CONGENITAL SYPHILIS: approach and management of the newborn by the nursing team in

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ABSTRACT

Congenital syphilis is still a disease that is present today and has a high capacity to harm the mother-baby binomial if left untreated. To do this, the nursing team, which is directly involved with people at all levels of care, has to help. The aim of this study was to evaluate the nursing team's approach to and management of newborns diagnosed with congenital syphilis in a maternity hospital in the northwestern region of the state of Espírito Santo. This is a descriptive study with a qualitative and quantitative approach, in which interviews were conducted with nursing staff and 171 medical records of pregnant women with syphilis were analyzed. It was concluded that there are shortcomings in prenatal care, since 25.14% of pregnant women had only 1 to 5 appointments and 4.09% had no appointments at all. In addition, 69% of their partners had not undergone treatment for syphilis or had done so inadequately. Analyzing the babies of the 171 women, we identified 30 premature babies, 7 with neurosyphilis, 35 with low birth weight and 1 death. This shows that the nursing team plays an important role in the prevention, diagnosis and treatment of congenital syphilis, as well as in the approach and management of infected newborns, in order to improve this public health situation.

Keywords: *Neonate; care; diagnosis; treatment.*

1 INTRODUÇÃO

Syphilis is a Sexually Transmitted Infection (STI) characterized as a chronic systemic infectious disease. Its etiological agent is the bacterium *Treponema pallidum.* Transmission of this disease occurs through unprotected sexual intercourse, contact with lesions caused by the disease itself, blood transfusions and the transplacental route. The latter, in turn, characterizes the so-called congenital syphilis (Almeida *et al.* 2021; Avelleira; Bottino, 2006; Magalhães *et al.,* 2013).

Congenital syphilis (CS), on the other hand, is the infection that occurs in the fetus via transplacental transmission, also known as vertical transmission, and the

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baby can be affected at any gestational stage. It is known, however, that the chances of fetal infection are higher in the late stage of infection, due to the large amount of circulating *Treponema pallidum*, and the chances decrease as the disease progresses to the late stage. Thus, the main factors that determine the likelihood of infection are the stage of the disease in the mother and the length of time the fetus has been exposed to the infection in the mother's womb (Domingues, *et al.* 2021).

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It should be noted that if the baby is not diagnosed and treated early, there are many consequences such as death, miscarriage, low birth weight, hepatosplenomegaly, neurological, cardiovascular, bone and skin lesions, among other alterations. In addition, it is worth mentioning that these manifestations can occur up to the age of two, characterizing early CS or, after the age of two, late CS. For this reason, there is a need for quality prenatal care, as well as a watchful eye on the part of the nursing team to prevent the disease as well as the positive outcome of diagnosed cases (Estácio, 2019; Silva, *et al.,* 2011).

In view of the above-mentioned aspects, the focus of this article will therefore be on analyzing the nursing team's approach and management of newborns diagnosed with congenital syphilis in a maternity hospital in the northwestern region of the state of Espírito Santo.

2 MATERIALS AND METHODS

This is a descriptive study with a qualitative and quantitative approach. Initially, we searched for bibliographies, scientific articles and journals that dealt with syphilis, syphilis in pregnant women and congenital syphilis. After this initial research, medical records from the years 2018 to 2020 were analyzed, a total of 171 medical records, of patients with names contained in the compulsory notification form of a hospital in the northwestern region of Espírito Santo. Data was collected on the age of the pregnant woman, gestational age, weight of the baby, number of prenatal consultations, treatment of the pregnant woman and her partner, and medication used for treatment.

Individual interviews were also carried out with 35 professionals from the nursing team, 15 of whom were nurses and 20 nursing technicians. The questionnaire contained five questions, three discursive and two objective. They covered the following topics: health education practices, recommendations for testing pregnant women, factors that lead to syphilis outcomes, the most common signs and symptoms in neonates and nursing procedures for neonates. Participants were previously informed about the objectives and procedures of the research, as well as the reliability of the data and the anonymity of their collaboration. The voluntary nature of the research was also emphasized, leaving them free to choose whether or not to take part.

The content of the interviews was subjected to the Thematic Content Analysis technique (Bardin, 2011), which is a set of qualitative communication analysis techniques aimed at obtaining indicators that allow the inference of knowledge regarding the conditions of production/reception of the messages. The results were analyzed and tabulated in the form of graphs and tables and discussed in accordance with the ideas of authors who highlight the subject.

The analysis of the medical records and the interviews with the nursing professionals took place in accordance with the substantiated opinion No. 5.356.663 of the Research Ethics Committee of the Centro Universitário do Espírito Santo.

3 RESULTS AND DISCUSSION

Thirty-five nursing staff took part in the interview, 15 nurses and 20 nursing technicians. Of the nurses interviewed, 40% were from the Neonatal Intensive Care Unit (NICU), 33.33% from the maternity ward and 26.66% from pediatrics, and more than half (53.33%) had been working for less than a year. Of the nursing technicians interviewed, 60% were from the NICU, 20% from maternity and 20% from pediatrics, and 30% of these professionals had been working for 4 years or more.

The questionnaire was made up of five questions covering the following topics: health education practices, recommendations for testing pregnant women, factors that lead to syphilis outcomes, the most common signs and symptoms in neonates and nursing procedures for neonates with syphilis.

When asked about their health education practices, the professionals reported advising patients on the following aspects: the importance of treatment, protection in sexual relations, prenatal care, advice on participating in educational programs on syphilis, clarification of the causes of syphilis and its prevention, advice on the medication used in treatment and the consequences of not taking it, advice on keeping proof of treatment and the importance of testing for syphilis.

It should be emphasized that it is recommended that pregnant women be tested for syphilis, either by a rapid test or by the *Venereal Disease Research Laboratory* (VDRL), ideally at the beginning of the first trimester and the third trimester of pregnancy, with the aim of early diagnosis of the disease (Brazil, 2006). When asked about this recommendation, 28 of the 35 professionals (80%) responded appropriately, reporting that they were tested for syphilis at the beginning of the 1st and 3rd trimesters of pregnancy.

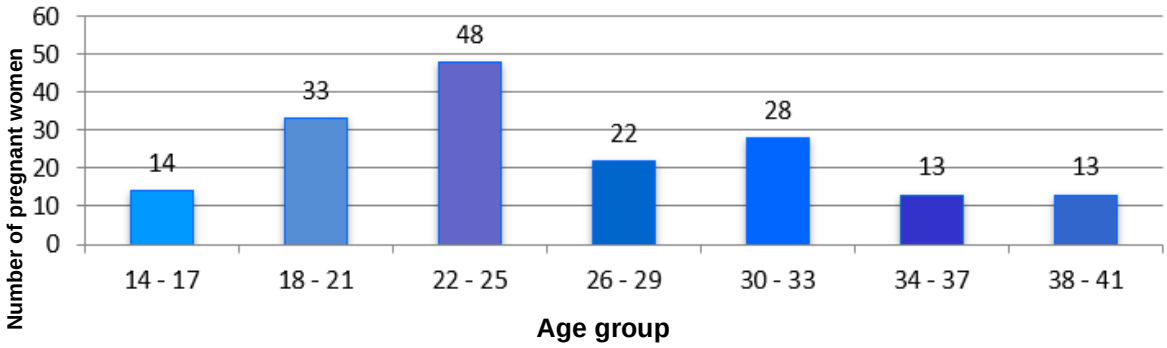
As for the question about the factors that lead to syphilis outcomes, there were four alternatives: discontinuation of treatment, late start of prenatal care, lack of treatment for the partner and lack of information about syphilis. Among the nursing technicians, the factor that most led to syphilis outcomes was the late start of prenatal care, while among the nurses the relevant factor was discontinuation of treatment.

According to the professionals, the signs and symptoms that are most commonly found in newborns with syphilis are: jaundice, skin changes such as peeling and white and red spots; low weight, prematurity, respiratory problems, malformation of long bones, peribuccal cleft, fever, nasal discharge, eye discharge and neurological changes.

With regard to the nursing procedures carried out on neonates, the nursing technicians pointed out the following: measuring vital signs, recording signs and symptoms, administering medication, notifying cases, offering (**Age group**) out venous access and monitoring examinations. The nurses, on the other hand, reported performing the following nursing procedures: peripheral venous access, vital signs, bladder catheterization, collection of laboratory tests, assisting in the collection of cerebrospinal fluid, eye and nostril hygiene and peripherally inserted central venous catheter (PICC) puncture.

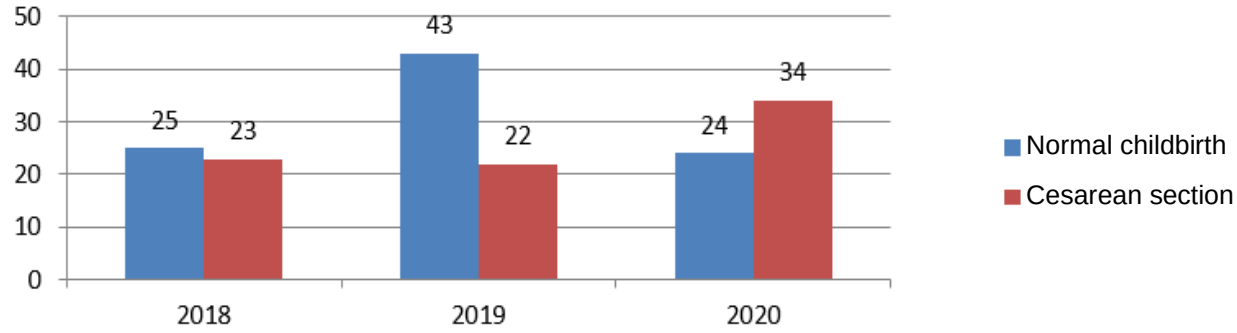
Given the above information, it is clear that the nursing team is directly involved and plays an important role when it comes to cases of syphilis, as well as congenital syphilis. This is because nurses and nursing technicians are in contact with pregnant women until after the baby is born, which means they have a long time to deal with syphilis. During this period there is the capacity to carry out tests, treat the pregnant woman with the appropriate medication, test the baby after birth and treat it if necessary. In all these stages, the nursing team is active and is a key player in the prevention and resolution of this disease (Souza *et. al.,* 2018).

With regard to the medical records analyzed from 2018 to 2020, it should be noted that in 2018 there were 48 pregnant women with syphilis, in 2019 there were 65, and in 2020 there were 58, totaling 171 pregnant women. The age distribution of these women was predominantly between 22 and 25 years old, as shown in Graph 1:



Graph 1 - Number of pregnant women by age group
Source: The authors

With regard to the number of normal deliveries or cesarean sections of the pregnant women analyzed, in 2018 there were 25 normal deliveries (52.08%) and 23 cesarean sections (47.91%). In 2019, there were 43 normal deliveries (66.15%) and 22 cesarean sections (33.84%). In 2020, there were 24 normal deliveries (41.37%) and 34 cesarean sections (58.62%), as shown in Graph 2:



Graph 2 - Number of normal deliveries and cesarean sections of pregnant women with syphilis in 2018, 2019 and 2020
Source: The authors

Of the 171 babies analyzed, 30 were premature, born with a gestational age of less than 37 weeks. In addition, there were 7 cases of neurosyphilis, 1 death after birth and 35 babies with low birth weight (<2500g). Table 1 shows the relationship between gestational age and the weight range of the newborns. It can be seen that the most frequent gestational age is between 39 and 40 weeks.

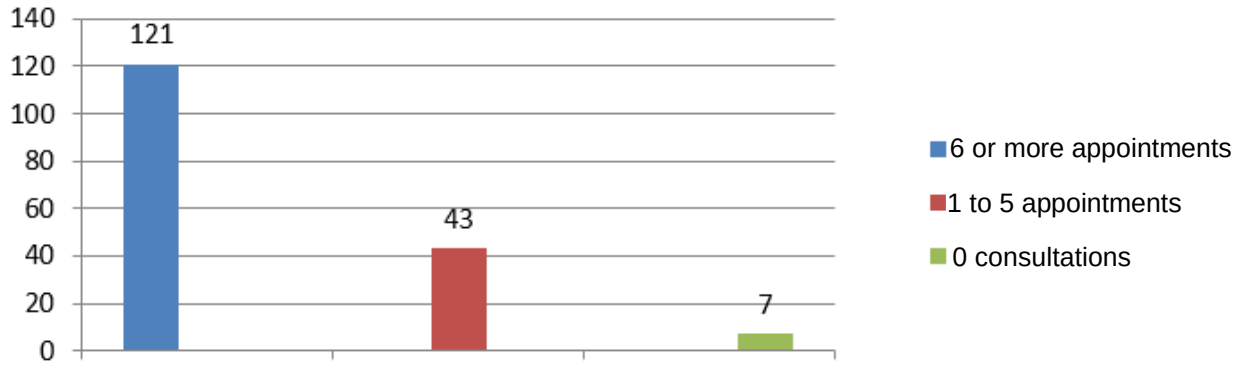
TABLE 1 - RELATIONSHIP BETWEEN GESTATIONAL AGE AND WEIGHT RANGE OF NEONATES

Gestational age	Quantitative (pregnant women)	Weight range (neonates)
27 - 28	2	610g - 3,220g
29 - 30	-	-
31 - 32	1	1.870g
33 - 34	9	1.640 - 2.480 g
35 - 36	18	1.720 - 3.710 g
37 - 38	62	800g - 4,520g
39 - 40	64	2.070 - 4.830 g
41 - 42+2	15	3.730 - 4.450 g

Source: The authors

Prenatal care is crucial for assessing the baby's development, as well as the mother's health, family support and that of her partner. For this to happen, it is necessary to start monitoring as soon as the woman knows she is pregnant. In Brazil, the Ministry of Health recommends that at least 6 prenatal consultations are carried out (Brasil, 2000).

In this study, with regard to prenatal care, 121 pregnant women (70.76%) had 6 or more appointments, while 43 (25.14%) had between 1 and 5 appointments, and 7 (4.09%) had no prenatal appointments. Graph 3 shows this relationship:



Graph 3 - Number of prenatal consultations for pregnant women with syphilis
Source: The authors

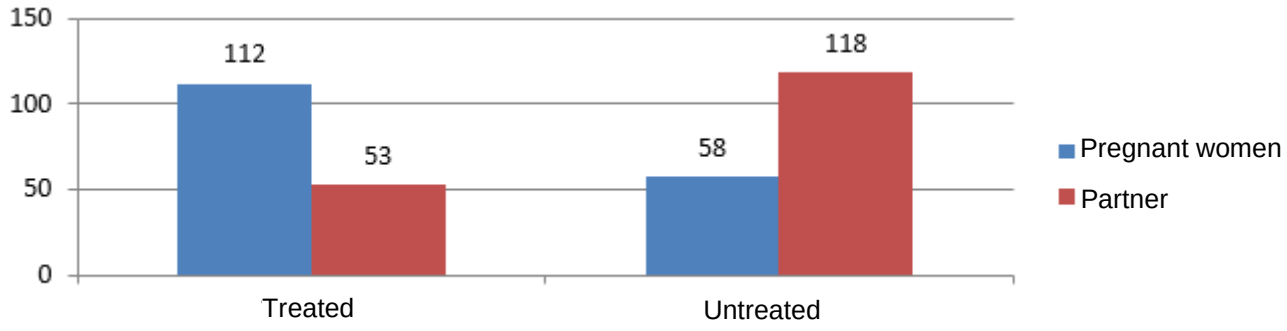
According to Araújo *et al.* (2006), the main cause of unfavorable outcomes in pregnancy is related to the lack of or inadequate prenatal care, since this would be the fastest means of intervention in public health, with high effectiveness and preventive

potential. Therefore, its adequate supply would be the solution for the control and eradication of congenital syphilis.

Of the 171 pregnant women, 58 (33.91%) reported not having been treated and 112 (65.49%) reported having been treated for syphilis. However, when treatment is linked to the presence of proof of treatment, this number drops to 63 pregnant women. In other words, there are reports of treatment, but no evidence of it by 49 pregnant women. This is a factor that directly affects the diagnosis of the disease, since if there is no proof, there is no way of confirming that the woman has undergone full treatment. Thus, there is a need for testing and subsequent treatment of pregnant women to reduce the possibility of infection in the fetus, a situation that was observed in the research. Treatment had been reported, but VDRL titers and the rapid test were reactive at the time of hospital admission.

Among the partners of these pregnant women, only 53 (30.99%) underwent treatment and the other 118 (69%) did not. It's worth mentioning that in some cases, the woman has had the treatment, but her partner hasn't agreed to do it together. In others, the woman was treated but was no longer with her partner at the time of hospital admission.

As shown above, graph 4 shows the relationship between pregnant women and their partners in terms of whether or not they both receive treatment:



Graph 4 - Quantitative treatment of pregnant women and their partners
Source: The authors

Given the need to treat partners, it is important to emphasize the importance of prenatal care for men. This recommendation is justified because it is a strategy to reduce the transmission of infections such as HIV, viral hepatitis and syphilis. Prenatal care aimed at this public is a way of promoting health, preventing avoidable problems and demystifying social stereotypes, with the aim of bringing them closer to health services (Benazzi; Lima; Souza, 2011; Duarte, 2007).

It should be emphasized that nursing plays an important role in this process, and should seek strategies to encourage men to attend appointments, to include them throughout pregnancy and childbirth, as well as to encourage them to care for women by providing the necessary support (Horta *et al.,* 2017).

According to Bomfim *et al.,* (2021), when syphilis is diagnosed and treated in a timely manner, the consequences caused to the fetus can be minimized or eliminated. That's why quality prenatal care is essential, along with diagnostic tests, professional knowledge of signs and symptoms, interpretation of serological tests and rapid tests, and monitoring of the treatment of pregnant women and their partners.

Congenital syphilis is treated with penicillin, just like acquired syphilis. For the treatment of neonates, the choice is crystalline penicillin or procaine. It's worth mentioning that crystalline penicillin is the drug of choice, as it has higher and more constant cerebrospinal fluid values than procaine penicillin. Benzathine penicillin is only used when the chance of infection is unlikely (Feitosa, *et al.,* 2016).

According to the Ministry of Health (Brazil, 2006), if the newborn shows clinical, radiological and/or hematological alterations, it should be treated with crystalline penicillin at a dose of 50,000 IU/kg/dose, intravenously, every 12 hours, for the first 7 days of life, and every 8 hours after 7 days of life, for 10 days, or procaine penicillin 50,000 IU/kg/dose, a single daily dose, intramuscularly, for 10 days. However, if there are neurological alterations, they should be treated with crystalline penicillin at a dose of 50,000 IU/kg/dose, intravenously, every 12 hours for the first 7 days of life and every 8 hours after 7 days of life. If there are no changes, benzathine penicillin should be administered intramuscularly at a single dose of 50,000 IU/kg. Graph 5 shows the most commonly used medications observed in the medical records.

Graph 5 - Medication used to treat congenital syphilis
Source: The authors

Among the nursing care most frequently observed in the nursing records were care for the babies' peripheral venous accesses and instructions to parents on breastfeeding and caring for the baby. Also noteworthy is the advice given to parents about the use of drugs, especially illicit ones, since they are harmful during pregnancy as well as for the newborn, who needs proper breastfeeding and special care. It is worth emphasizing that the care given to babies with congenital syphilis is the same as that given to other babies.

The nursing team is not only involved in carrying out technical procedures, but also in connecting the family to the baby's care, such as placing the baby on the parents' lap, changing diapers, bathing, feeding, checking temperature, breastfeeding and the kangaroo method. In this way, it is possible to provide greater comfort for the newborns and well-being for the parents (Estácio, 2019).

4 CONCLUSION

This study was submitted to the Content Analysis technique (Bardin, 2011). This revealed that the nursing team plays an important role in the prevention, diagnosis and treatment of syphilis, especially in this case, congenital syphilis, as well as in the approach and management of the infected newborn. It was noted that most of the technicians and nurses were well informed about this pathology when questioned by interview. This factor is relevant for a good resolution of the diagnosis, since these professionals are in direct contact with people and at all levels of care.

A search of medical records revealed the aspects that guided the diagnosis of congenital syphilis. It was noted that there are still many pregnant women with an inadequate number of prenatal consultations, with 25.14% having between 1 and 5 consultations and 4.09% having none, out of the 171 pregnant women analyzed. It was also noted that more than half of the partners (69%) had not undergone treatment or had done so inadequately, which is a key factor in the reinfection of pregnant women.

There were 30 premature newborns, 7 cases of neurosyphilis, 35 babies with low birth weight and 1 death after birth. This data is, in a way, a reflection of untreated or improperly treated syphilis, which causes damage to the baby that can last a lifetime.

Given the data collected, it is remarkable how much attention congenital syphilis needs in public health, given the number of cases reported and the damage caused.

This study is therefore relevant to anyone with an interest in health and curiosity about the subject, whether they are lay people or professionals. Through the content explained, readers will learn about syphilis, forms of transmission, symptoms, treatment and, above all, they will become aware of the consequences for the bodies of infected pregnant women and the fetuses that are being born. It is also a stimulus for further research to be carried out in order to monitor the incidence, the repercussions on public health and to evaluate the approach and management of health professionals in the face of this pathology.

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