive, cross-sectional study conducted in the maternity ward of Santa Casa de Misericórdia do Pará, with analysis of medical records of women whose children were diagnosed with syphilis at birth, from 2004 to 2013.	VI
A5	Sífilis gestacional e congênita em Palmas, Tocantins, 2007-2014/ CAVALCANTE, P. A. de M. et al.	Epidemiologia e Serviços de Saúde; 26 (2): 255-264, 2017 Apr-junho MEDLINE	To describe the epidemiological profile of reported cases of syphilis in pregnant women and congenital syphilis in the period 2007-2014, in Palmas-TO.	Descriptive study with data from the National Disease Notification System- Sistema de Informação de Agravos de Notificação (Sinan)	VI
A6	A sífilis congênita e materna na capital do Brasil/ MURICY, C. L.; JÚNIOR, V. L. P.	Revista da Sociedade Brasileira de Medicina Tropical; 48 (2): 216-9, 2015 Mar-abril MEDLINE	This study aimed to describe the epidemiology of congenital and maternal syphilis in the Federal District in 2010.	Retrospective descriptive study was conducted based on the cases registered in the National Disease Notification System	VI

## DISCUSSION

At the end of the search and selection stages, the articles were read in full to compose this discussion. Among the selected articles, there was a prevalence of level of evidence VI, most of which had a retrospective descriptive method (Articles A1, A2, A5 and A6), a cohort study (A3) and a sectional study (A4); four focused on the incidence (A1, A2, A3 and A4) and two focused on the epidemiological profile of CS (A5 and A6).

Regarding the year of publication, three articles were published in 2015, two in 2016 and one in 2017. Regarding the region of study location, it was found that they were carried out, respectively, in a municipality in northwestern Paraná, Belo Horizonte (MG), the Amazon, Palmas (TO) and the Federal District.

Considering the theme, the articles fully described the epidemiology and incidence of CS in Brazil. Study A1 analyzed the prevalence of syphilis in pregnant women between 2013 and 2014 by collecting data from records of pregnant women who underwent VDRL during prenatal care and compulsory notifications of CS during the same period in the municipality of Nova Esperança (PR). The results of this study indicated that the prevalence of CS in the municipality increased during the period described, which demonstrates weaknesses in the care and prevention of diseases provided by the public health network. According to the Ministry of Health, in the last ten years there has been a progressive increase in the incidence rate of CS; while in 2006 it was 2.0 cases / 1,000 live births, in 2015 it rose to 6.5 cases / 1,000 live births<sup>4</sup>.

In the same article A1, the authors mentioned that, to improve the situation, health professionals should participate in health education activities that address and stimulate the forms of disease prevention; carrying out educational activities, as recommended by the Ministry of Health, from the previous diagnosis of syphilis in women of reproductive age to the notification of all cases of CS. Corroborating the first study, article A2 brought a national hospital-based survey of puerperal women and their newborns, from February 2011 to October 2012, which found that the incidence of CS still was very high, along with the vertical transmission rate and negative outcomes such as the up to six-fold higher fetal mortality rate in patients with the disease. Factors related to these data are mainly low maternal education, black skin color and late initiation of prenatal care, as well as fewer appointments and fewer serological tests. Although more than 90% of women in the study received prenatal care, CS remains a public health problem, being related to greater social vulnerability and failure to follow up. According to the Ministry of Health, CS continues as a public health problem and its occurrence shows failures, especially of prenatal care, because early diagnosis and treatment of syphilis in pregnant women and their partners are simple and concrete prevention measures<sup>5</sup>.

As previous studies have shown, article A3 brought high rates of CS associated with factors of low education, late prenatal care, few visits during follow-up, failure to perform serological tests and poor living conditions. These results highlighted gaps in prenatal care and indicated that new strategies such as continuing education of professionals, case discussion, strengthening of epidemiological surveillance, monitoring of VDRL results in pregnant women, and integrated approaches are needed to prevent syphilis, especially CS that is far from being eliminated. For the Ministry of Health, in 2015, 18,938 cases of CS (98.1%) were diagnosed in newborns. The highest percentage of cases occurred in children whose mothers were between 20 and 29 years old (51.8%). Regarding maternal education, it was observed that most had incomplete grades 5 to 8 (24.5%). Regarding race/color of the mothers, the majority declared themselves as brown (54.5%). Regarding access to prenatal care, 78.4% of mothers of children with CS had prenatal care, while 15% did not, and 6.7% had ignored the question<sup>4</sup>.

Article A4 provided a retrospective from 2004 to 2013 of the cases of CS in a reference maternity hospital in the Amazon, with 754 occurrences of the disease recorded during these ten years. The year 2004 pointed to the largest number of cases, however, without any deaths. The annual frequency of deaths of newborns diagnosed with syphilis was more significant in 2006 (8.9%) and 2007 (10.8%), however, this increase cannot be associated only with CS, since prematurity also contributed to the unfavorable outcome in the evolution of the status quo.

Regarding infant mortality from CS in children under one year of age from 1998 to 2015, the number of deaths reported in the Mortality Information System (SIM) was 1,903; In 2015 alone, there were a total of 221 deaths, which corresponds to a mortality coefficient of 7.4 / 100,000 live births. Regarding the region of residence, the North region had the highest index (9.3), followed by the Southeast (8.6), South (6.6), Northeast (6.5) and lastly, Midwest (3.7). Over the past 11 years, the infant mortality rate from SC has increased from 2.4 / 100,000 live births in 2005 to 7.4 / 100,000 live births in 2015 in Brazil.<sup>4</sup> Confirming the studies in Article A4, it is emphasized that more commitment and investment are essential for the control of this problem.

Article A5 portrayed the epidemiological profile of gestational syphilis and SC in the municipality of Palmas, Tocantins, between 2007 and 2014, with data obtained from the Information System of Notification of Disorders (Sinan) fed by compulsory notification forms, completed, by health professionals. During the study period, the annual incidence rate of CS increased from 2.9 to 8.1 cases per 1,000 live births; Among mothers who met the definition criteria for CS, brown women, aged 20 to 34 years old, with incomplete or complete high school education predominated; Of the total cases of CS, 81.4% had prenatal care and of these, 48% were diagnosed

during this period; Most received no treatment (54.4%) and 47% received inadequate treatment, with 83% not having their partners treated.

In recent years, with the improvement of epidemiological surveillance and the expansion of the use of prenatal rapid test use within the Stork Network, there has been an increase in the detection of syphilis in pregnant women, with 21,382 cases of syphilis in pregnant women. in 2013 at Sinan, with a detection rate of 7.4 cases per thousand live births and an increase in cases of CS with an incidence rate of 4.7 cases per thousand live births, despite the existence of Ordinance No. 3161/2011, which provides on the use of penicillin in primary health care units (BHU).<sup>7</sup>

According to the publications described, article A5 emphasized that the results presented indicated fragility and several failures of health services regarding the control of CS, either in the monitoring of pregnant women during prenatal care or in the inadequate treatment of mothers and their partners. Health professionals who work directly with this public need to play their role in a more conscious and participatory manner, with greater involvement and technical preparation, in order to reduce a totally avoidable risk with appropriate treatment and health education of pregnant women and their partners.

Thus, all health professionals should be able to identify the clinical manifestations of syphilis, as well as to interpret the results of laboratory tests that play a fundamental role in infection control and allow confirmation of diagnosis and follow-up of treatment response.<sup>7</sup>

Similar to the research described above, article A6 reported the epidemiology of maternal and congenital syphilis in the Federal District in 2010, based on data collected from cases registered in Sinan. The study resulted in a total of 133 children with SC, registered in 2010, with a disease detection rate of 2 / 1,000 live births and a mortality rate of 0.1 deaths / 1,000 live births by SC, among those domiciled in the Federal District. Of the total children with CS, the highest levels were observed in black-skinned mothers with less than nine years of schooling and most housewives; 87.2% of them underwent prenatal care and 52.6% received confirmed diagnoses during this period. Diagnosis and treatment should be as early and prompt as possible, as immediate treatment for a sexually transmitted infection (STI) is not only a curative action, but also proposes to interrupt the transmission chain and prevent other STIs. complications arising from infections.<sup>7</sup>

It is emphasized that it is extremely necessary for the pregnant woman to be properly informed during prenatal care about the importance of treatment, as the partner's awareness and attendance to the Health Unit often depend

on her. A more dynamic intervention of health services in the health education of pregnant women and their partners is fundamental, because relying exclusively on one partner of the couple can hinder disease prevention strategies (A6). According to the Ministry of Health, all pregnant women and their sexual partnerships should be questioned about STIs and informed about the possibility of perinatal diseases, but the effectiveness of this intervention during pregnancy depends on several factors, such as access to health services, expanded coverage of testing, treatment, grievance, among others.<sup>7</sup>

## FINAL CONSIDERATIONS

At the end of this integrative review research, it was possible to broaden the domain of CS in the Brazilian context and observe, similarly to the findings of the studies, that the incidence rate of CS has been increasing in recent years. This fact revealed that there are failures in the involvement and participation of health professionals in developing health education with the population, especially by those who are directly linked to care for pregnant women.

In addition, as a limitation of the study, it is concluded that the elimination of CS is a daily challenge, it goes beyond treatment, involves emotional, cultural aspects, so it is necessary to talk openly about the subject, continuously orienting, aiming at a greater understanding and adherence in the prevention and control of this infection. In this process, nursing, in particular, develops a fundamental work because it provides guidance and clarifies doubts to expand the knowledge related to care, enabling favorable changes in health.

Thus, it is concluded that the SC theme is very comprehensive worldwide. For this reason there is a vast amount of published material in the scientific area on its incidence, prevalence and epidemiology, but few studies on prevention strategies and health education for the population and health professionals. This gap highlights the need for further research to include approaches to transform reality, with approaches other than biological, involving educational and care issues.

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