

BIOLOGICAL FALSE REACTIVE VDRL TESTS: WHEN TO RE-TEST?

Viroj Wiwanitkit

Department of Laboratory Medicine, Faculty of Medicine,
Chulalongkorn University, Bangkok, Thailand

Abstract. Syphilis serology is a basic screening test for the workers who want to go abroad. Many countries reject migrant workers who have reactive syphilis serology. Biological false reactives warrant repeated syphilis serology. We prospectively studied 30 patients (25 males and 5 females) who had biological false reactive VDRL tests (VDRL reactive, confirmatory TPHA negative). Affirmative tests for syphilis serology for all cases were performed every two weeks. On follow-up, the expected range (95 % CI) for seroconversion was between 9.25 and 10.49 weeks. Most cases (25 cases) completely returned to the VDRL non-reactive stage within 10 weeks; three cases completely returned within 6 weeks; 2 cases completely returned within 14 weeks. It is recommended that repeat syphilis serology be conducted 10 weeks after an initial biological false reactive VDRL test.

INTRODUCTION

Syphilis is caused by the spirochaete, *Treponema pallidum*. Screening for syphilis depends mainly on serological tests. Microscopy is useful in diagnosing syphilis in its primary stage, whereas serological tests are used for diagnosing primary, secondary, or latent stages of syphilis. The most widely used screening tests for syphilis are the Venereal Disease Research Laboratory (VDRL) and the rapid plasma reagin (RPR) while acceptable confirmatory tests are the fluorescent treponemal antibody test (FTA) and the *Treponema pallidum* hemagglutination test (TPHA) (Siegel and Washington, 1987).

Testing for syphilis, especially by VDRL, is one of the requirements in the screening of workers who intend to go abroad. In many countries, such as Taiwan, entry permits are refused to those who have a VDRL-reactive result. However, biological false reactive VDRL results are possible. These cases require follow-up in order to obtain a true non-reactive result. However, no suggested time of follow-up has been established. It is useless to repeat screening too early. In this paper, a report on the follow-up of 30 patients who had biological false reactive VDRL results is presented.

MATERIALS AND METHODS

During the year 2000, 30 patients (25 males and 5

females) who had biological false reactive VDRL results (VDRL reactive, confirmatory TPHA negative) were studied prospectively. All were laborers who visited the Out-patient Department, King Chulalongkorn Memorial Hospital Bangkok; the patients were seeking screening before going abroad. Affirmative tests for syphilis serology for all cases were performed every two weeks. All laboratory analyses were performed in the Clinical Immunology Laboratory, King Chulalongkorn Memorial Hospital. All recorded data were analyzed. The descriptive statistics as mean and standard deviation (SD) was used. The expected range of seroconversion, recovery to true non-reactive, was calculated as 95 % confidence interval (95 % CI).

RESULTS

On follow-up, the average period (mean \pm SD) for recovery to true non-reactive was 9.87 ± 1.66 weeks. The expected range (95 % CI) for seroconversion was between 9.25 and 10.49 weeks. Most cases (25 cases) returned to the VDRL non-reactive stage within 10 weeks. Three cases were non-reactive within 6 weeks. The other 2 cases were non-reactive within 14 weeks.

DISCUSSION

The usefulness of laboratory tests in the diagnosis of syphilis depends on the selection of the appropriate standard tests (Nadarajah, 1990; Young, 1998). Since routine syphilis screening is carried out by means of a non-treponemic test such as VDRL, positive results should be confirmed by treponemic techniques such as fluorescent treponemal antibody absorption (FTA-ABS) and/or hemagglutination (TPHA); the interpretation of the VDRL results must be done with this caveat in mind (Griemberg *et al*, 2000).

Correspondence: Viroj Wiwanitkit, Department of Laboratory Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand. E-mail: wviroj@pioeer.netserv.chula.ac.th

Generally, reactive syphilis serology result can be classified into two types: true reactives, presenting as reactive results to both treponemic and non-treponemic tests, or as a reactive result to a treponemic test; biological false reactives, with only reactive results to non-treponemic tests. Griemberg *et al* (2000) gave the rate of biological false positives as 0.66%. Seroconversion to true non-reactive is required before emigration. Lost may be occurred in cases of repeated tests in improper period.

In this study, it was found that the proper time for repeat syphilis testing is about 10 weeks after initial serology. Applying this to our data, the detection rate of seroconversion to true non-reactive, equaled to 93.33 % can be derived. Therefore, we recommended a 10 week period in follow-up for syphilis serology among the workers with the problems of syphilis biological false reactive.

ACKNOWLEDGEMENTS

The author is grateful to Professor Phairut Deesudchit for his valuable suggestions and patients' data.

REFERENCES

- Griemberg G, Ravelli MR, Etcheves PC, Orfus G, Pizzimenti MC. Syphilis and pregnancy. Prenatal control, seroprevalence and false biological positives. *Medicina* 2000;60:343-7.
- Siegel D, Washington AE. Syphilis. Updated approach to an old disease. *Postgrad Med* 1987;81:83-90.
- Nadarajah M. Testing for syphilis - rational use and interpretation. *Singapore Med J* 1990 ;31:381-3.
- Young H. Syphilis. Serology. *Dermatol Clin* 1998;16:691-8.