

Congenital Syphilis: Maternal-Infant Profile and Factors Associated With the Treatment of Pregnant Women

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Purpose: To characterize the sociodemographic and health profile of mothers and their child with congenital syphilis, to verify association between syphilis treatment in pregnant women and maternal and newborn variables.

Methods: This is an exploratory study developed in a Brazilian municipality, which has a program to monitor the health of pregnant women and their child in order to reduce CS. After approval by the Research Ethics Committee, secondary data were collected between October 2016 and April 2017, by consulting medical records of children notified with CS, and who attended for health follow-up between May 2014 and May 2016, in two specialized outpatient clinics. The data were double typed into Microsoft Excel spreadsheets; after that, they were validated. In the descriptive phase, the participants were characterized as to the variables of interest, seeking to trace the maternal-infant profile of CS. In the analytical phase, the possible associations between the dependent variable (treatment of syphilis during pregnancy) and the independent variables (maternal and child) were analyzed. The IBM SPSS Statistics program, version 25, processed the data by using Pearson's Chi-square and Fisher's exact tests.

Results: between May 2014 and May 2016 112 children were attended in outpatient clinics. The mean maternal age was 27 years; 60.7% of women had a partner; 88.4% of them underwent prenatal care and those who did not performed were drug users; 48.2% of women found syphilis in 1st trimester of pregnancy and the same percentage underwent adequate treatment. Regarding children variables, 82.1% born term; 76.8% with adequate weight ($\geq 2,500g$). There was prolonged hospitalization for treatment in 70.5% of the cases, and 96.4% of these children were asymptomatic at birth. During outpatient follow-up, only 2.4% of the children presented lesions and 13.4% had to be referred to the early stimulation service (assisted by physiotherapist, speech therapist and occupational therapist). There was an association between syphilis treatment in pregnancy and maternal marital status ($p=0.013$), gestational age ($p=0.011$), birth weight ($p=0.045$) and prolongation of neonatal hospitalization ($p<0.001$). For logistic regression, the following variables were included in the model: marital status, gestational age, birth weight and prolonged hospitalization; only the last one had statistical significance. The mothers of children who extended hospitalization were 10.32 times more likely to have not carried out the proper treatment.

Conclusion: specific syphilis follow-up and treatment programs in pregnancy are relevant; however, the results indicate the need to define and improve strategies to bring pregnant women to the health services in order to receive adequate care, and reduce the vertical transmission of the disease. It is also emphasized that the prolongation of children hospitalization presents a social cost to the family (children does not discharge after birth), an emotional cost for the child (regarding hospitalization and invasive procedures related to the treatment) and a hospital cost (increased hospital costs with long-term hospitalization and treatment). As a limitation of the study, incomplete maternal data were found in medical records. The quality of the information enables the proper conduct with the child at birth and its

absence hinders health actions. This study brings relevant contributions to increase prevention, with strengthening of effective programs to follow up women in gestation and treatment of syphilis in a timely manner, promoting actions to minimize the occurrence of CS and the detailed analysis of sentinel events. Thus, there is a great social relevance in initiatives and accountability of managers and health professionals to improve the quality of health care and the elimination of CS. In addition, the avoidance of a public health problem, in order to respond to international public policies on maternal and child health care.

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References:

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Abstract Summary:

Congenital syphilis is a preventable disease and remains as a public health problem worldwide. Thus, knowing the maternal-infant profile and the factors associated with the treatment in pregnancy has the potential to contribute to the improvement to this health indicator, since it allows care actions to be effective in practice.

Content Outline:

Introduction: Congenital syphilis (CS) is a preventable disease and remains as a public health problem worldwide, with the potential to generate serious sequelae for children and compromise their growth and development. The prognosis of CS is related to the severity of the intrauterine infection and the period of maternal treatment, and the earlier the diagnosis of syphilis in pregnant women and the institution of therapy, the vertical transmission is prevented and the less affected will be the child regarding growth and development (Clinical protocol and therapeutic guidelines, 2017). Romanelli *et al.* (2015) indicates that despite the high access of women to prenatal care, the availability of diagnosis test at low cost, and the effectiveness of the treatment of pregnant women and the fetus, children continue to be born infected. According to World Health Organization (2015), several localities have been reporting increasing CS, reaching many newborns and falling far short of Pan American Health Organization target of 0.5 cases per 1,000 live births by 2015. Congenital Syphilis reduction or eradication poses a major challenge to managers and health professionals worldwide. To respond to this end, the Brazilian Ministry of Health recommends the establishment of vertical transmission investigation committees in the municipalities, with the objective of analyzing all misses' opportunities to prevent vertical transmission, identifying failures and rethinking interventions measures (Clinical protocol and therapeutic guidelines, 2017). Domingues, Saracen, Hartz, & Leal (2013) highlight that the investigation of CS cases is important as a sentinel event of the quality of prenatal care. Thus, knowing the maternal-infant profile and the factors associated with the treatment of pregnant woman has the potential to contribute to the improvement to this health indicator, since it allows care actions to be effective in practice. **Objectives:** To characterize the sociodemographic and health profile of mothers and their child with congenital syphilis, to verify association between syphilis treatment in pregnant women and maternal and newborn variables. **Method:** This is an exploratory study developed in a Brazilian municipality, which has a program to monitor the health of pregnant women and their child in order to reduce CS. After approval by the Research Ethics Committee, secondary data were collected between October 2016 and April 2017, by consulting medical records of children notified with CS, and who attended for health follow-up between May 2014 and May 2016, in two specialized outpatient clinics. The data were double typed into Microsoft Excel spreadsheets; after that, they were validated. In the descriptive phase, the participants were characterized as to the variables of interest, seeking to trace the maternal-infant profile of CS. In the analytical phase, the possible associations between the dependent variable (treatment of syphilis during pregnancy) and the independent variables (maternal and child) were analyzed. The IBM SPSS Statistics program, version 25, processed the data by using Pearson's Chi-square and Fisher's exact tests. **Results:** between May 2014 and May 2016 112 children were attended in outpatient clinics. The mean maternal age was 27 years; 60.7% of women had a partner; 88.4% of them underwent prenatal care and those who did not performed were drug users; 48.2% of women found syphilis in 1st trimester of pregnancy and the same percentage underwent adequate treatment. Regarding children variables, 82.1% born term; 76.8% with adequate weight ($\geq 2,500\text{g}$). There was prolonged hospitalization for treatment in 70.5% of the cases, and 96.4% of these children were asymptomatic at birth. During outpatient follow-up, only 2.4% of the children presented lesions and 13.4% had to be referred to the early stimulation service (assisted by physiotherapist, speech therapist and occupational therapist). There was an association between syphilis treatment in pregnancy and maternal marital status ($p=0.013$), gestational age ($p=0.011$), birth weight ($p=0.045$) and prolongation of neonatal hospitalization ($p<0.001$). For logistic regression, the following variables were included in the model: marital status, gestational age, birth weight and prolonged hospitalization; only the last one had statistical significance. The mothers of children who extended hospitalization were 10.32 times more likely to have not carried out the proper treatment. **Conclusions:** specific syphilis follow-up and treatment programs in pregnancy are relevant; however, the results indicate the need to define and improve strategies to bring pregnant women to the health services in order to receive adequate care, and reduce the vertical transmission of the disease. It is also emphasize the prolongation of children hospitalization presents a social cost to the family (children does not discharge after birth), an emotional cost for the child (regarding hospitalization and invasive

procedures related to the treatment) and a hospital cost (increased hospital costs with long-term hospitalization and treatment). As a limitation of the study, incomplete maternal data were found in medical records. The quality of the information enables the proper conduct with the child at birth and its absence hinders health actions. This study brings relevant contributions to increase prevention, with strengthening of effective programs to follow up women in gestation and treatment of syphilis in a timely manner, promoting actions to minimize the occurrence of CS and the detailed analysis of sentinel events. Thus, there is a great social relevance in initiatives and accountability of managers and health professionals to improve the quality of health care and the elimination of CS. In addition, the avoidance of a public health problem, in order to respond to international public policies on maternal and child health care.

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