Making serological diagnosis of syphilis more accurate

Sir,

We read with interest the paper "Evaluation of the usefulness of *Treponema pallidum* hemagglutination test in the diagnosis of syphilis in weak reactive Venereal Disease Research Laboratory sera" by Bala *et al.*, which was recently published in your journal. They have reported that among 80 sera detected to be reactive in the Venereal Disease Research Laboratory (VDRL) test, 68 (85%) had titers of <8.[1] When these sera were subjected to *Treponema pallidum* hemagglutination (TPHA) test, it was found that 59 (86.8%) of them showed positivity. The biological false positivity (BFP) rate in their study was quite low (0.2%). To improve the accuracy of detection and confirmation of syphilis, the authors recommend that all sera reactive in VDRL (a reaginic test) regardless of their titer should be confirmed by TPHA (a treponemal test); this recommendation has also been made by World Health Organization.[2]

Between 2008 and 2011 we screened 11,478 serum samples, by both rapid plasma reagin (RPR) test (RPR, which is a reaginic test similar to VDRL test) and TPHA at Sri Devaraj Urs Medical College, Kolar, Karnataka. RPR test was performed using the RPR Kit of Span Diagnostics Ltd., India, and TPHA by the TPHA Kit of Plasmatec Laboratory products, UK. The findings are presented in Table 1.

In our study, we found that 136 (1.18%) of the 11,478 sera screened for syphilis were reactive in RPR test. The seropositivity among pregnant women in our study was 1.08% which was higher than the seropositivity of 0.96% seen among patients suspected of syphilis. We attribute this unusual finding to the large number of patients with different gynecological disorders screened to rule out syphilis. This seropositivity rate is comparable to that of 1%, observed among referrals from the Outpatient

Table 1: Seropositivity of syphilis in different the groups of patients

Subjects	No. screened	RPR reactive and TPHA positive samples (%)*	RPR titers (%)	
			<8	≥8
Patients suspected of syphilis	5221	50 (0.96)	16/50 (32)	34/50 (68)
Pregnant women	6221	67 (1.08)	32/67 (47.8)	35/67 (52.2)
Neonates born to seropositive mothers	36	19 (57.78)	8/36 (42.1)	11/36 (57.9)
Total	11,478	136 (1.18)	56/136 (41.18)	80/136 (58.82)

*All sera reactive by RPR test were also positive by TPHA. RPR=Rapid plasma reagin; TPHA=*Treponema pallidum* hemagglutination

Departments and wards, reported in a recent study from Delhi.[3]

In our study, all the 136 sera reactive in RPR were also positive in TPHA. Thus in our study no BFP were detected. Above all, most importantly, similar to the observations made by Bala *et al*., we also found that a sizable proportion of reactive sera showed a titer of <8 in the reaginic test.[1]

After treatment of syphilis usually reaginic tests become non-reactive in 1-2 years. If the reaginic test is reactive in low titers it may mean delayed institution of treatment or past untreated syphilis. It may indicate failure of treatment to eradicate treponemes from the body.[4]

We strongly recommend that all patients whose sera are reactive in the reaginic test, irrespective of titer, should be confirmed by TPHA. Those found positive in both the tests should be treated with penicillin, unless they give a definitive history of such treatment in the past.[5] We feel that this strategy in treatment is more beneficial to the patient and reduces the complications of untreated syphilis.

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