



Original Research Article

## Seroprevalence of Syphilis Infection among Rural Pregnant Women Attending to a Rural Teaching Hospital at Sangareddy

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### ABSTRACT

**Background:** Syphilis is a sexually transmitted disease (STD) caused by *Treponema pallidum* can be successfully controlled by effective public measures with well-established diagnostic tests and reasonable effective economic treatment options.

**Objectives:** To determine the prevalence of syphilis among the patients attending antenatal clinic of rural teaching hospital, Sangareddy.

**Materials and Methods:** A total of 2442 serum samples were gathered from pregnant women attending the antenatal clinic during the period from January 2012 to June 2015.

**Results:** Among 2442 pregnant women, only 5 women were seropositive for syphilis. The prevalence of syphilis in this study was 5 (0.20%). Among affected 0.80% was belongs to urban area, 0.096% was belongs to rural area. Among affected women 0.10% was house wives and 0.84% was daily workers. The recorded age range was 16 to 45 years-old. The distribution of Seropositive cases of syphilis were three in age between 21-30 years, one in age between 16-20 years and one belongs to 31-40 years.

**Conclusion:** In this study seroprevalence of syphilis in pregnant women was low. However young and urban pregnant women are more prone to syphilis, so it is advisable to promote awareness on STI risk behavioural change and partner follow up with proper treatment.

**Keywords:** Syphilis, seroprevalence, STD.

### INTRODUCTION

Syphilis is a sexually transmitted infection (STI) caused by bacteria *Treponema Pallidum*. It constitutes a major health problem in many parts of the world, including developing countries. Syphilis in pregnant women causes spontaneous abortion, stillbirth, preterm birth, congenital infections and also increases the risk for the Human immunodeficiency virus (HIV) infection. [1-3]

Syphilis is still a leading cause of perinatal mortality and morbidity worldwide despite the available and affordable methods for diagnosis and treatment in pregnant women. World Health Organisation (WHO) estimates that 2 million pregnant women each year are infected with syphilis globally and about 1.2 millions of those infected are transmitting the infection to babies. In pregnancy, untreatable syphilis will results in stillbirth rate of 25%, neonatal death of 14% and overall perinatal mortality of

40%. According to National Aids Control Organisation-2010-2011 STI/RTI report, the prevalence of syphilis in pregnant women in India is 0.8%. [4-6]

The WHO recommends screening of syphilis be done as early as in first trimester, and be repeated in third trimester for detection of infections or re infection acquired during pregnancy and also be done during delivery. [1] Syphilis screening is an effective strategy to prevent adverse outcome of infection in pregnant women including congenital infection among newborns. Screening is done by Non-Treponema specific tests mainly Rapid Plasma Reagin (RPR) and by venereal disease research laboratory (VDRL) test. These tests detect almost all cases of early syphilis but they are liable for false positive results and misinterpretation hence a need for confirmatory test by rapid treponemal test mainly Treponema Pallidum Haemagglutination Assay (TPHA). It takes 10-45 days for infection with syphilis to be detected by blood tests. Since an initial test does not guarantee absence of infections, it is appropriate to screen pregnant women who are negative in the first test later during pregnancy or at delivery. [7]

## RESULTS

**Table: 1. Showing Syphilis Infection in pregnant women of various age groups**

Age in Year	Number of samples screened for Syphilis (%)	Syphilis sero-reactivity (%)	
		Reactive (%)	Non-reactive (%)
16-20	526(21.53%)	01(0.19%)	525(99.81%)
21-30	1432(58.64%)	03(0.20%)	1429(99.80%)
31-40	366(14.98%)	01(0.27%)	365(99.73%)
41-45	118(4.83%)	00(00%)	118(100%)
Total	2442(100%)	05 (0.20%)	2437 (99.80%)

**Table: 2 showing percentage of syphilis sero-reactivity in patients according to their demographic status.**

Characteristic	Number (n=) & Percentage (%)	Syphilis sero reactivity (%)	
		Reactive (%)	Non-reactive (%)
<b>Residence</b>			
Urban	372(15.24%)	03(0.80%)	369(99.20%)
Rural	2070(84.76%)	02(0.096%)	2068(99.90%)
<b>Occupation</b>			
House wife	1879	02(0.10%)	1877(99.89%)
Govt. Employee	92	00(00%)	92(100%)
Students	71	00(00%)	71(100%)
Health Professional	46	00(00%)	46(100%)
Daily workers	354	03 (0.84%)	351(99.16%)

Total 2442 pregnant women attending antenatal clinic were examined in this study. The recorded age range was

The main goal of this study was to determine the prevalence of syphilis among pregnant women visiting antenatal clinic (ANC) in a rural teaching hospital at Sangareddy.

## MATERIALS AND METHODS

The present study was conducted in MNR Medical Collage & Hospital situated in Sangareddy, part of Medak District, Telangana state (600 beds teaching hospital catering to rural population). A total of 2442 serum samples were obtained from pregnant women attending the antenatal clinic during the period from January 2012 to June 2015.

Sample collection 5 mls of venous blood was collected from the anti cubital vein from each pregnant woman, placed in a plain sterile bottle. Serum was obtained following centrifugation. All the serum samples, tested by rapid plasma regain test (RPR card test, Tulip diagnostics Pvt. Ltd, Uttarakhand, India). All RPR reactive samples were confirmed by using TPHA test. The above investigations were carried out according to manufacturer's instructions.

16- 45 years old and the age frequency distribution of infection is shown in table 1. Results show that seroprevalence of

syphilis infection 03 (0.20%) in the age group 21 – 30 years. Lowest prevalence was recorded in the 31-40 age group, 01(0.27%) and none in the age group 41-45. Out of 2442 samples, 05(0.20%) were reactive; while the others were nonreactive for syphilis. Out of the 05 (0.20%) women were reactive for RPR & TPHA, 03 were belongs to urban area, while the remaining 02 were belongs to rural area is shown in table 2.

## DISCUSSION

According to WHO, the maternal syphilis in India has remained at around 1.5% from 2003 to 2007. [8] Among worldwide syphilis seropositivity in pregnant women showing variability as low as 0.02% to as high as 12.1%. [9] The prevalence of syphilis in this study was 5 (0.20%). Similar prevalence rate reported in Burkina Faso by Sombie et al (0.24%). [10] Bukor M et al. [11] and Yang LG et al. [12] reported seroprevalence of syphilis 0.07% and 0.39% respectively. Mathai et al. [13] and Sethi et al. [14] study revealed prevalence rate was 0.98% and 0.84%. Majority of patients were belonged to the age group of 21- 30 years, followed by the age group of 16-20 and 31-40 years. Almost similar data showed by Abate Assefa [15] and Bukor M et al. [11] in their study. So data from different studies revealed that younger age groups are relatively prone to syphilis infection due to unprotected sexual practices. But according to the study done by Mekonnen Z et al. most effected age group was 15-19 years. [16]

In the present study among the patients 0.80% of affected patients is belongs to the urban area and 0.096% of affected patients related to rural areas. Among affected women 2 (0.10%) are housewives and 3 (0.84%) are daily workers. According to Abate Assefa study revealed seropositivity of syphilis in house wife and daily workers 2.4%, and 3.6% respectively. [15]

Henceforth, treating syphilis plays an important role in aborting the transmission chain. [17] Syphilis screening and treatment are inexpensive and are cost-effective even in the low prevalence areas. [18] Therefore, despite the declining trends in syphilis seropositivity, efforts should be taken to continue to make the screening facilities and treatment readily accessible, especially for antenatal women, their husbands and the high-risk group including commercial sex workers, intravenous drug users and homosexual men. Present study shows low prevalence of syphilis in among studied cases suggesting due to greater awareness, improved access to healthcare, effective control programmes provided by the government and efficacious treatment.

## CONCLUSION

The present study suggests the seroprevalence of syphilis in pregnant women in this region is low; it is still advisable for pregnant women to be screened for syphilis because the disease is treatable, and it will help to eliminate the adverse effects of untreated Syphilis. Early diagnosis of disease in antenatal period is helpful for proper patient management and initiation of treatment to prevent transmission of congenital infections and anomalies to newborns. Public health interventions to promote awareness of syphilis among physicians and populations at risk in India are urgently needed to avoid the adverse consequences which could result from missed diagnosis or improper treatment.

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