

THE RELEVANCE OF VDRL AS ROUTINE TEST IN PREGNANT WOMEN: A CRITICAL STUDY

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ABSTRACT

Aim: To critically determine the relevance of Venereal Diseases Research Laboratories (VDRL) investigation as a routine serological screening for syphilis among pregnant women who receive antenatal care at the University of Nigeria Teaching Hospital (UNTH).

Methods: A retrospective chart review of result of serological test for syphilis among pregnant women during a five year period (1st January, 1997 to 31st December 2001) was undertaken

Results: A total of 7469 women booked. 7175 had routine serological test. 294 of the booked women failed to submit themselves for screening. The prevalence rate of syphilis in this study was 0.125%. VDRL seroreactivity had in previous studies in this center declined from 3.06% to 1.30%. It further declined to 0.98% in this study.

Conclusion: The results strongly show a continuing very low prevalence rate of syphilis in Enugu. Nevertheless, we support continued screening of pregnant women inspite of this low prevalence rate, since this will eradicate the effects of undiagnosed and untreated syphilis.

Key words: Syphilis, Venereal Disease Research Laboratories (VDRL), *Treponema palladium* haemagglutination assay (TPHA).

INTRODUCTION

Syphilis is of serious medical importance. It is an old disease recognized by clinicians and Reproductive health workers because of the adverse consequences of unchecked mother to child transmission of the disease seen mainly in the tropics. The prevalence rate in pregnant woman exceeds 10% in West African. The causative organism, *Treponema palladium*, a spirochaete, is purely a pathogenic parasite of man and is transmitted almost exclusively by sexual intercourse or by intrauterine infection.

The serological tests for syphilis used in this study are VDRL (a non-treponemal test) and TPHA (a treponemal test). VDRL, though widely used, simple, cheap and easy to perform, is of limited specificity.

Though the University of Nigeria Teaching Hospital (UNTH) Enugu is a tertiary health institution, it does not restrict its role to only tertiary services. As a result of this policy prenatal services are offered to all pregnant women. These include such investigations as VDRL & TPHA.

MATERIALS AND METHODS

Booking Registers were obtained from the Medical

Record Department and VDRL/TPHA registers from the serology section of the microbiology department. These registers containing the records of pregnant women who booked at the University of Nigerian Teaching Hospital Enugu from 1st January 1997 to 31st December 2001 were analyzed. Only pregnant women were included in the study over the five year period.

RESULTS

During the five year period (1997-2001), 7469 booked pregnant women serologically screened and unscreened for syphilis were reviewed as presented in table I and II below. For unknown reasons, 294 (3.94%) of patients booked but were unscreened. Others later stopped attending antenatal clinics in UNTH as a result of unavailability of TPHA reagents when it was needed for confirmatory test as well as inability to pay for the test. Only 19 of the 70 VDRL reactive serum samples were subjected to TPHA. Only one (95.26%) was positive. Thus 5.26% of the VDRL reactive sera were TPHA reactive. The TPHA/VDRL ratio of 5.30% is lower than 11.6% and 7.70% observed in earlier studies conducted in this center in 1989 and 1999 respectively. If the ratio is to be projected to TPHA test a total of 9 TPHA reactive sera may be obtained. This will give a VDRL and TPHA reactivity of 0.125%

Table 1: Result of Serological Test for Syphilis among Pregnant in Enugu

Year	Booked	Those who have VDRL test	Percentage	Those who were Reactive	Percentage	VDRL Positive who had TPHA	Those who were Reactive	Percentage
1997	1687	1682	99.70	9	0.54	3	-	-
1998	1376	1201	87.28	8	0.67	1	-	-
1999	1411	1356	96.10	4	0.29	4	-	-
2000	1468	1466	99.86	13	0.87	7	1	14.29
2001	1527	1470	96.27	36	2.45	4	-	-
Total	7469	7175	96.02	70	0.98	9	1	5.26

Table 2 Comparison of Booked Unscreened Women

Year	Booked	Booked Unscreened women	Percentage Booked unscreened women
1997	1687	5	0.30
1998	1376	175	12.72
1999	1411	55	3.90
2000	1468	2	0.14
2001	1527	57	3.73
Total	7469	294	3.94

DISCUSSION

This study reveals a very low prevalence rate of syphilis of 0.125% based on VDRL and TPHA reactivity. This is comparable to previous studies done in this center between 1999 and 1984 and another done between 1991 and 1997. This study is equally comparable to the study done in Amsterdam between 1985 and 1989. The result from this study revealed a significant decline from the 0.35% reported in this center for the period of 1991 to 1997. It is equally comparable to another study done in the University College hospital (UCH) Ibadan, Nigeria. There, the seropositivity rate declined from 2.3% between 1997 and 1985 to 1.55% (a ten year period). The study carried out was based on VDRL only. TPHA was not available at time of the study. As a result; the rates could have been lower. In this center (Enugu) VDRL seroreactivity declined from 3.06% to 1.30% in the previous studies and further declined to 0.98% in this study. The observed decline in seroreactivity in this center has been due to awareness of the pregnant women to health needs created during antenatal classes and health education. Media house and the provision of adequate therapy for pregnant mothers during the first sixteen weeks of *Treponema pallidum* have been a contributory factor.

The low proportion of booked women who were unscreened (3.94%) is due to high acceptability by large percentage of pregnant women, improved education and funding of antenatal care subsidies the high cost of screening.

The prevalence of syphilis in this center is low. Nevertheless, there should be continued screening of pregnant women for deadly disease as this go a long way towards the eradication of the effects of untreated syphilis and congenital syphilis in childhood.

Treatment of women who were reactive to the VDRL test even without the confirmation test (TPHA) should be commenced because as shown in this study, some women absconded without presenting themselves for confirmatory test. If left untreated there is no way of knowing those who will be confirmed positive. As a result such case may not be treated, with disastrous consequences to both mother and unborn baby. It is pertinent to note that treatment of syphilis (penicillin) is safe throughout pregnancy. Resistant *Treponema* strains have not been reported. This measure will result in further decline in VDRL and TPHA seroreactivity.

We strongly recommend that all neonates and infants with a reactive VDRL should undergo monthly quantitative VDRL test for at least 9 months. A fall in titer suggests that the infant is not infected, whereas a rising titer indicates active disease.

REFERENCES

1. **Gini P.C, Chukwudebelu WO, Njoku Obi A.N.** Antenatal screening for syphilis at the University of Nigerian Teaching Hospital, Enugu, Nigeria. A six year survey *Int.J. Gynecol Obstet.*1989; 29: 321-324
2. **Bindels PJ, PostmaMJ, Peerbooms PG, et al.** Bebfict women of the serological screening program for syphilis in pregnant women in

Amsterdam in the period 1985-1989. *Ned Tijdschr Geneeskd.* 1991; 135: 1319-1322.

3. **Oyelese AO, Asusu MC, Osaba AO.** Pattern of reactive serological test in different population groups attending the University College Hospital Ibadan (1976-1985). *Afr. J. Med. Sc.* 1990; 19: 103-106
4. **Adewole IF, Fwole RO, Babarinsa IA, et al.** The value of antenatal screening for syphilis in Ibadan. *Nig. Med. Pract.* 1997; 34: 39-41
5. **Ozumba UC, Oshi D, Nwokeji CM, Anya SE.** Trends in seroreactivity for syphilis among pregnant Nigeria women at University of Nigeria Teaching Hospital, Enugu. *Global Views Sex Transm Inf.* 1999; 75: 120-123.