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Routine antenatal syphilis screening - a case against

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Summary:
To highlight the deficiencies associated with the routine antenatal syphilis screening as it is done now in the University College Hospital, Ibadan, and determine the cost effectiveness or otherwise of syphilis screening using as parameters the specificity of the method of screening as well as the gravity of the disease. The results of VDRL tests performed on pregnant women attending the antenatal clinic of the University College Hospital, Ibadan, in a 10- year period, January 1988 to December 1997 were analysed for seropositivity as well as congenital syphilis. The case notes of 110 sero- reactive patients were retrieved and analysed for pregnancy outcome. The prevalence rate of seropositive patients was 1.1%. Only 3 of the seropositive had repeated tests and were treated empirically with high doses of penicillin. There was no case of congenital syphilis. This study has shown that the syphilis screening as it is done now is not cost-effective. If VDRL test is to be continued, efforts must be made to reintroduce TPHA-test, which is more specific-specificity; it wastes a lot of time and money of the patients. Hence it is not cost effective. If VDRL test is to be continued efforts must be made to reintroduce TPHA-test, which is more specific.

Keywords: Routine antenatal screening, syphilis in Nigeria, discontinuation advocated, need for TPHA test.

Resumé
Objectifs: Faire la lumiere sur les dificiences associes a la routine des testes de sphylis antenatal tel quils. Amt fait actuelement au centre hospitres Universitaire de luniversite d'Ibadan, puis deteminer les benefices que l'on peut en tire in utilisant d'antres para metres de teste telque, la specificite de la methode de test ausso bien que la grarite de la malarie.
Methods: Les resultats des tests VRDL faits sur les femmes enceints, frequentant la Clinique pre-natal de Centre Hospitalier Universitaire, de t'universite d'Ibadan sur we perioide de 10 ans, S'etalant de Januier 1988 a Decembre 1997, avaint ete analyses pour la seropositive anssi bien que la syphilis congenital. Le ficler medical de 110 patients sero-reactifs, avaient ete soutires et analyses par rapport a lissue de laccouchrement.
Resultats: Le taux de prevalence seropositive des patients a ete de 1.1%. Salls 3 pourcent des patients sero-positifs ont ent des testes repetes et avaient ete traite de mariere empirique avec des Doses fortes de peneciline. Il n'y avait pas de cas de syphilis congenital.
Conclusion: Cet etude a montre que les tests de syphilis tel quil est fent maintenant n'est pas beneficiaire. Si la VRDL est a Continuer des efforts douvent etre fait pour reinstroduire to tesdte TPHAqui ist plus specifique.

Introduction.

In many antenatal clinics in Nigeria, serological tests for syphilis are performed routinely on most patients at the booking visits. However, congenital syphilis is virtually nonexistent and the positive returns from these tests in many parts of this country are so small that, the usefulness of this routine test has been questioned [1,4]. At the University College Hospital (UCH), Ibadan, no case of congenital syphilis has been documented in the last 20 years.

Most centres in this country use only the Venereal Disease Research Laboratory (VDRL) test to screen for syphilis [5,8]. This test, unfortunately, is highly non-specific [4,5,8]. According to Osoba [3], "the interpretation of serological tests for syphilis and other treponematoses presents special problems in tropical countries where syphilis and other treponematoses co-exist with conditions giving biological false positive reactions such as malaria, bacterial, viral, and parasitic infections, collagen diseases and vaccination procedures" and even pregnancy itself. Other confirmatory tests like *Treponema pallidum* haemagglutination (TPHA) and Fluorescent Treponemal Antibody Test (FTA) are usually not done, apparently for lack of reagents which are claimed to be too expensive [1,2] At the University College Hospital, Ibadan, only one TPHA test was done in a 10-year period 1986-1995 [2] while none was done during this study period. Due to this handicap, a VDRL titre of 1:4 or a rising titre is considered suggestive of syphilis [4]. Patients with VDRL seropositivity, without the benefit of a confirmatory test, are treated empirically with high doses of penicillin; a measure that is totally unacceptable.

This study has therefore been designed to determine the trend of VDRL seropositivity among pregnant women attending the antenatal clinic of University College Hospital, Ibadan, with a view to evaluating the cost-effectiveness of the routine VDRL testing in this group of women.

Methodology:

The study was retrospective. The registered VDRL tests performed on pregnant women over 10-year period from January 1, 1988 to December 31, 1997 at the University College Hospital, Ibadan, were evaluated. The total number of pregnant women tested was obtained and those with positive and doubtful results were recorded. The prevalence rate of syphilis and yearly incidence of VDRL seropositivity among the women were calculated. The case notes of the seropositive patients were retrieved to check for evidence of the treatment offered and to analyse the outcome of pregnancy.

Results.

A total of 9,201 sera of pregnant women attending the antenatal clinic of the hospital were screened for syphilis during the study period. One hundred and forty -seven cases gave positive results, giving a prevalence rate of 1.60%. However, 46 were doubtfully reactive. If these cases are not considered the resultant prevalence rate will then be 1.1%. (Table 1). Only 3 (2.04%) of the seropositive tests were repeated and given empirical treatment of high dose penicillin, but remarkably no further contact tracing was done and there was no confirmatory test with TPHA. Table 1 shows the yearly breakdown of seropositivity including the 46 doubtful reactive ones during the study period.

One hundred and ten case notes of patients with reactive sera were retrieved for analysis of treatment offered and pregnancy outcome. Only seventy five case notes contained adequate information for any meaningful analysis as shown in Table 2.

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Table 1: Breakdown of VDRL Screening (1988-1997)

Year	Total screened from ANC	Number of seropositive sera	Percentage of seropositivity
1988	1017	30	2.96
1989	1169	32	2.74
1990	1249	19	1.52
1991	1019	15	1.49
1992	1170	8	0.68
1993	733	8	1.09
1994	509	7	1.38
1995	777	17	2.19
1996	643	8	1.24
1997	922	3	0.33

Total % prevalance = 1.6%
Less 46 doubtful positive sera = 0.5%
Prevalance rate = 1.1%

Table 2: - Outcome of pregnancy in seropositive pregnant women.

	Pregnancy outcome	Frequency	Percentage
1	Normal pregnancy and delivery	51	68.00
2.	Anaemia	5	6.70
3.	Abortion	3	4.00
4.	Premature rupture of membrane	3	4.00
5.	Small for date	3	4.00
6.	Perinatal death	3	4.00
7.	Intrauterine growth retardation (IUGR)	2	2.66
8.	Asphyxia Neonatarum	2	2.66
9.	Hepatitis	2	2.66
10.	Hydrocephalus	1	1.33
11.	Congenital syphilis	0	0.00
	Total	75	00.00

Discussion:

The standard protocol for screening for syphilis is the concurrent testing with (VDRL) slide test and a confirmatory (TPHA) test for enhanced detection [10]. VDRL-test and Rapid Plasma Reagin (RPR) tests are not specific. Chronic infective disorders, rheumatoid arthritis and even pregnancy itself can give false positive reactions with these tests [3,10]. The TPHA test is very specific, but it was not done during this study period, apparently due to lack of reagents. Without the TPHA - test it is difficult to distinguish between syphilis and any other disorder like yaws in pregnant women, especially in the tropical environment [1,3,10].

In these days of cost-effective health care, priority setting, market forces and the national economy at its lowest ebb, there is need for a reappraisal of universal antenatal screening for syphilis. This is a routine test that is extensively carried out to prevent a condition whose true incidence is unknown [11].

Studies have shown that titre values are unreliable in distinguishing biological false positive from true positive results [1,12,13] and therefore to enhance reliability, it is necessary to do concurrent longitudinal assessment with VDRL and TPHA [1]. Furthermore, it is well known that pregnant women in Nigeria book late, usually in the second trimester and sometimes even in the early part of the third trimester. Screening for syphilis in the first trimester is most cost- effective [14,15,16] and results of treatment in early pregnancy are excellent for both mother and fetus.

The percentage seropositivity of 1.1% found in this study reconfirms the falling trend in the incidence of syphilis when compared to Oyelese's study [17] of 1976-1985 in which the prevalance rate was 2.3% and Adewole's study [2] of 1986 to 1995 in which the rate was 1.55%.

Only 3 (2.04%) of those with seropositive reactive had their tests repeated - even though without a confirmatory test, following which they received high doses of penicillin - a protocol which is totally unacceptable in the light of evidence-based medicine. There was no contact tracing. This shows high negligence in the management of seropositive women, a finding which agrees with that in previous studies [2,4].

Surprisingly, the perinatal complications observed in these patients are lower than the observed incidence in normal pregnancies in the same environment[2]. These findings raise two very important questions: (1) Are we really dealing with syphilis or are we just dealing with false positive results (2) Considering all these short-comings in an era of evidence-based medicine is routine VDRL test, without a confirmatory TPHA-test, on every pregnant woman booking for antenatal care at the University College Hospital, Ibadan, and indeed in other institutions in the country desirable, ethical, efficient and cost- effective.

It is highly uneconomical on the part of the pregnant women to pay two hundred naira (N200.00) for the VDRL test, buy syringes/needles and suffer needle pricks in addition to wasting of precious hours on a test to prevent a condition whose incidence is unknown [11].

The same applies to the hospital management, which provides trained personnel wasting their precious time on an almost virtually useless test.

Taking all the above observations into consideration, the routine screening of pregnant women for syphilis using only the VDRL test without a confirmatory TPHA test is not cost effective. In conclusion, we therefore recommend that this routine screening be scrapped unless a concurrent TPHA test is reintroduced.

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