Congenital Syphilis: The Profile Analysis among Postpartum Women in Brazil

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Aim: To analyze the socio-demographic and obstetrics profiles among women with new-born babies diagnosed with congenital syphilis in a maternity hospital in Salvador, Bahia, Brazil.

Method: A case-control study, exploratory, using a quantitative approach. Twenty-seven women after delivery were interviewed during the period from July to September 2015.

Results: Of the 27 women, 70% are between 19 and 35 years of age, 67% had between 9-12 years of study, were housewives (74%), 70% reported brown colour, were single (56%), 78% had had appointment at prenatal care program in their current pregnancy, more than 52% attended 4 follow-up, 56% started this follow up in the second quarter, 78% had vaginal delivery, were 59% diagnosed with syphilis during the prenatal care, 68% received treatment, 85% have partners not treated.

Conclusion: Most women whose new-borns were diagnosed with congenital syphilis had been at a prenatal care program, when she was diagnosed and treated. However, the majority of their partners did not treat. Faced with the failure of treatment of syphilis during pregnancy, more effective actions are needed to improve the quality of prenatal care, in order to prevent congenital syphilis.

Keywords: Congenital syphilis; Syphilis; Treponema pallidum; Prenatal care

Introduction

Congenital Syphilis (CS) is a disease with serious consequences the newborn, which has experienced a resurgence in recent decades [1]. It is a bacterial infection transmitted by Treponema pallidum, acquired by the fetus, placental via infected pregnant women, untreated or inadequately treated at any point in pregnancy [2].

In recent years there has been an increase in the incidence and prevalence of syphilis among pregnant women, especially in developing countries [3]. According to the World Health Organization (WHO), each year, syphilis in pregnancy results in approximately 300,000 fetal and neonatal deaths and 215,000 newborns (NW) at the risk of birth and/or premature death [2]. In Brazil, a considerable increase in syphilis notification in pregnant women has been observed in the past decade, representing a threat to maternal and fetal health [4].

In 1986, SC was established as a compulsory notification disease in Brazil [5]. In 1993, the Ministry of Health (MH) proposed a new project, implementing a country's disease control actions such as the care of pregnant women, performing fast-hospital test, clinical management and surveillance for infected woman during labor and child exposed to the disease, aiming the prevention of new cases in women of childbearing age and reduction in vertical transmission of syphilis [6].

Although syphilis is a well-defined disease, easily diagnosed and with a low-cost treatment, disability prenatal monitoring is considered one of the main factors responsible for the cases of SC [7]. Lack or inadequate treatment of partners enables maternal reinfection, leading to invalidation of treatment, even for women who do not perform properly or intermittently.

According to MH, from 2005 to 2010, 39,789 cases of syphilis in pregnant women and 36,000 cases of SC were reported in Brazil, with a concentration of cases in the Northeast region. Recently published data show, that from 2011 to 2016, there was an increase in the number of cases of syphilis in pregnant women in Brazil (129,757 cases), indicating an improvement in the system epidemiological surveillance and a possible expansion in access to diagnosis [8].

So, the knowledge of socio-demographic and obstetrical profile of women whose newborn was diagnosed with syphilis is necessary. It could collaborate on the development of strategies to facilitate early detection and intervention required, thus reducing the large number of maternal and neonatal complications.

This study aims to analyze the socio-demographic and obstetric profile of mothers whose NW's were diagnosed with SC in a reference maternity in the city of Salvador, Bahia, Brazil.

Methods

This is an observational study, descriptive and exploratory with

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quantitative approach, performed in a reference maternity school in
treatment of SC in the city of Salvador, Bahia, Brazil. The study included
mothers with Venereal Disease Research Laboratory (VDRL) reagent,
in any degree and were accompanying set in NW’s accommodation
units for performing the treatment of SC. The study period was from
July to September 2015. Exclusion criterion were postpartum women
with hearing disabilities, unable to respond the search.

The researchers performed weekly visits to detention facilities and
after identification of women who met the inclusion criteria, requested
the permission to conduct the survey, explaining the objectives and the
importance of this study. After acceptance, with signing the Informed
Consent, patients underwent a structured interview with questions
drawn up by the researchers themselves. The instrument had seventeen
objective questions which contemplated sociodemographic and
current obstetric data and were applied in reserved place ensuring the
confidentiality and other commitments made in the consent form.

The following sociodemographic characteristics were analyzed: Age,
education level, skin color, marital status, nationality and profession.
Previous obstetric characteristics: Number of pregnancies, deliveries
and completion of prenatal care program. Related to the current
pregnancy, the mothers were questioned regarding the achievement of
the pre-natal care, the number of visits, gestational age that began
follow-up, when she received the diagnosis, implementation and
completion of treatment within thirty days before delivery (postpartum
and partner) and the type of delivery.

The study was approved by the Ethics Committee of the Universidade
Salvador-UNIFACS, which opinion No. 1,139,803/2015. Data were
analyzed and presented in the form of tables through relative and
absolute frequency distribution with calculations of their percentage
from the Statistical Package for Social Sciences (SPSS) version 19.

Results

Twenty-seven women were interviewed. Of mothers who had the
inclusion criteria for research and who were hospitalized in the period
of data collection, all decided to participate in the research.

Table 1 describes the sociodemographic variables of the participants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n=27</th>
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<tr>
<td><strong>Age group (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;19</td>
<td>3</td>
<td>11.1</td>
</tr>
<tr>
<td>&gt;19-35</td>
<td>19</td>
<td>70.4</td>
</tr>
<tr>
<td>35</td>
<td>5</td>
<td>18.5</td>
</tr>
<tr>
<td><strong>Years study</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-12</td>
<td>9</td>
<td>66.6</td>
</tr>
<tr>
<td>&gt;12 years</td>
<td>5</td>
<td>33.4</td>
</tr>
<tr>
<td><strong>Profession</strong></td>
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<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>20</td>
<td>74.1</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>25.9</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td></td>
</tr>
<tr>
<td>White</td>
<td>1</td>
<td>3.7</td>
</tr>
<tr>
<td>Brown</td>
<td>19</td>
<td>70.4</td>
</tr>
<tr>
<td>Black</td>
<td>6</td>
<td>22.2</td>
</tr>
<tr>
<td>Indigenous</td>
<td>1</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
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<td></td>
</tr>
<tr>
<td>Single</td>
<td>15</td>
<td>55.6</td>
</tr>
<tr>
<td>Married/stable Union</td>
<td>11</td>
<td>40.7</td>
</tr>
<tr>
<td>Widow</td>
<td>1</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Table 1: Profile of socio-demographic postpartum women in the maternity hospital Salvador, Bahia, Brazil-2015.

of this study, in the item referring to the age group, 70% of patients
had between 19 and 35 years old. As for education, approximately 67%
had studied between nine and twelve years. On being asked about his
profession, 74% reported they were housewives and only 26% developed
other work activities. It was also observed that 70% of respondents said
they were brown skin colour. About marital status, 56% reported being
single (Table 1).

Table 2 shows data for the obstetric profile of previous and present
pregnancy. By analyzing the current obstetric data, 7% of women
reported not having conducted any prenatal follow-up, one by prison
situation and the other did not report the reasons for not monitoring
(Table 2).

The data relating the variables related to time of diagnosis of syphilis,
completion of treatment of the mother and partner and the end of
treatment up to 30 days before delivery, are represented in Table 3.

Discussion

The results of this study show a series of failures in syphilis control
actions, in this group of women. The information collected showed
that although most pregnant women did a prenatal care program, the
number of follow-up was insufficient, the beginning of prenatal care
was late and the partner was not treated for syphilis.

In Brazil, despite the increasing coverage of prenatal care from the
90s, only one fifth of women receive proper care as the MH protocol
[9]. The less access to prenatal care for vulnerable groups, with similar
characteristics to those found in this study as: low education, house
workers, brown/black color skin and residents in the North and
Northeast regions, demonstrate the persistence of social inequalities in
access to health services in Brazil [10].

Concerning the marital status of the patients studied, it is observed
that 57% said the lack of steady partner, which denotes an active sex life
with more likely to get a sexually transmitted infection. Possibly one of
the determining factors for the perpetuation of the infection is the lack of condom use. Such practices imply the quality of care and the injury inevitably caused by the infection.

It should be emphasized that the socio-economic conditions point to the severity related to SC. In addition, it is believed that mothers with higher socioeconomic vulnerability tend not to adhere to the prenatal care program, among the reasons may be cited the lack of financial resources for the use of public transportation to the health units, the lack of partner in the operation of monitoring and little knowledge about the possible health problems related to lack of prenatal care [10].

Araújo study found that among the main factors that express failures in the clinical management of syphilis include: Lack of exams for diagnosis in timely, errors in serological tests of interpretations and absence or insufficient time to treatment appropriate the woman and her partner, which determines a high risk of vertical transmission of the disease [11]. Even if the mother is treated properly, the absence of treatment of sexual partner also implies a high risk of reinfection of pregnant women, as evidenced in our data [12]. Every pregnant woman should carry out at least two tests VDRL during pregnancy in the first and third trimester and another test at birth, in order to track possible reinfection [2].

Through the examinations in prenatal screening can identify and minimize issues that may affect maternal and child health, from an examination of high sensitivity, low cost and essential for the prevention of SC [9]. However, it is assumed through the results of this study that there was a weakness found during prenatal care program, especially for performance and interpretation of serological tests for syphilis. In case of a sexually transmitted infection associated, this condition worsens because of the possibility of vertical transmission. The frequency of the transmission is higher in late gestation, but the severity of fetal complications is higher at the beginning, whereas SC is associated with irreversible and long-term sequelae such as deafness, blindness and neurological diseases system [13].

In this way it is observed the violation of parameters set out in the guidelines for obstetric and neonatal care of MH, which recommends that the prenatal care includes in its quantity and quality a number of consultations and that meets 100% of pregnant women since the beginning of pregnancy (<12 weeks gestational age), doing at least six visits and offering the care of laboratory basics among them, the VDRL test. The demand and supply of services of antenatal care may modify the outcome of pregnancy and when absent increase the chances of perinatal mortality [14].

Although MH east on the complete coverage of prenatal care before the 12th week pregnancy, this study showed that 7% of respondents did not carry out any consultation, and more than half started tracking in the second trimester, reflecting a delayed capture pregnant by the health unit. The nonoccurrence of early identification of pregnant women to prenatal diagnosis entails and consequently, delayed treatment for syphilis. It is known that the proper treatment with benzathine penicillin is able to prevent 97% of cases of vertical transmission. And the best results are achieved when treatment is performed between the 24th to 26th gestational week [4]. This research has shown that almost 60% of women had the disease diagnosed and underwent treatment during follow up, only half the sample completed with less than 30 days before delivery.

Another factor that suggests an inappropriate treatment was the lack of antibiotics in networks of health, due to problems in the supply of raw material and the solvent for the manufacture of penicillin in the second half of 2014, reflecting the non-adherence and increased incidence of congenital syphilis in Brazil [12]. The antibiotic is produced in Brazilian laboratories, but the raw material is imported and was in short. With the shortage in the country suffered the MH established priority treatment pregnant women with syphilis and their NW’s since penicillin is the drug of choice to treat syphilis and only drug able to cross the barrier hematoplacentária [16].

The lack of treatment in 85% of partners in this study points to another major flaw in the treatment of pregnant women, finding similar to previous study [17]. The inclusion of the partner in prenatal care, the male prenatal called, is a strategy for addressing the problem, as the partner treatment is crucial and effective for the mother of healing and consequently reducing SC [4]. The MH determines that the partner processing is carried out even in the impossibility of performing its diagnostics and laboratory examination even get negative [5]. The lack of treatment is a major constraint for the control of SC [17].

Sarcenie highlights the difficulty in leveraging partner during the antenatal care and it is very important to understand the factors that hinder the acceptance of these individuals [18]. The downtime, lack of understanding of the pathology that at certain stages has no symptoms and the no acceptance of being carrier of the disease are factors that hinder access to health units. Thus it is necessary to active search of cases and the development of actions to facilitate the capture of the companion in order to establish clarification of the existing potential complications for mother and child health.

With respect to early prenatal period, in studies conducted east in South and Brazil, resulting also demonstrated similar to the findings of this study demonstrated that 60% of women began prenatal the second trimester [9,19,20]. According to Lazarini and Barbosa [9] and Moreira et al. [19] this finding suggests flaws in assistance to prenatal care, which despite increased coverage can be associated with deficiency in the number of health professionals trained and updated in the clinical management of syphilis, being relevant factor in the persistence of

<table>
<thead>
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<th>Variables</th>
<th>n=27</th>
<th>%</th>
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</thead>
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<td><strong>Moment diagnosis</strong></td>
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</tr>
<tr>
<td>Prenatal</td>
<td>16</td>
<td>59.3</td>
</tr>
<tr>
<td>Childbirth</td>
<td>4</td>
<td>14.8</td>
</tr>
<tr>
<td>After childbirth</td>
<td>1</td>
<td>3.7</td>
</tr>
<tr>
<td>Had prior knowledge of the pregnancy</td>
<td>6</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Received treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17</td>
<td>68.5</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>31.5</td>
</tr>
<tr>
<td><strong>Treatment within 30 days before delivery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>48.1</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>51.9</td>
</tr>
<tr>
<td><strong>Partner received treatment in the same period the patient</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4</td>
<td>14.8</td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>85.2</td>
</tr>
</tbody>
</table>

*The two mothers who reported not having performed prenatal, included among those who were not complete the treatment within 30 days before delivery

Table 3: Variables related to the time of diagnosis completion of treatment of the mother and partner and the end of treatment within 30 days before parturition in a maternity hospital in Salvador, Bahia, Brazil-2015.
high SC rates in these regions. Although 92% of women reporting the realization of prenatal care, only 59% had diagnosis of syphilis during this period, 51% completed treatment 30 days before delivery and only 15% of partners received the treatment.

Although it is a condition in which the etiological agent and transmission methods are known, in addition to treatment have a high cure rate, the incidence of syphilis remains high [21]. Thus it is made fundamentally important planning actions aimed at health education, guidance on methods of disease prevention and treatment to reduce the possible complications also emphasizes the need for development of disease to combat strategies aimed at early identification of pregnant women in primary care network health, starting prenatal care in the first trimester of pregnancy, carrying out the serological tests still in this period, guaranteeing early diagnosis and appropriate treatment the woman and her partner.

Design by harvesting the information at one time, study the cases from an interview may result in the loss of important information related to assistance from prenatal care. As failure of our study, there is the interview by 03 interviewers. Although trained, it is known that this aspect can influence the data collection. Knowing these aspects, there is a need for further studies with different methodologies on the subject, to better characterize these women and identification of gaps in the health system. Moreover, it is a study in one institution, with a small sample size and its generalization cannot be true. It is noteworthy that it is a state of Bahia reference institution.

Conclusion

Most women whose new-born were diagnosed with congenital syphilis had been at a prenatal care program, when she was diagnosed and treated. Faced with the failure of treatment of syphilis during pregnancy, more effective actions are needed to improve the quality of prenatal care, in order to prevent congenital syphilis. Moreover, it is a study in one institution, with a small sample size and its generalization cannot be true. However, it is assumed through the results of this study that there was a weakness found during prenatal care program, especially for performance and interpretation of serological tests for syphilis.

References