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Review Article

SEROPREVALENCE OF SYPHILIS IN ANTE NATAL CASES IN CENTRAL INDIA

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Abstract: The present study entitled;" Seroprevalence of Syphilis in Ante natal cases in Central India" was carried out at Govt. Medical College, Nagpur during the period from 2004 to 2008. The study was carried out on 2302 pregnant women attending antenatal clinic of the hospital. In all the cases registered in the clinic, blood was collected for serum VDRL test for detecting reactivity of the sera for syphilis antibodies. The quantitative VDRL test was done by carrying out the test in various titres. The VDRL test was considered as reactive if it showed reactivity in the titres at or more than 1:8 dilutions. The confirmation of diagnosis was by doing Trepanoma Pallidum Haemagglutination (TPHA) test. Amongst 2302 samples studied 61 samples (2.65%) were reactive by qualitative VDRL test. Amongst these 61 cases, the quantitative VDRL test was reactive in 1.26% cases only. Thus the seroprevalence of syphilis antibodies in ANC cases was 1.26%.
Detection of syphilis antibodies as early as possible in pregnancy period is important to prevent complications arising out of syphilis.

KEY WORDS: Seroprevalence, VDRL test, Trepanoma Pallidum Haemagglutination (TPHA) test.

INTRODUCTION

Venereal syphilis is worldwide in distribution. This disease has major implications not only in relation to public health but also in relation to pregnancies and pregnancy related 0utcome.(Cockayne A 1995) [(1)].Adverse obstetric outcome has been observed to be higher in syphilis reactive women with complications like abortion, stillbirth and neonatal death . These complications are dependent on severity of infection. (Goh BT & Thornton AC (2007) [(2)]. A global study has shown that syphilis was responsible for 460000 abortions and stillbirths and 27000 cases of congenital syphilis, premature birth and low birth weight specially in developing countries [(3, 4)].

Incidence of STIs, in the world, is rising despite improved methods of diagnosis and treatment**.** A proper understanding of the patterns of STIs prevailing in different geographic regions of a country is necessary for proper planning and implementation of STD control strategies. Onwuezobe IA (2011)[(5)].

Incidence of STIs, in the world, is rising despite improved methods of diagnosis and treatment [(6)]**.** Comprehensive data on the prevalence of syphilis is not available in most of the developing countries. There is high variability in the sero prevalence rates among different socioeconomic groups in these countries [(7, 8)]. Sero prevalence rates in India range from 9.07% among high risk STI patients in a study from Himachal Pradesh to 21.9% in long distance truck drivers in central India [(5)] and as low as 1.9% among ANC attendees in a study by WHO [(9)].

Bereket Azeze et al (1995) [(10)] studied 270 cases who attended ANC clinics and noted that thirty seven women (13.7%) were found to be VDRL positive. Onwuezobe IA et al (2011) [(5)] noticed that out of 415 samples, 9 (2.2%) were syphilis positive. As against this, Neeta Khokhar et al (2015) [(11)] noticed a very low sero-prevalence of syphilis 0.49% in ANC cases.

Considering these diverse findings, the present study is undertaken to find out seroprevalence of syphilis in ANC cases in central India.

AIM AND OBJECTIVE OF STUDY

The present study was carried out with the objectives of finding the seroprevalence of syphilis in ante natal case from central India.

TYPE OF STUDY: - This was prospective cross sectional study.

STUDY SETTING: - Govt. Medical College, Nagpur

INCLUSION CRITERIA:- The study included all ante natal cases who attended ANC OPD of the hospital during the period from April 2004 to December 2008. The selection of the sample was consequential sampling.

STUDY PROTOCOL

The study included all consecutive 2302 women who were pregnant and attended the ANC clinic of Department of Obstetrics and Gynaecology of Govt. Medical College,

Nagpur during the period from April 2004 to December 2008. The cases were included irrespective of their gestational age.

In all the cases included, serum sample was collected in sterile bulb and all samples were subjected for VDRL screening slide test. The VDRL antigen was obtained from Govt. of India, Laboratories of Serology, Calcutta. The test was performed as per the manufacturer's instructions. Venereal Disease Research Laboratory (VDRL) test was chosen as screening test for syphilis antibodies in these women. The qualitative VDRL test was done with undiluted sera for reactivity. Those which were showing reactivity in qualitative test were subjected for quantitative VDRL test with serum dilutions for detection of significant titre of syphilis antibodies. The serum dilutions were done in the range of 1:02 to 1:64. The reactivity in the titres at or more than 1:08 was considered as significant [(1)].

The sera samples which were showing significant reactivity by quantitative VDRL screening test were confirmed by Trepanoma Pallidum Heme agglutination test (TPHA). This test was performed by the kits supplied for the test by Fujirebio Inc, Japan.

RESULTS

A total of 2302 sera samples of pregnant women visiting ante natal clinic OPD were studied for syphilitic antibodies. All the sera samples were tested for syphilis antibodies by qualitative VDRL test first. Table no. 1 depicts the results.

1. QUALITATIVE ANALYSIS OF VDRL TEST

Table: Result of Qualitative analysis of VDRL test

Total No. Of ANC cases screened	Result of VDRL test			
	Reactive	Percentage	Non reactive	percentage
2302	61	2.65%	2241	97.35%

It was observed that out of 2302 samples qualitative reactivity of VDRL test was noticed in 61 (2.65%) cases.

2. QUANTITATIVE ANALYSIS OF VDRL TEST

Quantitative analysis was done by demonstrating the reactivity of the samples in different dilution titres. The serial dilutions used were ranging from 1:02 to 1:64. The reactivity in the serum dilutions of 1:08 and above was considered as reactive for syphilis antibodies.

Table 2 : Quantitative Analysis of VDRL test

No of ANC cases with reactive VDRL test (Qualitative)	VDRL titres					
	1:02	1:04	1:08	1:16	1:32	1:64
61	21	11	17	07	03	02

Thus out of 2302 Sera samples, 29 samples (1.26%) were significantly reactive for syphilis antibodies (titres eqal to or more than 1:08). All these 29 samples were confirmed by Trepanoma Pallidum Hemagglutinin (TPHA). Thus the seroprevalence of syphilis in the present study was 1.26%.

DISCUSSION

The burden of syphilis in both developed and a developing country is still substantial and many pregnant women still remain undiagnosed of syphilis. In the present study an attempt is made to detect seropositivity of syphilis antibodies in ANC cases. Amongst 2302 sera samples tested for seropositivity for syphilis, in the present work, 1.26% women had syphilis antibodies in sera. The prevalence of seropositivity in ANC cases is variable. Sero- prevalence rates in India range from 9.07% among high risk STI patients in a study from Himachal Pradesh to 21.9% in long distance truck drivers in central India [(5)]. In India seroprevalence for syphilis is low as 1.9% among ANC attendees in a study by WHO [(9)]. Upe & sathe (1979) noticed 2.4% seroprevalence of syphilis in Aurangabad division of Maharashtra, Berkovtz et al (1973)[(13)] recorded 2.7% prevalence of syphilis and Nair D et al[(14)] in 1996 noticed 2.1 % seroprevalence of syphilis antibodies in India. Higher prevalence of 2.25% was noticed by Onwuezobe IA et al (2011)[(5)] in Nigeria.

Gestational syphilis is of particular concern in under equipped health systems and wherever access to health care is a major limiting factor for any STD programme effectiveness. Gopal kumar noticed 3.8% seroprevalence of syphilis in patients attending STD clinics and it was only 0.88% in females from ANC. This heterogeneous nature of STI epidemic in India explains the differences in findings at different Geographical location as well as the limitation of sample collections in the work.

The sero prevalence of syphilis in pregnancy is influenced by various factors. In areas where syphilis is common, the pregnant women may have higher chance of getting antibodies for syphilis. The diagnosis of syphilis in pregnancy as early as possible is important because if left unattended, such patients can go for complications like premature delivery, repeated abortions, still birth or development of congenital syphilis in the neonates. All these can lead to increased infant mortality rate.

It is recommended that sera of all pregnant women should be subjected for syphilis antibodies in early pregnancy and if reactive should be periodically screened for development of any complications arising out of syphilis.

CONCLUSION

The seroprevalence of syphilis was carried out on 2302 ANC cases who attended the hospital. The serum was tested by qualitative and quantitative VDRL test. The sera reactive by VDRL test were confirmed by TPHA test. The prevalence of seropositivity of syphilis in pregnant women was 1.26%. It is recommended to screen all ANC cases for syphilis antibodies

for early detection of disease and prevention of complications.

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