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Rapid syphilis tests in pregnant women by primary care nurses

Realização de testes rápidos de sífilis em gestantes por enfermeiros da atenção básica

Realización de exámenes rápidos de sífilis en gestantes por enfermeros de la atención primaria

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Abstract: **Objective**: to find out how primary care nurses perform rapid tests for syphilis in pregnant women. **Method**: this is a qualitative research conducted in a municipality in southern Brazil. Data were collected in 2018 by semi-structured interviews and submitted to Content Analysis. **Results**: thee nurses reported that the disease can be asymptomatic, but it has three stages. The symptoms mentioned were a vaginal wound that disappears and after that spots appear on the body. The disease can cause malformation in the newborn. The disease was unknown. When they noticed positive cases, they immediately began treatment of the pregnant woman. They emphasized the non-adherence of partners to treatment. **Conclusion**: the nurse's important role in prenatal and rapid syphilis testing is highlighted. Continuing education actions are needed to improve the disease indicators in the country.
Keywords: Family health nurses; Congenital syphilis; Syphilis serodiagnosis; Family health strategy; Primary health care

Resumo: Objetivo: conhecer de que forma os enfermeiros da atenção básica realizam os testes rápidos para sífilis em gestantes. **Método:** pesquisa qualitativa realizada em um município do sul do Brasil. Os dados foram coletados em 2018 por entrevistas semiestruturadas e submetidos à Análise de Conteúdo. **Resultados:** referiram que a doença pode ser assintomática, mas tem três estágios. Citaram como sintomas uma ferida vaginal que some e após aparecem manchas no corpo. A doença pode causar no recém-nascido má-formação. Houve desconhecimento acerca da doença. Notificam os casos positivos e iniciam imediatamente o tratamento da gestante. Ressaltaram a não adesão dos parceiros ao tratamento. **Conclusão:** destaca-se o importante papel do enfermeiro na realização do pré-natal e do teste rápido de sífilis. Observa-se que são necessárias ações de educação continuada melhorando os indicadores da doença no país.
Descritores: Enfermeiras de saúde da família; Sífilis congênita; Sorodiagnóstico da sífilis; Estratégia saúde da família; Atenção primária à saúde

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Resumen: **Objetivo:** conocer de qué forma los enfermeros de la atención primaria realizan los exámenes rápidos para sífilis en gestantes. **Método:** es una investigación cualitativa realizada en un municipio del sur de Brasil. Los datos fueron recogidos en 2018 por entrevistas semi-estructuradas y sometidos al Análisis de Contenido. **Resultados:** reportaron que la enfermedad puede ser asintomática, pero tiene tres etapas. Como síntomas, citaron una herida vaginal que desaparece y después aparecen manchas en el cuerpo. La enfermedad puede causar mala formación en el recién nacido. Se desconocía acerca de la enfermedad. Notificaron casos positivos e iniciaron inmediatamente el tratamiento de la gestante. Resaltaron la no adherencia de los compañeros al tratamiento. **Conclusión:** se destaca el importante papel del enfermero en la realización del prenatal y del examen rápido de sífilis. Se observa que son necesarias acciones de educación continuada mejorando los indicadores de la enfermedad en el país.

Palabras clave: Enfermeras de salud de la familia; Sífilis congénita; Serodiagnóstico de la sífilis; Estrategia salud de la familia; Atención primaria a la salud

Introduction

Syphilis is a health problem that could be eliminated as long as the pregnant woman infected with the *Treponema Pallidum* bacterium is identified and treated as early as possible. As it is a compulsory notification disease, the case of every live or stillborn newborn (NB) born of a mother with syphilis must be checked and notified. The main purpose of the disease notification is to provide a basis for implementing public health policies to promote, protect, and control the health of the population. The cases in Brazil increased between 2014 and 2015 by 32.7% for syphilis acquired through sexual transmission, 20.9% during pregnancy and 1.9% when transmitted from mother to baby.[1]

Congenital Syphilis (CS) is a sentinel event to monitor Primary Health Care (PHC). In Brazil, a study showed that the prevalence of seropositivity for syphilis was 0.89%, corresponding to about 26,700 pregnant women/year.[2] These rates are recurrent in hospitals, especially in women aged 20 to 34 years old, with low education and more socially vulnerable.[3]

Although is an easily preventable disease, there are flaws in the primary care network because part of the infected pregnant women is not adequately treated. They are infected by their partners, maintaining the transmission chain and, consequently, the high rates of syphilis.

The main obstacles are failures in counseling, difficulties in doing tests, treatment not performed at the diagnosis site and no follow-up.[4]

Gestational Syphilis (GS) has significant importance for public health due to its impact during pregnancy. It can affect the development of the fetus and the newborn, increasing susceptibility to abortion, premature birth, skeletal malformations, meningitis, and pneumonia.[5] One of the preventive measures for the nurses is the Rapid Test for Syphilis in each gestational trimester. They enable them to take treatment measures for a long time, avoiding CS, and preventing Vertical-Transmission.

A study conducted in northeastern Brazil found that its primary health units had professionals trained to perform rapid tests and these tests were available. However, none of the units performed them during prenatal consultations. Those who performed the conventional test, Venereal Disease Research Laboratory (VDRL), reported delayed results. None of the primary health units investigated collected daily biological material, hindering the diagnosis. When they came to receive the results of the VDRL test, the guidance from counseling was restricted to informing them about the test results and the need to treat their sexual partners.[4]

In the prenatal period, the test to diagnose GS should be performed in the first trimester of pregnancy. The nurse must request the quantitative VDRL around 19 weeks of gestation.[6] Despite the protocols of the Ministry of Health and the availability of diagnosis and treatment of syphilis in the health services responsible for prenatal care, the elimination of CS is still a challenge. Health professionals, managers and the general population need to improve the quality of prenatal care with inclusion and co-responsibility of sexual partners and the use of methods such as rapid diagnostic tests.[7]

In this context, the research question is: How do primary care nurses perform rapid syphilis tests on pregnant women? Thus, the objective was to know how primary care nurses perform rapid tests for syphilis in pregnant women.

Method

This is qualitative, exploratory, and descriptive research in which we observed the behavior of the professional nurse regarding the performance of rapid syphilis tests in gestational trimesters. It was carried out in ten Family Health Strategies (FHS) in a municipality in southern Brazil. The units were defined at random. The municipality has 18 FHS units and each unit has a nurse.

Ten nurses working in these units for at least one year doing prenatal care participated in the study. Those who agreed to participate in the study signed the Informed Consent Form.

Data were collected in September and October 2018 through semi-structured interviews. The participants were asked about how they follow the protocol of the Ministry of Health for conducting rapid tests for syphilis in pregnant women. The researchers invited them to participate in the study verbally and performed their work shift in a room to ensure privacy. They lasted about 40 minutes, being audio-recorded and transcribed. Then, the data were submitted to Content Analysis.[8] First, a floating reading was performed to structure the data, and afterward, the material and treatment were explored in which the authors studied and discussed the topic.

We respected the Resolutions 466/2012 and 510/2016 of the National Health Council. The Research Ethics Committee approved the project under opinion 2,799,661 (CAAE: 94794518.0.0000.5340). The approval date was August 3, 2018. The survey participants were identified by the letter "E" followed by the number of interviews.

Results

Ten nurses between 25 and 50 years old were interviewed. Five of them were single, four married and one was divorced. They worked in the FHS between one and 26 years. They performed prenatal care between 17 years (two), 14 years (two), nine years (one), five years (three),

and one year (two). The data analysis generated the following categories: Protocol followed by the nurses of primary care in the performance of the rapid tests for syphilis in pregnant women and the Nurses' behaviors when facing the rapid test with a positive result for syphilis.

The protocol followed by primary care nurses when performing rapid tests for syphilis in pregnant women

The participants reported that they do the rapid tests for Syphilis in all gestational trimesters during prenatal care in all pregnant women and that it is mandatory and that they provide guidance about the test they are performing.

> *Yes. We performed the rapid syphilis test on pregnant women during prenatal care, in the three trimesters of pregnancy.* (E2)
>
> *Yes, we do three rapid tests, in the first, second, and third trimester. We inform the pregnant woman of what she is doing.* (E5)
>
> *Yes. I do the rapid test in the three trimesters, first, second, and third.* (E9)
>
> *Yes. We perform it here in the first, second, and third trimester of routine.* (E10)

In the municipality, pregnant women are first assisted at a referral unit and after the pregnancy diagnosis and the first rapid test, they are sent to their neighborhood units. This reference unit is support for guidance, clearing doubts, and monitoring the pregnant woman together with health professionals. They also are a gateway for pregnant women from other municipalities in the region.

> *Most patients do it twice. In the second and third trimester. The gateway is the Reference Unit. She already comes to us, with the first test performed.* (E1)
>
> *Yes, the tests are performed at the Reference Unit. They already do the rapid tests and are already sent to the unit in their neighborhood with the rapid tests done.* (E6)
>
> *I take the test at the reception. They already arrive at the clinic with the test done. So, I do it at the first moment and every trimester.* (E7)

> *Usually, she comes with the first rapid tests performed. If she is positive, she is already notified that she has to undergo treatment there at the referral center.* (E8)

The main guidelines given by the nurses to the pregnant women were about the importance of performing the rapid syphilis test, the early start of treatment, and the damages caused to the fetus.

> *For the damage, it brings to the baby. Congenital malformations. The importance of treatment and the earlier the test is performed it will be possible to identify the diagnosis.* (E3)

> *The importance of identifying contagion. Transmission to the fetus for the risk of miscarriage, malformations.* (E10)

Nurses' behavior towards the rapid test with a positive result for syphilis

In the rapid positive syphilis test, the nurses reported making the case notification and immediately starting treatment. A quantitative VDRL is requested to confirm the diagnosis.

> *Our behavior following the protocol, we performed the test, giving a positive result, we have already notified and on the same day we have already carried out the treatment.* (E1)

> *We immediately deal with it. Confirmation of the quantitative VDRL is not expected. It is treated with benzathine penicillin. We do three weeks of applications, then we request the VDRL.* (E3)

Only one of the participants reported that after the rapid positive syphilis test, the treatment is not started immediately. He said that the pregnant woman should wait for the confirmatory result of the quantitative VDRL to start the treatment.

> *When the test is positive, I do not treat it, I wait to do the quantitative VDRL. When it is confirmed, I start weekly treatment with 2,400 benzetacil.* (E9)

Two participants reported that syphilis in pregnant women is treated as tertiary, starting treatment with 2,400,000 IU of benzathine penicillin per week for three weeks, totaling 7,200,000 IU.

> *We treat it as tertiary. So, it's three weeks of treatment. At the moment I took the rapid test and it was positive, she will already make the first dose of the medication.* (E2)

> We treat it as tertiary syphilis in the case to settle. Three weeks on the run. Where the monthly control is done requesting the VDRL, for better monitoring. (E5)

They emphasized that it is common for partners to not adhere to the treatment together with the pregnant woman, hindering to re-infect it, and increasing the chances of vertical transmission.

> *There are cases in which the partner has refused to treat. We went after the pregnant woman and she ended up losing her fetus because she was re-contaminated.* (E3)

> *Treating a partner is much more difficult. We have to go after him or the pregnant women say: I'm separated. I don't know who the father is. Treatment is quite complicated.* (E5)

> It happens a lot. They do all the treatment and the husband stays away and doesn't show up. (E8)

Discussion

The rapid tests for syphilis in pregnant women are performed in the three trimesters of pregnancy. A study showed that half of the cases of mothers with syphilis (48.4%) were monitored from the first trimester of pregnancy. However, most pregnant women had a late diagnosis.[9] In Fortaleza, the diagnosis of syphilis occurred in 75.4% of cases during pregnancy, in which 86.1% were diagnosed between the second and third trimester.[10-11]

Rapid tests are performed during the consultation by collecting a blood sample, making the diagnosis possible within 20 minutes. The introduction of rapid tests in prenatal care provides better coverage of screening for syphilis in pregnancy, allowing for immediate diagnosis and treatment in pregnant women.[12] However, the global elimination of CS will require improved access to screening and early treatment of syphilis, clinically monitoring all women and children diagnosed with syphilis, partner management and reducing the prevalence of syphilis in the general population through the expansion of rapid tests.[13]

The implementation of the "*Rede Cegonha*" by the Ministry of Health brought changes in the assistance of pregnant women by health professionals offering rapid tests to screen for syphilis and HIV (Human Immunodeficiency Virus) in primary care units. The rapid syphilis test should be done at the first prenatal consultation, in the first trimester of pregnancy, at the beginning of the third trimester (28th week) and at the time of delivery or abortion, regardless of previous examinations.[11] The role of nurses in direct contact with patients is highlighted for the performance of rapid tests, identification of signs and symptoms of the disease, monitoring and offering guidance to the family.[14]

Prenatal care is an important tool in the diagnosis, guidance, and monitoring of pregnant women in the detection of GS, aiming at their early prophylaxis, avoiding the infection of the newborn.[15] In places with limited resources, screening pregnant women for syphilis using simple rapid treponemal diagnosis (RDTs) is a fundamental tool in the prevention of CS since they allow greater coverage of screening and administration on the same day of treatment.[16]

Early diagnosis of CS is a necessary prerequisite for proper treatment. If the diagnosis of syphilis is done in the first two trimesters of pregnancy, the risk of its adverse results can be significantly reduced.[17] The continuous increase in the syphilis cases in the general population can be due to the increased testing coverage, reduced condom use, resistance of health professionals in the administration of Penicillin in Primary Care, a worldwide shortage of Penicillin, among others.[18] As there are many obstacles to the development of an effective vaccine against T. pallidum, universal prenatal screening and the appropriate treatment for the mother and the NB is the most effective strategy for preventing the transmission of syphilis from mother to child.[19]

Professional qualification, awareness, and standardization of the behavior of health professionals are necessary. Providing support to health professionals in their clinical practices through a supervisory process can contribute to the adoption of the recommended guidelines

and the promotion of health care.[4] We think that the nurse who performs low-risk prenatal care in the primary health unit should seek to know about sexually transmitted infections, especially the problems for the fetus. The lack of understanding and conviction of the individual before the pregnant woman can make the prenatal consultation insecure.

There are situations in which syphilis can be asymptomatic making diagnosis difficult and favoring the proliferation of *Treponema pallidum*. When this happens, it delays the treatment and increases the chances of the bacteria crossing the placental barrier, affecting the fetus. Syphilis can cause harmful effects to the mother and fetus if not identified and treated early.[14]

A study to investigate the fragility of the treatment in the family health strategy also showed that when the rapid test had a positive result for syphilis, the nurses notified the case and immediately started the treatment.[20] Also, the non-adherence of the partner to the treatment along with the pregnant woman was highlighted, allowing her reinfection, and increasing the chances of vertical transmission of the disease.

The partner should agree to carry out the treatment of syphilis together with the pregnant woman as an effective way to fight the disease. Treatment during prenatal care can be ineffective in up to 14% of cases and there is still a likelihood of reinfection if the partner has not done the treatment correctly. The same should be treated even when they have negative VDRL, with a single dose of 2,400,000 IU benzathine penicillin intramuscularly. When the result is positive, the treatment is the same as for tertiary syphilis.[21]

Conclusion

This study aimed to know how primary care nurses follow the protocol for conducting rapid tests for syphilis in pregnant women. These tests are performed in the three trimesters of

pregnancy and the nurses advise them that its performance helps in the diagnosis of the disease and its risks for the NB.

When having a positive result for syphilis, they notify the case and immediately start the treatment of the pregnant woman. The partner's non-adherence to treatment is common, enabling their reinfection, and increasing the chances of vertical transmission. The nurse's important role in carrying out prenatal care and performing the rapid test as early as possible is highlighted, informing the diagnosis and starting the treatment of the pregnant woman and her sexual partner immediately.

Thus, the nurses should be trained about the disease and the Ministry of Health Protocol to perform the Rapid Test for Syphilis. However, we concluded that there are flaws in the continuing education of these professionals, compromising the prevention of the disease, its diagnosis, and treatment as well as the monitoring of infected pregnant women, their partners, and newborns.

The care practice is important to train all primary care nurses to perform rapid tests to detect syphilis in pregnant women, minimizing its effects, and qualifying prenatal care. Due to the study was carried out in only one municipality, it shows some limitations. New research must be carried out, searching for strategies to reduce syphilis cases, especially among pregnant women and newborns.

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