SIGNIFICANCE OF TPHA TEST

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ABSTRACT

TPHA is a specific serological test for syphilis. VDRL is the routinely used screening test but is not specific. The current study evaluates the utility of TPHA as a specific test for syphilis.

KEYWORDS

Secondary Syphilis, Palmoplantar Rash


INTRODUCTION

The signs and symptoms of syphilis vary depending in which of the four stages it presents (Primary, Secondary, Latent, and tertiary). The primary stage classically presents with a single chancre (A firm, Painless, Non-Itchy Skin Ulceration), secondary syphilis with a diffuse rash which frequently involves the palms of the hands and soles of the feet, latent syphilis with little to no symptoms, and tertiary syphilis with gummas, neurological, or cardiac symptoms. It has, however, been known as "The great imitator" due to its frequent atypical presentations. Diagnosis is usually made by using blood tests. Blood tests are divided into nontreponemal and treponemal tests. Nontreponemal tests are used initially, and include venereal disease research laboratory (VDRL) and rapid plasma reagin tests. However, as these tests are occasionally false positives, confirmation is required with a treponemal test, such as treponemal pallidum haemagglutination TPHA.

Syphilis, a chronic systemic infection caused by Treponema pallidum is usually sexually transmitted and characterised by episodes of active disease, interrupted by latency. Among the serological test for syphilis, VDRL is the most inexpensive and commonly done test. In clinically suspected cases, a non-reactive VDRL should always be checked with confirmatory tests like TPHA. Here we report our experience regarding the result of VDRL and TPHA test.

MATERIALS AND METHODS

1000 patients (January 2014 to March 2014) 3 months attending the STI OPD were screened randomly. They were subjected to detailed history, clinical examination, VDRL test, ELISA for HIV serology. History, examination was done as routine in the clinical OP. HIV testing is mandatory for all STI OP attendees.

Serum samples obtained from all the patients were screened for cardiolipin antibodies by VDRL testing using antigen obtained from the serologist to Government of India, Kolkata. VDRL reactive specimens were subjected to quantitative VDRL test with successive two-fold dilutions. All the sera reactive in qualitative VDRL test as well as Nonreactive samples were examined for anti-treponemal antibodies by TPHA test.

DISCUSSION

In Bombay Hospital Journal, Vol.44, No 1, Jan2002, J. G. Salija, M. Sajinkya, Bhavna Khemani have stated though cost effectiveness of VDRL test makes it a common screening test for syphilis. They have observed from their study that there are many weak positive cases and cases showing Prozone phenomenon in VDRL tests. Hence to accurately diagnose and confirm syphilis it would be better to do TPHA along with VDRL in most of the cases.

Nowadays with rising urban population makes leading life alone, and there is a high tendency for STD with irregular treatment and repeated exposure. In 1982, Barbara had recommended discarding VDRL test and depend on TPHA for serological diagnosis of syphilis. TPHA is found to be superior in sensitivity and specificity over VDRL as seen in our study.

In our study, all were HIV negative. The patients who had a positive TPHA with a Nonreactive VDRL would have been treated for syphilis or may be in the late stage of syphilis. They are likely to develop complications like cardio-syphilis and neuro-syphilis and the scar of the syphilitic infection is shown by TPHA positivity. Though TPHA is not a 100% sensitive and specific test, the ease of performing the test in a less equipped laboratory makes it a better option than more specific treponemal tests. The use of only one type of serological test is insufficient for diagnosis. Therefore, the diagnosis of infection is commonly performed using VDRL and TPHA tests. Both the test have an advantage in certain situations. When performed dually on one sample, adequate information can be acquired about whether the patient is in the latent and late stage of syphilis.

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CONCLUSION
VDRL is the common non-specific test for syphilis being routinely done. However, it is considered to perform specific tests like TPHA to confirm the VDRL results and to find out hidden syphilitic infection. This is essential for early diagnosis and prompt treatment which is essential to reduce morbidity and mortality.\(^1\)

RESULTS

<table>
<thead>
<tr>
<th>Total number of patients</th>
<th>VDRL Reactive</th>
<th>TPHA Reactive</th>
<th>VDRL Reactive + TPHA positive</th>
<th>VDRL Non-Reactive + TPHA positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>981</td>
<td>19</td>
<td>977</td>
<td>23</td>
</tr>
</tbody>
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Among 1000 Patients Screened:
- VDRL reactive- 15 males and 4 females.
- 2 males who were VDRL Non-Reactive gave history of previous syphilis infection.
- 1 female who was antenatal was VDRL Non-Reactive but TPHA positive. This could be due to biological false positive VDRL.
- TPHA Positive but VDRL negative- 2 males and 2 females.
- The 4 patients who were VDRL Non-Reactive did not have any clinical manifestation of syphilis.

REFERENCES
5. Gradwell clinical lab methods and diagnosis 8th 2264-65 1990.