Seroprevalence of syphilis in asymptomatic adults seeking employment abroad

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ABSTRACT

Objective: To evaluate the seroprevalence of syphilis in adults seeking employment in Middle East Countries.

Methods: A rapid plasma reagin (RPR) test was performed on adult’s under-going a physical examination as a part of their assessment as pre-employment screening for jobs in the Middle East at Shifa International Hospital, Islamabad, Pakistan over a four-year period.

Results: A total of 47,538 adults underwent an RPR test. Out of these, 94% were males. Three hundred nineteen individuals (0.67%) were found to have a positive RPR test.

Conclusion: The sero-positivity for syphilis with RPR in this cohort is low. Therefore, routine screening of apparently healthy adults for syphilis should be directed to high-risk groups. (Rawal Med J 2004;29:65-67)

Key Words: Syphilis, RPR, VDRL

INTRODUCTION

Syphilis is an important but deadly sexually transmitted disease (STD) apart from AIDS. In 1995, it was estimated that there were approximately 12 million new cases of syphilis
among adults worldwide, with the greatest number of cases occurring in South and South-East Asia, followed by sub-Saharan Africa.\textsuperscript{1} STDs are among the most common causes of illness in the world and have far-reaching health, social and economic consequences.

Syphilis is the classic example of an STD that can be successfully controlled by public health measures: a simple to use and highly sensitive diagnostic test is available, as is a highly effective antibiotic to which resistance has not developed.\textsuperscript{1} Signs of this bacterial infection range from skin eruptions to complications involving the heart and nervous system. Also it may have significant long-term complications in case of pregnant females as well their offspring.

There is geographical clustering of disease worldwide with variable incidence among different groups of population.\textsuperscript{1-3} Syphilis has been an uncommon problem in Pakistan.\textsuperscript{4-6} However the seroprevalence of syphilis in general population of Pakistan is unknown. This study was conducted to evaluate the seroprevalence of syphilis among a cohort of healthy adults attending a health clinic in northern Pakistan.

\textbf{PATIENTS AND METHODS}

We conducted this study on healthy individuals who presented for medical evaluation as a part of pre-employment examination in which they were required to have a Rapid Plasma Reagin (RPR) test for syphilis as well. A commercial kit for serodiagnosis of syphilis ("Immutrep RPR", Omega diagnostics, Alloa, Scotland, UK) was utilised. All
“weak reactive” tests were repeated two weeks later and then categorized as positive or negative.

Basic information was available regarding the individual. The information was extracted from the computerized database of all these individuals. The study population included all subjects presenting for the evaluation from January 1998 to January 2002 at Shifa International Hospital, Islamabad, Pakistan.

RESULTS
A total of 47,538 subjects were tested over a period of four years. Three hundred nineteen (0.67%) were found to have a positive RPR test. Out of these, 44,686 (94%) were males and the rest were females. Mean age was 40.5 years with a range of 18 – 70 years.

DISCUSSION
The standard nontreponemal tests for syphilis include the Venereal Disease Research Laboratories (VDRL) slide test and the rapid plasma reagin (RPR). These tests measure antibody directed against lipoidal antigen that result from interaction of host tissue with T pallidum. These tests are inexpensive, rapidly performed, and provide quantitative results, which are helpful indicators of disease activity and useful to monitor the response to treatment. Nontreponemal test results may be falsely negative in nonreactive, in early primary syphilis, latent acquired syphilis of long duration or late congenital syphilis. Treponemal tests currently in use are the fluorescent treponemal antibody absorption (FTA-ABS) test and the microhemagglutination test for T pallidum (MHA-TP). Positive FTA-ABS and MHA-TP test results usually remain reactive for life, even after successful therapy. Treponemal test antibody titers correlate poorly with disease activity and should not be used to assess treatment response. Treponemal tests also are not 100% specific for
Syphilis and false positive reactions may occur in patients with other spirochetal diseases, such as yaws, pinta, leptospirosis, rat-bite fever, relapsing fever, and Lyme disease. VDRL test has been frequently used to screen individuals suspected of syphilis. This test has significant specificity in healthy persons, although its sensitivity is less in elderly and ill persons.

There is significant geographical clustering of disease with outbreaks seen among homosexuals. A recent study of dental school patient population in Louisiana State University had shown that 1.34% patient had positive RPR test. A rural Brazilian study for sexually transmitted diseases showed 3% seroprevalence among 341 women.

In Asian countries prevalence is variable but high in different population groups as well. A 12% sero-positivity was seen in drug-users of St-Petersburg, Russia, while in India seroprevalence among long distance truck drivers was 13.3%, but a lower incidence in blood donors (0.22%). Among 1534 slum dwellers from Dhaka, Bangladesh serologic evidence of syphilis infection was found in 6%. A very high seroprevalence (43%) among 296 male transvestites from Jakarta, Indonesia gives us the magnitude among such high-risk group in Asian countries.

Syphilis has not been an uncommon condition in Pakistan and, in addition to transmission to the sexual partner; it has been transmitted to offspring. A VDRL test was found to be positive in 0.07% blood donors in a hospital in Pakistan. Considering these facts, our figure of 0.67% seroprevalence in healthy general population seems a bit on higher side. However routine testing should be directed to individuals with high risks. These include adolescents, women of childbearing age, blood product recipients, IV drug users etc.
Any positive VDRL test must be confirmed with fluorescent treponemal antibody absorption (FTA – ABS test) and, in addition to a thorough physical examination to determine stage of syphilis. There may be a need for lumbar puncture to rule out neurosyphilis.\textsuperscript{13} While high risk individuals should be screened for serological tests for syphilis,\textsuperscript{14} all with positive VDRL test do not have neuropsychiatric involvement and may not need more aggressive evaluation approach.\textsuperscript{15}

In conclusion, it is recommended that a screening test for syphilis should be part of a comprehensive medical evaluation in only those asymptomatic persons who have risk factors.

\textbf{REFERENCES}


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