Declining seroprevalence of syphilis among pregnant women in a rural area

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ABSTRACT

A retrospective study was carried out to know the seroprevalence of syphilis among pregnant women attending their first prenatal examination, and the value of routine prenatal screening for syphilis at the Antenatal Clinic of Bhaskar general hospital at Ranga Reddy dist. Pregnant women were screened for Syphilis using Rapid Plasma Reagin (RPR) test. All those that were positive were confirmed using treponema pallidum haemagglutination (TPHA) test. This study was carried out from January to December 2011. A total of 979 pregnant women were screened for Syphilis using Rapid Plasma Reagin (RPR) test. And among them only one case (0.10%) was seropositive for the syphilis antibody. The positive case was confirmed using treponema pallidum haemagglutination (TPHA) test. Therefore, prevalence of syphilis at first prenatal visit of the subjects in this study was low. Low prevalence of syphilis in prenatal and obstetric population had been reported in the few research studies in India. Syphilis remains a major cause of reproductive morbidity and poor pregnancy outcomes in developing countries. Screening of asymptomatic antenatal women is recommended to prevent perinatal complications. Therefore the seroprevalence of syphilis amongst pregnant women was determined in a teaching hospital at Ranga Reddy dist.

Keywords: Seroprevalence, Syphilis, Pregnancy.

INTRODUCTION

Syphilis is a sexually transmitted disease caused by the Treponema pallidum spirochete and constitutes a major public health problem in many parts of the world, including developed countries.[1] Globally, around 340 million cases of curable new STI occur every year. Of these, syphilis accounts for an estimated 12 million cases, 2 million of them among pregnant women. [2]

Syphilis remains a major cause of reproductive morbidity and poor pregnancy outcomes in developing countries. Syphilis in pregnant women can result in adverse outcomes of pregnancy in up to 80% of cases, such as stillbirth and spontaneous abortion (40%), perinatal death (20%), and serious neonatal infections and low-birthweight babies (20%).[3] Syphilis has also acquired a new potential for morbidity and mortality through association with increased risk for HIV infection.[4]

Several models have been proposed to estimate adverse pregnancy outcomes in women infected with syphilis, with resulting estimates ranging from 50% to 80%.[5-8]. Transmission occurs more commonly in the last two trimesters, but the spirochete can cross the placenta at any time during pregnancy.[9] Fetal death and morbidity due to congenital syphilis are preventable if the infected mother is identified and treated appropriately by the middle of the second trimester. Because of the serious complications of syphilis in pregnancy, WHO has recommended universal

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antenatal screening. WHO further recommended screening for syphilis at the first antenatal visit, as early as possible in pregnancy, repeating in the third trimester if resources permit, to detect infection acquired during pregnancy.[10,11] The effectiveness of such antenatal syphilis screening and its treatment for the prevention of adverse pregnancy outcomes has been well documented.[12]

Veneral disease research laboratory test (VDRL) and Rapid plasma reagin (RPR) which are the non-treponemal tests are helpful indicators of infection, are cheaper, and are simpler to perform than treponemal tests. The sensitivity of these tests increases from primary to secondary syphilis, while their specificity is generally high in the absence of an underlying chronic disease[13]. Positive non-treponemal tests should be confirmed by a treponemal test, such as the Treponema Pallidum Hemagglutination Assay (TPHA) or the Fluorescent Treponemal Antibody Absorption (FTA-ABS) test.

Treponemal tests have higher sensitivity and specificity, but do not correlate with disease activity; are difficult and costly to conduct, plus they are not recommended for primary health care facilities[13-15].

Testing for syphilis in pregnancy and labour is medically indicated because of the potential risk for congenital infection and foetal loss. [16] Syphilis has also acquired a new potential for morbidity and mortality through association with increased risk for HIV infection. [4] Therefore, this study was carried out to determine the prevalence of syphilis among pregnant women in this area.

MATERIALS AND METHODS

Laboratory log books of antenatal syphilis testing were reviewed. A total of 979 serum samples were obtained from pregnant women attending the antenatal clinic of Bhaskar general Hospital during the period January to December 2011. All samples were subjected to RPR testing, which was carried out using standard methods, and quantitative testing was performed for positive samples. Thus, a positive RPR was considered to indicate syphilis. Treponema Pallidum Hemagglutination Assay (TPHA)) testing was done on positive sera.[17]

RESULTS AND DISCUSSION

Nine hundred and seventy nine pregnant women attending antenatal clinic were examined in this study. Only one woman was seropositive for syphilis. The prevalence of syphilis in this study was 1 (0.10%). The recorded age range was 15 to 44-years-old. Seropositive case was a 22years old pregnant woman.

The prevalence of syphilis seroreactivity among pregnant women varies considerably among the world’s populations, from as low as 0.02% to high as 12.1%[18].

In the present study there was only one positive case of syphilis, indicating an extremely low prevalence (0.10%) rate of syphilis among the studied population. Similar findings has previously been reported in the few research studies in India like Sethi et al (0.84%)in the year 2005 and Mathai et al(0.98%) in the year 2001. [19,20] According to WHO the prevalence of maternal syphilis in India has remained at around 1.5% from 2003 to 2007. However, a limited number of studies carried out in India have shown prevalence ranging from 2.5% to 3.4%.[22,23] In another study carried out in Nigeria in which a prevalence of 1.3% has been reported.[21] and studies from Saudi Arabia by Hossain (1988)[24] and Zimmo et al. (2000)[25] Al-Sibiani (2007) [26]have respectively reported a rate of 0.85% and 0.7%and 0.02% of syphilis among prenatal women. The low prevalence of syphilis among pregnant women in our study could be due to greater awareness, improved access to healthcare, effective control programmes and efficacious treatment.

CONCLUSION

Even though the seroprevalence of syphilis in pregnant women in this region is low from this study, it is still advisable for pregnant women to be screened for syphilis because the disease is treatable, and it will help eliminate the adverse effects of untreated Syphilis.

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REFERENCES

[10]. World Health Organization: Detecting Sexually Transmitted Infections: Reproductive Tract Infections.(online)
[17]. Young H. In: Mackie and McCartney Practical Medical Microbiology. 14th edn. 552-553.