Congenital syphilis in the 21st century: how to overcome the challenges?

Sífilis congênita no século xxi: como superar os desafios?

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In 2009, the Pan American Health Organization (PAHO) and the United Nations Children's Fund (UNICEF) launched the "Regional Initiative for the Elimination of Mother-to-child Transmission of HIV and Syphilis in Latin America and the Caribbean", commitments which were renewed and expanded in 2016 with the "Action Plan for the Prevention and Control of HIV and Sexually Transmitted Infections (2016-2021)"[1].

In 2016, a total of 661,000 cases of congenital syphilis (CS) were estimated worldwide; of them, 54% had adverse outcomes at birth, such as: abortions or stillbirths, prematurity or low birth weight, neonatal death and clinical diseases[2].

CS is the result of hematogenous dissemination of *Treponema pallidum* of pregnant women not treated or inadequately treated for their conceptus, transplacentally or, more rarely, during the passage through the birth canal in the presence of syphilis lesions.

There is a dependence on the state of infection in pregnant women, and the more recent the infection, the more treponemas will be circulating, and the more severely the fetus will be affected[3]. Since the 1950s, there have been published articles identifying that untreated syphilis in pregnant women can lead to infection of the fetus in up to 80% of cases and may also result in up to 40% stillbirths or neonatal deaths[4].

This problem still remains a public health problem, and its occurrence shows flaws in the processes of the care network, especially in antenatal care, because the early diagnosis and treatment of pregnant women with syphilis and their sexual partnerships are simple, have low-cost measures, are effective in prevention and available[3]. Social, political, economic, and individual factors may be hindering the access to these measures, contributing to the occurrence of cases in populations with greater vulnerability. Even in developed countries, such as the United States of America, a 39.7% increase in the incidence rate was observed between 2017 and 2018[5] (from 23.7 to 33.1 cases per 100,000 live births).

In Brazil, the number of cases of CS has continued to rise since 2008[6]. According to the PAHO, access to antenatal care and childbirth care is high in the Americas, where, in 2017, approximately 90% of pregnant women received antenatal care, with four or more consultations, and 95% had hospital deliveries. However, screening for syphilis during antenatal care decreased from 74 to 69% between 2011 and 2017[7].

Early treatment of syphilis during pregnancy is associated to rare adverse effects in pregnancy[3]. Therefore, screening is essential at the first antenatal consultation, with immediate establishment of benzathine penicillin treatment after diagnosis, seen that it is the only drug that treats the intrauterine fetus. It is important to properly interpret the results of treponemal tests (Rapid Test/FTA-Abs/Chemiluminescence/TPHA/Elisa) and non-treponemal tests (VDRL/RPR) and to monthly follow pregnant women with VDRL/RPR to monitor the decline of titers or the need for further intervention in the occurrence of re-infection or therapeutic failure[8].

It is often observed that professionals facing VDRL/RPR tests with low titers do not perform the treatment due to the misinterpretation that understands such titers would be a "serological scar", even without proof of adequate prior treatment. This fact has contributed to increase the number of cases of CS due to the non-treatment of pregnant women.

In order to avoid reinfection[9], another major challenge for healthcare providers is the catch-up and treatment of the pregnant woman's sexual partners. Reinfection can occur close to delivery, with not enough time for a new increase in VDRL/RPR titers, making diagnosis and retreatment difficult before the baby is born.

Pregnant women with first serology not reactive for syphilis should perform a new test at the beginning of the third trimester (or more often when situations of vulnerability in pregnant women are identified), as well as on admission for delivery and hospitalization for curettage after abortion or if in abortion work.

Women with syphilis treated during antenatal care should be followed, after delivery, with serological monitoring every three months, until discharge by cure.

Most cases of CS are asymptomatic at birth, and serological screening of pregnant women at admission for delivery is essential. Performing VDRL/RPR in peripheral blood of all newborns of mothers diagnosed with syphilis during pregnancy or childbirth[8] also is of utmost importance, as well as radiographic examination of long bones, blood count and cerebrospinal fluid (CSF) collection of newborns[8]. No newborn should be discharged from the maternity ward before having a professional observing the results of maternal serology for syphilis.

The follow-up of all children with CS or exposed to syphilis up to 18 months of age is important and should be guaranteed[8].

The resurgence of syphilis in a global level should be recognized by governments, which should incorporate the screening of

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all pregnant women in their health policies, with appropriate treatment and clinical and laboratory follow-up, considering that this is the most effective strategy to reduce CS.

Therefore, qualification and constantly update of the health care network is needed, as well as including indicators to encourage managers and multidisciplinary teams to seek improvements in the quality of health services offered in maternal and child care, in addition to the involvement of the private and supplementary health network. The political commitment to public health, the priority in prevention, early diagnosis, and timely treatment can lead to major changes, with improvements in the health of the family, mothers and the elimination of CS.

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