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Original Research Article

An observational study of clinical profile and outcome of syphilis infection during pregnancy in the tertiary care center

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ABSTRACT

Background: Syphilis is a sexually transmitted disease (STD) caused by the bacterium treponema pallidum, but little is known about its mechanism of action. In pregnancy it leads to adverse outcomes among more than half of the women with active disease, including early fetal loss, stillbirth, prematurity, low birth weight, neonatal and infant death.
Methods: It is an observational study in the department of obstetrics and gynecology Mahatma Gandhi Memorial Medical College Maharaja Yashwant Rao Hospital, Indore between January 2014 to December 2015 total 20870. In Include written informed consent, All the patients attending STI/RTI clinic with clinical diagnosis of STD. In Exclusion criteria include patients not give informed consent. Case definition: All VDRL + TPHA positive patients.
Results: Out of 20870 females on which VDRL was performed 77 (0.036%) were found to be positive. The seroprevalence at study hospital thus came out to be 0.036%. These were further confirmed by TPHA and 73 (94.8%) out of 77 samples were positive. A total agreement was seen between TPHA and VDRL with a titer of 1 in 8 and above. Among total 20870 screened females, 77% (16101) were ANC patients of which 26 cases out of 77 that is 33.76% females were syphilis positive.
Conclusions: Low prevalence of syphilis in pregnant women and adult general population is very encouraging. participation of people and public health approach to promote awareness of syphilis among physicians and populations at risk in India are very urgently needed to avoid the adverse consequences which could result from undiagnosed or improper treatment.

Keywords: Congenital syphilis, Reproductive tract infection, Sexually transmitted infections, Syphilis in pregnancy

INTRODUCTION

Syphilis is a sexually transmitted disease (STD) caused by the bacterium Treponema pallidum, but little is known about its mechanism of action.[1] In pregnancy it leads to adverse outcomes among more than half of the women with active disease, including early fetal loss, stillbirth, prematurity, low birth weight, neonatal and infant death, and congenital disease among new-born babies.[2] In 2010, a total of 13,774 cases of primary and secondary syphilis were reported to the centers for disease control and prevention.[3] According to the World Health Organization (WHO), 12 million people were infected each year.[4] It was estimated that the lifetime medical cost per case of syphilis is $572 (in the year 2006 dollars).[5] Screening and early detection can lower these costs because treatment

for early-stage syphilis is less expensive than treatment for later-stage disease: $41.26 (in the year 2001 dollars) compared to $2,061.70 for late syphilis.[6] Moreover, the CDC recommends that all persons who have syphilis should be tested for HIV infection.[7] Genital ulcer caused by syphilis can bleed easily and make it easier to transmit HIV infection, with a 2- to 5-fold increased risk of acquiring HIV.[8] Changes in prevalence of primary and secondary syphilis among women are usually followed by similar changes in the Prevalence of congenital syphilis (CS).[9] In 2010 the rate of syphilis among women was 1.1 cases per 100,000 women, and the rate of CS was 8.7 cases per 100,000 live births in 2010.[10] According to the recent (2008) estimates from WHO, about 1.9 million pregnant women had active syphilis.[11] In Italy, in 2008 the prevalence rate of syphilis was 0.86 per 100,000 population, and CS is strictly related to immigration, mostly from Eastern Europe.[12] High prevalence could be explained by the fact that immigrant women who do not always receive adequate prenatal care and lack of health care services.[13]

METHODS

This was a cross-sectional study in the department of obstetrics and gynecology Mahatma Gandhi Memorial Medical College Maharaja Yashwant Rao Hospital, Indore, Madhya Pradesh, India between January 2014 to December 2015. female patients attending the RTI and STI clinic were enrolled during this period.

Inclusion criteria

- Patient giving written informed consent
- All the patients attending STI/RTI clinic with clinical diagnosis of STD
- Antenatal patients giving informed consent. studies reported the prevalence of syphilis, and studies reported data in humans and were published in the English language.

Exclusion criteria

- Patients not give informed consent and incomplete data.

Case definition

In the current review, a case of syphilis was considered when one or more of TPHA (treponema hemagglutination), VDRL (venereal disease research laboratory), to make a diagnosis of syphilis were included in the review.

Sample size determination

Sample size was statistically calculated based on single population proportion formula by taking 5.1% prevalence of syphilis infection from previous study.[5]

Sampling technique and procedure

A total 16101 pregnant women out of 20870 total female of were registered at the antenatal care clinics since January 2014 to December 2015. Samples proportional to pregnant women in the selected health facilities were allocated. Lists of pregnant women were prepared using unique identification numbers from records found in ANC clinics and sampled by systematic random sampling using the registers sampling frame. All pregnant women who had ANC records with complete information were included in the study while all pregnant women who had ANC records with incomplete information were excluded.

Data collection method

Data was collected from record log book and patient charts using semi structured questionnaires. The tool was pretested on the ANC chart on another health center which provides ANC service and which is not part of the study and necessary adjustments were made in the data collection instrument. Regarding syphilis test two millilitre of blood was drawn from the mother and VDRL test was done.

Ethical approval was obtained and actual data were collected. For all study participants the objective of the study was explained and written informed consent was obtained.

Statistical analysis

The collected data was clearly summarized, filled, and analyzed by using SPSS version 21. Descriptive statistics was employed and the result was presented by using Tables.

RESULTS

Out of 20870 females on which VDRL was performed 77 (0.036%) (Table 1) were found to be positive.

Table 1: Prevalence of VDRL positive females.

Total no. of screen female patients	Total no. of positive cases	Percentage
20870	77	0.036%

Table 2: Prevalence of TPHA positive spouse.

Spouse TPHA (N=77)	Number	Percentage
Positive	42	54.5%
Negative	35	45.5%

The seroprevalence at study hospital thus came out to be 0.036%. These were further confirmed by TPHA and 73 (94.8%) out of 77 samples were positive. Total number of spouse positive TPHA are 42 out of 77 that is 54.5%, and

negative TPHA are 35 out of 77 that is 45.5% (Table 2). A total agreement was seen between TPHA and VDRL with a titre of 1 in 8 and above. Among total 20870 screened females, 77% (16101) were ANC patients of which 26 cases out of 77 that is 33.76% females were syphilis positive. Prevalence more in urban population that is 62.3% (Table 3).

Table 3: Prevalence according to locality.

Locality (N=77)	Number	Percentage
Urban	48	62.3%
Rural	29	37.7%

Table 4: Prevalence according to education.

Education (N=77)	Number	Percentage
Illiterate	34	44.1%
Primary (5th)	24	31.1%
Middle (8th)	13	16.8%
High school	6	7.7%
Inter/diploma	0	0%
Graduate/post graduate	0	0%
Professional	0	0%

Table 5: Prevalence according to occupation.

Occupation	Number	Percentage
Unemployed	49	63.6%
Unskilled	22	28.5%
Skilled	3	3.8%
Semiskilled	2	2.5%
Clerical/shopkeeper/farmer	1	1.3%
Semi-professional	0	0%
Professional	0	0%

Prevalence of disease among illiterate population is more 44.1% than in literate (Table 4). Unemployed peoples are more affected 63.6% than unskilled and skilled individuals (Table 5). Married peoples are more affected 87 % than other (Table 6).

Table 6: Prevalence according to marital status.

Marital status (N=77)	Number	Percentage
Single	5	6.5%
Married	65	87%
Remarried	3	3.9%
Widowed	3	3.9%
Divorced	1	1.3%
Separated	0	0%

When HIV status of these patients was studied it was found that of the total 77 cases 4 were positive for both VDRL and HIV (Table 7). Nuclear family more affected 72.7% than joint family (Table 8). Of the total female positive maximum belonged to 20-30 years age group that is reproductive age group (Table 9). Regarding sexual behaviour of the patients positive 41 patients had one sexual partner (53.24%), 34 had 2 partners (44.1%) and 2 had 3 partners (2.59%). Congenital syphilis was seen among 3 cases of the total 77 seropositive patients 3.89% of positives (Table 10) and 0.01% of the total females screened. The patients positive for syphilis included 26 pregnant females (0.16% of the ANC samples received), 4 (5.19%) HIV positive patients, 51 were from STD clinic (1.06% of samples received from STI clinic).

Table 7: Prevalence according to HIV/ELISA.

HIV (N=77)	Number	Percentage
Reactive	04	5.1%
Non-reactive	73	94.9%

Table 8: Prevalence according to family type.

Family type (N=77)	Number	Percentage
Nuclear	56	72.7%
Extended/ joint	21	22.3%

Table 9: Seroprevalence according to age.

Age group (N=77)	Number	Percentage
<20	3	39%
20-30	47	61%
31-40	19	24.7%
41-50	7	9%
>50	1	1.3%

Table 10: Child TPHA.

Child TPHA (N=77)	Number	Percentage
Positive	03	4
Negative	74	96

DISCUSSION

Comprehensive data on the prevalence of syphilis is not available from most developing countries. Serological surveys continue to be the best source of information on the prevalence of syphilis. Minimal estimates of yearly Prevalence of syphilis are 12 million worldwide. Estimates reveal that South Asia has the highest number of syphilis cases in the world. Accurate figures on the Prevalence of STDs are difficult to obtain not only because of inadequate reporting but because of the secrecy that surrounds them. All available data, however indicate a high prevalence of STD (from 1%-14%) in the vulnerable population groups while this study focuses on only female patients (pregnant and symptomatic). Seroprevalence of syphilis among females in this study came out to be 0.036% (Table 1) which is comparable to study conducted by Khan S et al, at Southern India. According to their study syphilis seroprevalence reduced from 0.88% in 2006 to 0.40% in 2008, which was statistically significant (χ^2=9.16, p=0.0103).[14]

Seropositivity was also highest among the age group 20-30 years, which could be due to increased risk of exposure in this group and most of pregnant females which constituted a large section of study group also fall in this category. In India the prevalence of syphilis ranges between 2.0-4.8% among women of reproductive age group.[15-17] So, in conclusion low prevalence of syphilis in pregnant women and adult general population is very encouraging. But all resources need to be continuously dedicated towards STI and HIV control programs in India. Public health interventions and participation to promote awareness of syphilis among physicians and populations at risk in India. And to avoid the adverse consequences which could result from missed diagnosis or improper treatment. And to contributing to the spread of HIV in India, untreated syphilis could also contribute to poor health outcomes resulting from the consequences of latent stages of the disease and maternal-infant transmission with resultant congenital syphilis. Elimination of parent to child transmission of syphilis (E-PTCT) is a new national strategy launched by STI/RTI control and prevention program under NACO in collaboration with reproduction, maternal, newborn child health and adolescent (RMNCH+A) program under National Health Mission. The national strategy on E-PTCT of syphilis will contribute to achieving millennium development goals 4 (reduce child mortality), 5 (improve maternal health) and 6 (combat HIV/AIDS, malaria and other diseases). In study hospital has adopted this strategy likewise all other stakeholders should take necessary action to strengthen the program.

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