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Syphilis in Pregnancy: Resurgent Preventable Disease

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Abstract

Syphilis in pregnancy can cause considerable fetal and neonatal morbidity and mortality. It is endemic in the developing world but it is now resurgent in the developed world. Maternal syphilis can result in fetal infection leading to fetal and neonatal harm. Mid-trimester miscarriages, stillbirths, low birth weight, prematurity, congenital syphilis and neonatal deaths are all the results of syphilis infection in pregnancy. Universal antenatal screening of all pregnant women by serological testing is the cornerstone in detecting and treating the mother and her partner, and preventing congenital syphilis. Penicillin remains the drug of choice in pregnancy. Congenital syphilis is a preventable disease hence fetal morbidity and mortality is avoidable.

Keywords: Syphilis; Screening; Complications; Congenital syphilis; Perinatal morbidity; Perinatal mortality; Penicillin

Introduction

Despite widespread antenatal screening and treatment, syphilis remains a disease of global concern with recent indications that it is a resurgent disease, mostly so in the developed world. Each year about 2 million pregnant women are infected with syphilis infection, mostly in developing [1] countries where it remains endemic [2]. As of 2012, an estimated 930 000 maternal syphilis infections caused 350 000 adverse pregnancy outcomes [3].

These are staggering figures considering the public awareness efforts associated with the HIV/AIDS pandemic and other sexually transmitted infections. The disease appears to be resurgent hence public awareness campaign efforts must be re-doubled. Combating the spread of HIV and other sexually transmitted infections like syphilis must be intensified.

Due to increasing rates of congenital syphilis, efforts to decrease and treat infection in pregnancy are necessary. The world must tackle both old and emerging diseases without neglecting the old ones that still take human lives.

Microbiology and Pathology

Treponema pallidum is the causative spirochete bacterium [4] agent. This fastidious organism is difficult to isolate in microbiological culture, making its identification difficult and research into antimicrobial therapies challenging [5]. Treponema pallidum is a spiral-shaped gram-negative highly mobile bacterium. Humans are the only known natural reservoir. Syphilis is a sexually transmitted infection. The spirochete is able to pass through intact mucous membranes or compromised skin. Mother-to-child transmission occurs via transplacental transmission during pregnancy or by direct contact at birth resulting in congenital syphilis.

Diagnosis

The clinical diagnosis of syphilis is difficult to make in early stages. Dark field microscopy of wet samples obtained from suspected syphilitic lesions that can reveal spirochetes. Serologic tests are more commonly used to detect infection. The diagnosis is confirmed with treponemal tests such as treponemal pallidum particle agglutination or florescent treponemal antibody absorption test.

Screening

Screening is the cornerstone of congenital syphilis prevention [6,7]. Adverse outcomes of mother-to-child transmission of syphilis can be prevented with antenatal screening and penicillin therapy [8]. Every pregnant woman should undergo screening for syphilis as part of the routine obstetric

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care. Re-screening in the third-trimester is recommended for women at increased risk of syphilis. Re-screening later in pregnancy can potentially reduce adverse fetal and neonatal outcomes [9] but this approach is limited by the costs involved and the fact that to prevent one adverse outcome large numbers of patients have to be screened. Governments in the world must be encouraged to provide universal screening for syphilis by making healthcare facilities accessible even to poor rural areas, in the remotest regions of the world.

Complications

Up to two-thirds of pregnant women with untreated syphilis may develop unwanted complications including second-trimester miscarriages, stillbirths [10], premature births, congenital syphilis and neonatal deaths [11,12]. In 2012, there were 143 000 early fetal deaths and stillbirths, 62 000 neonatal deaths, 44 000 preterm or low birth weights and 102 000 infected infants worldwide [3].

Fetal mortality can be six times higher in congenital syphilis [13]. Prenatal ultra sounographic examination may sometimes reveal abnormal features suggesting congenital syphilis [14]. Congenital syphilis may manifest in the late neonatal and infant stages hence continued paediatric specialists follow-up is important.

Therefore these complications of syphilis infection and the staggering statistics must be a wake-up call to all health care workers looking after pregnant women to seek for the condition, adequately treat the patient and her partner and prevent serious fetal and neonatal adverse outcomes.

Management

The first-line treatment for all stages of syphilis during pregnancy is penicillin G [2]. Penicillin is the only known effective treatment for congenital syphilis [5]. Those penicillin sensitive patients should be desensitized and treated with penicillin. Early and adequate treatment could improve the adverse pregnancy outcomes among women with syphilis [15].

Penicillin therapy for maternal syphilis is important in preventing congenital syphilis [16]. The treatment must be adequate. In a Chinese study, only 68% were found to have received adequate treatment [15]. Contact tracing for partners of infected patients is important [17] to treat them and prevent long-term syphilis sequalea and protect the mother and her unborn child from re-infection. Babies born to treated mothers should be evaluated by a specialist. In a UK study, follow up of infants born to treated women was found to be poor [7].

Conclusion

Syphilis in pregnancy remains a global threat to human health. Further interventions to reduce vertical transmission should include universal screening [18]. There should be integrated HIV and services during pregnancy including the use of dual rapid HIV and syphilis testing. Congenital syphilis remains an important preventable cause of perinatal morbidity and mortality [19]. Rigorous antenatal screening, detection and adequate treatment of syphilis during pregnancy remain critical in reducing congenital syphilis and its complications.

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