

# **EARLY PRENATAL DETECTION FOR SYPHILIS: A SYSTEMATIC REVIEW**

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**Abstract: Objective:** To determine, through a systematic review, the effectiveness for detecting syphilis during prenatal care, identifying the ways of diagnosing pregnant women with Sexually Transmitted Infection, called syphilis. **Method:** Secondary research designed by systematic literature review following the PRISMA 2020 checklist. The choice of studies was based on the descriptors (“Syphilis”; “Pregnancy” and “Prenatal Care”) with the Boolean operators AND and OR. Observational studies were included with no restriction on language and year of publication. The selected outcomes were: early diagnosis, congenital syphilis and perinatal death. **Results:** This review included 9 studies that met the selection criteria. From the analyzed studies, it was evident that the early detection of syphilis is not systematically applied by professional nurses. **Conclusion:** The early detection of syphilis is a public health problem and possibly nurses try to carry out a complete consultation, but the lack of specific policies and professional training make it an incomplete prenatal care. Actions when carried out in an integrated and complete manner, being aligned with public health policies, will have an effective and effective result.

**Keywords:** Syphilis, Early Diagnosis, Nurse, Prenatal care, Gestation.

## INTRODUCTION

Syphilis is a sexually transmitted infection (STI) resulting from the spread of the bacterium *Treponema Pallidum*, of the *Treponemataceae* family. Which has features. Syphilis can be divided into four distinct stages: primary, secondary, tertiary and congenital syphilis. During protosyphiloma, which manifests on average three weeks after infection in the region where it had contact with the spirochetes, it usually does not present pain (LINS et al, 2014). In

cases of gestational syphilis, the Venereal Disease Research Laboratory (VDRL) must preferably be performed in the first trimester of pregnancy, in the third trimester and also when entering the maternity hospital, according to the guidelines of the Ministry of Health. Incomplete or inadequate prenatal care, whether due to late initiation or lack of the pregnant woman’s attendance at the service, is also an important factor to explain several cases of congenital syphilis. Transmission of congenital syphilis can occur through the birth canal if the child comes into contact with syphilitic lesions at the time of birth or during breastfeeding if the mother has a breast lesion due to syphilis and can lead to death or irreversible damage such as Olympic forehead, pointed palate, perioral ragades, saber tibia, Hutchinson teeth and blackberry-shaped molars, keratitis, deafness and mental retardation (BITTENCOURT, 2012). The role of the health team, especially nurses in primary care, is, therefore, essential from the perspective of ensuring comprehensive care from the detection, diagnosis and treatment of syphilis. Considering that nurses have a greater bond with the community, their knowledge about the conduct of this disease can strengthen a favorable outcome, contributing to the development of strategies that considerably reduce the rates of congenital syphilis, fetal death and neonatal death. Prenatal care is an important component of the care provided by the family health teams and constitutes a key moment for the proper management of infections susceptible to vertical transmission, such as syphilis (SILVA, et al, 2018). According to the indicators of the Department of Chronic Diseases and Sexually Transmitted Infections, in the years 2010-2020 there were a total of 783,544 reported cases of syphilis in Brazil, with 125,431 cases affecting pregnant women between 20-29 years old in the first trimester of pregnancy. In view of

the exposure to syphilis, a disease that can be treated and especially in pregnant women, that if the management is not adequate and the incomplete treatment implies harmful effects on the health of the pregnant woman and the fetus. early detection of syphilis during prenatal care.

## METHOD

Scientific research developed using the method as a Systematic Literature Review, it helped during the investigation as it has a checklist format, which contains items that guided the writing of the systematic review. Complete scientific articles, available electronically, that addressed the topic of syphilis in pregnancy were included. Those that were not available and those that did not address similarity functions were disregarded. Observational studies carried out with pregnant women who had attended at least five prenatal consultations and with a positive serological test for syphilis were selected. The primary outcome was early diagnosis and the secondary were congenital syphilis and perinatal mortality. The searches were in PubMed, Cochrane Library, LILACS and SCIELO. All conducted with no language or date restrictions. The selection was made independently among the evaluators. In the first phase, it was verified that each study met the following inclusion criteria: type of study, participants and interventions.

## RESULTS

During the search, 625 articles were found, of which 329 were in the PubMed platform, 252 in LILACS, 35 in SCIELO and 29 in the Cochrane library. Studies that did not contain at least two descriptors in the title were excluded. For reading the abstract, there were 37 articles, and there were 8 left to compose the SR.

## DISCUSSION

The correct management for the early diagnosis of syphilis in pregnant women showed that the lack of knowledge about sexually transmitted infections are mostly neglected during sexual intercourse. Not using condoms to prevent infections also intensify their spread. It seems, however, that pregnancy for some couples is unplanned and when they are, there is a lack of spaces for couples who can be guided for exams before a possible pregnancy. The functioning of network services are failing, their interlocations. The organization of health services when it comes to supplies for collection and test results is necessary for the early management of the presence of syphilis in pregnant women. Brito (2009)<sup>1</sup>, in relation to the difficulties found in the diagnosis of gestational syphilis, points out as the main difficulties for laboratory tests, lack of understanding about the problem of sexually transmitted diseases, which leads to refusal of treatment by partners, which prevents women and their partners from traveling for the tests. According to the Ministry of Health (2012), the system needs to be prepared to implement prevention strategies and immediate therapeutic intervention, guaranteeing inputs, confidentiality and non-discrimination. The study points out as a vector for the outcome of congenital syphilis. Poverty is a complex phenomenon that depends on the accessibility of basic services such as education and health. Groups of people with lower purchasing power have fewer years of school attendance, higher illiteracy rates and worse health conditions. Expressed through indicators such as infant and maternal mortality. In accordance with Primary Care, the gateway into the system allows the CHA to appropriate the ability to understand the moment to establish trusting relationships. It is one of the relevant skills of the ACS. This helps to build the link necessary

Number	Authors/ Year of publication	Title	Kind of study	Platform
1	BRITO, ESV et al. (2009)	Congenital syphilis as an indicator for evaluating prenatal care in the city of Olinda (PE), Brazil	Descriptive study	LILACS
2	SHAHROOK S; MORI R; OCHIRBAT T; GOMI H (2014)	Strategies of testing for syphilis during pregnancy	Observational study	Cochrane library
3	DOMINGUES, RMSM et al (2014)	Prevalence of syphilis in pregnancy and prenatal syphilis testing in Brazil: birth in Brazil study.	Observational study	PubMed
4	FREIRE JÚNIOR et al. (2016)	Screening for syphilis in prenatal care: missed opportunities in a public maternity hospital in Recife, Brazil	Cut study	Gray literature
5	MACHADO, I et al. (2018)	Diagnosis and treatment of syphilis during pregnancy: a challenge for nurses?	Exploratory, descriptive study	LILACS
6	ROSA, LGF; et al (2020)	Analysis of timely screening for syphilis in low-risk prenatal care	Cross-sectional and descriptive study	LILACS
7	FIGUEIREDO, DCMM et al (2020)	Relationship between the supply of syphilis diagnosis and treatment in primary care and incidence of gestational and congenital syphilis	Ecological/ observational study	PubMed
8	BENZAKEN, AS et al (2020)	Adequacy of prenatal care, diagnosis and treatment of syphilis in pregnancy: a study with open data from Brazilian state capitals	Observational study	PubMed

TABLE 1 - STUDIES SELECTED FOR THE RESEARCH

Source: prepared by the author.

for the development of promotion, prevention, control, cure and recovery actions. The findings suggest that there is precariousness in prenatal care, revealing the fragility of the organization of the health care network. In this perspective, the systematic review showed that screening for early detection of syphilis, followed by adequate treatment of the pregnant woman and her partner, must be the reality to reduce the number of cases of gestational and congenital syphilis. Shahrook (2014)<sup>2</sup> describes that testing for syphilis performed in the first trimester and retesting in the third are promising strategies to remedy the risk of syphilis reinfection. Pregnant women screened in the first trimester were significantly different at baseline, as were those with multiple sex partners. The study found that gestational age could be one of the predictors of risks associated with congenital syphilis. It can be reduced by early screening and immediate treatment with pregnant women. In the first prenatal consultation; at the beginning of the 3rd trimester, at the time of childbirth or abortion. That said, it does not depend on previous exams, after exposure with risk of sexual violence. Domingues (2014)<sup>3</sup> brought up as a point of discussion that women with less education, black or brown, and those assisted in public services had the lowest coverage of testing and were the ones with the highest prevalence of syphilis during pregnancy. The late start of prenatal care is one of the barriers to control syphilis during pregnancy, according to the W.H.O. (World Health Organization). This late onset is associated with fewer appointments and fewer routine exams. The study shows that 40.0% of pregnant women had a late start of prenatal care. Many pregnant women may have been diagnosed and treated after the recommended gestational age, aware that the best results for the prevention of vertical transmission of syphilis are obtained when treatment is carried

out between the 24th and 28th gestational week. The inaccessibility compromises the diagnosis and intervention in women with greater risk of vertical transmission of syphilis. The absence of prenatal care for pregnant women is strongly associated with their living and behavioral conditions. Deprivation of care is documented as an enhancer of adverse effects on pregnancy and childbirth among women and newborns, such as congenital syphilis, abortion, stillbirth, neonatal death and prematurity (Macêdo et al, 2020). For this SR, the findings showed care characteristics of pregnant women regarding the performance of the test for syphilis in the prenatal period, signaling for poor surveillance and care, with loss of opportunities for prevention and treatment of congenital syphilis.

There are other studies with the majority of pregnant women who underwent follow-up in the family health strategy, had an adequate number of appointments, with timely request and delivery of exams. Freire Jr (2016)<sup>4</sup> found that the chance of not undergoing at least one VDRL test during pregnancy remained higher for women under the age of 20 years. Multiparas, with three or more pregnancies, who had the last prenatal consultation before the last trimester of pregnancy and attended less than six consultations were impaired in the diagnosis. The survey also showed that more than two-thirds of the women interviewed reported having found it difficult to do the VDRL in laboratories, and identified related challenges: the distance between home and the collection unit; the delay in receiving the exam results; and the existence of long queues. Macêdo et al. (2017) estimated that social inequalities in health in Brazil support the hypothesis that gestational syphilis is related to low socioeconomic status and inadequate prenatal care. Thus, it contributes to the persistence of vertical transmission, exposing the various weaknesses of care,

not only regarding access, but also the opportunity for tracking, diagnosis, treatment of pregnant women and their partners. It is recognized that unsafe sexual practices and lack of social support increase the risk of recurrent infections. Although the findings are not unexpected, this systematic review raises situations that need to be discussed by those involved in prenatal care. The absence or non-compliance with the minimum routine recommended by the Ministry of Health, including counseling actions, epidemiological, pharmacological and laboratory surveillance and tracking of partners compromise the control of syphilis transmission. The loss of these “opportunities” produces a less effective performance by the team and health services, which are unable to provide comprehensive care, affecting the gestational period. The issue of the difficulty of treating the partner has been identified as the main vector of this infection. Machado (2018)<sup>5</sup> observed in his research that benzathine penicillin is available for the treatment, however, it is the only drug therapy with proven efficacy. This is the only drug capable of preventing vertical transmission. The partner must be treated to avoid reinfection of the pregnant woman (Brazil, 2020). Benzathine penicillin can be administered by nursing professionals. And the prescription can also be made by nurses through protocols. Rosa (2020)<sup>6</sup> observed that the profile of pregnant women accompanied in low-risk prenatal care, that the age group, low levels of education and the ethnic and racial characteristics found are worrisome factors in studies dealing with the topic, is related to the higher incidence of gestational syphilis infection and compromising the prevention of CS. The author describes a high number of previous pregnancies among monitored women and, even with the reduced number of cesarean sections and abortions, this scenario reflects the existence of weaknesses in

education activities in sexual and reproductive health. This finding corroborates that adequate prenatal care could not only reduce cases of syphilis that occur during pregnancy, through counseling and encouragement to use condoms, but also if prevalent cases are correctly treated in future pregnancies. For Figueiredo et al. (2020)<sup>7</sup>, the expansion of access to prenatal care in the country in recent years and the actions for early syphilis diagnosis were not enough to reduce cases of congenital syphilis due to important barriers to diagnosis and treatment. Despite advances in access to diagnosis and treatment actions in primary care, the incidence of congenital and gestational syphilis is still far from internationally recommended targets. The data reveal that the efforts made so far have been insufficient to break the transmission chain, which results in a growing trend in the incidence of acquired, gestational and congenital syphilis in all regions of the country. Benzaken (2020)<sup>8</sup> shows that inadequate prenatal care for mothers under 20 years of age was twice as high and the odds for non-white mothers, women without a partner with less education over 4 years. The vulnerability of pregnant women with syphilis was greater than that of the population represented in the SINASC data. Women who receive inadequate prenatal care and, when exposed to syphilis, show the need for a closer approach to this population, in order to compensate for the exposure. Other factors associated with vulnerability, such as poverty, violence and inequality, enable strategies aimed at reaching these women. The ESF can play a positive role in this situation, as long as the health teams are working in the poorest communities.

## CONCLUSION

The study on early detection of syphilis in pregnant women showed that there are tests and rapid tests that must and are performed

during pregnancy for the early diagnosis of the disease. The impossibility of following up on the treatment of the disease is related to the lack of training of professionals, the non-adherence of pregnant women to the treatment and the delay in response time by the laboratories to confirm the result of syphilis. The survey also showed that more than two-thirds of the women interviewed reported having found it difficult to do the VDRL in laboratories, and identified related challenges: the distance between home and the collection unit; the delay in receiving the exam results; and the existence of long queues.

The loss of these opportunities produces a less effective performance by the team and health services, which are unable to ensure comprehensive care, with repercussions for the pregnant woman and the fetus. As for the difficulty of the partner's treatment, it has been identified as the main vector of this infection. This finding corroborates that adequate prenatal care could not only reduce cases of syphilis that occur during pregnancy, through counseling and encouragement to use condoms, but also if prevalent cases are correctly treated in future pregnancies.

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