

VDRL SERO—SURVEY IN SIRMUR DISTRICT OF HIMACHAL PRADESH

S K Bagchi, Subhash Chakraborty, A Das, Ira Chakraborty and S N Ray

A team conducted a VDRL sero-survey in Sirmur district of Himachal Pradesh during September 1981. Of 698 persons examined, 4.6% were reactive by the qualitative test. By the quantitative test, the overall reactivity at a dilution of four and above was 1.1%, and at a dilution of eight and above, it was 0.6%. All age-groups of twenty years and above were reactive. No reactivity was observed amongst the teenagers. Reactivity amongst males and females was 3.9% and 5.4% respectively.

Key words : VDRL survey, Himachal Pradesh.

The first ever serious effort to quantify the magnitude of the problem of sexually transmitted diseases (STD) was made in Himachal Pradesh when a WHO Demonstration Team with the help of the state health department surveyed almost the entire state (then a Union Territory) during 1949-51. Besides assessing the problem of venereal diseases, it also provided mass treatment and imparted training to several medical teams. Since withdrawal of the WHO team in 1951, the STD control activities had been continued and expanded by the Govt. of Himachal Pradesh. These included establishment of VD clinics, conduction of mass surveys and mass treatment campaigns. As a result of these measures, a reduction in the incidence of venereal diseases in the state was observed.¹ The state had maintained its lead in the years to come and had as many as 68 VD clinics functioning in 1975 which was the highest amongst all states and union territories.²

A team from the National Institute of Communicable Diseases, Delhi, carried out a VDRL sero-survey in some selected areas of Sirmur district of Himachal Pradesh during September 16-24, 1981. While an evaluation of the control measures was not attempted, the reactivity status of the surveyed population is presented in this communication.

Materials and Methods

Field laboratories were set up at Chokar, Haridevpur and Nora of Sirmur district. Establishment of the camps and services offered by them were widely publicised through the health workers in the area. Single samples of venous blood and basic relevant personal data were collected from the subjects reporting to the camps. The sera were allowed to separate at room temperature and were examined either on the same day or were preserved at 4-8°C to be examined on the following day by standard VDRL test. All reactive and weakly reactive sera were further examined by the quantitative method. The antigen was obtained from the laboratories of the Serologist to the Government of India, Calcutta. The sero-reactive cases were further interviewed and examined physically. No effort was made to determine the extent of biological false positivity (BFP). Altogether, 698 persons in various age groups of both sexes were examined serologically. All the persons were of Hindu faith, belonged to the rural set up, and were economically poor. Except the school students who formed 11.3% of the surveyed population, most of the adults were illiterate.

Results

Of the 698 sera examined, 32 (4.6%) were reactive by the qualitative test. On quantitative test for these 32 sera, one was reactive at 1:64,

From the National Institute of Communicable Diseases, 22-Sham Nath Marg, Delhi-110 054, India.

Address correspondence to : Dr. Subhash Chakraborty.

Table I. Age and sex distribution and reactivity rates of the sero-surveyed population.

Age in years	Number of								
	Males			Females			Total		
	Examined	Reactive	(%)	Examined	Reactive	(%)	Examined	Reactive	(%)
0—9	1	0	—	1	0	—	2	0	—
10—19	102	0	—	75	0	—	177	0	—
20—29	111	4	(3.6)	101	8	(7.9)	212	12	(5.7)
30—39	69	4	(5.8)	48	3	(6.3)	117	7	(6.0)
40—49	43	3	(7.0)	48	5	(10.4)	91	8	(8.8)
50 and above	56	4	(7.1)	43	1	(2.3)	99	5	(5.0)
All ages	382	15	(3.9)	316	17	(5.4)	698	32	(4.6)

one at 1:32, two at 1:8, four at 1:4, four at 1:2, and eight at 1:1; two were reactive only at 0 dilution and the rest ten were weekly reactive only at 0 dilution. Percentage-wise, the overall reactivity at the dilution of four and above was 1.1% and at dilution of eight and above was 0.6%. Reactivity by the qualitative test was observed in all the age groups except below twenty years and the reactivity was slightly higher in females (5.4%) than in males (3.9%). The age-specific reactivity rates showed an increase with advancement in the age till 50 years when again there was some decrease in the reactivity (Table I), especially in the females.

Of the four sera reactive at dilutions of eight or higher, two were from males and two from females, all being in the age group 20-45 years, and none were related to each other. Of the two males, one was a divorcee and the other one was recently married. Of the two females, one was a divorcee and the other one was married; both had history of miscarriages.

The information elicited from 22 of the reactive cases who were available for further interview and physical examination revealed that all of them had history of extra-marital relationship, in most of the instances with relations and in some cases with casual acquaintances.

Educational level was either nil or upto primary level except in one. History of pregnancy-wastage was given by 6 out of 12 reactive females available for re-examination. Secondary syphilitic rash could be observed in one reactive male aged 21 years, reactivity status being 1:4.

Of the total 698 persons sero-surveyed, 201 (28.8%) gave positive history of examination by similar means sometimes in the past, and 52 (25.9%) of these 201 gave history of positive reactivity and having received treatment. None of them however belonged to the age group below twenty years. It was further observed that polygamy, frequent divorces, and repeated marriages were in vogue in the community and extra-marital sexual relations were not considered an absolute taboo.

Comments

It has been observed that a confident diagnosis of syphilis can be made if the sera are reactive at a dilution of 8 or above,^{3,4} though reactivity at lower dilutions does not negate a treponemal infection. Hence, VDRL test will continue to have its value, especially in field surveys.

The reactivity rate observed during the current survey compares well or is sometimes slightly higher in comparison with the rates

observed in many areas of India including Madhya Pradesh,⁵⁻⁶ Kashmir,⁷ Sikkim,⁸ and Lucknow in Uttar Pradesh,⁹ where the reactivity rates varied between 0.5% and 7.0%. However, the rate is quite low in comparison to reactivities observed in Himachal Pradesh itself about three decades earlier (30-40%),^{10,11} Dang area of Gujarat (14.1%),¹² Manipur (overall 12.3% and as high as 15-20% in the valley)¹³ Uttar Kashi (30.0%) and Tehri Gahrwal (10.0%) districts in Uttar Pradesh,¹⁴ and Panaji in Goa (11.1%).¹⁵

Another noticeable feature is the absence of reactivity amongst the population in the age group below 20 years. In contrast, several studies have revealed increasing incidence of venereal diseases amongst the teenagers in recent years and the incidence has been reported to be to the tune of about 20.0%.^{16,17} The VDRL reactivity in the age-group of 11-20 years in Kashmir during early seventies was reported to be 3.5%.⁷

Information on the socio-economic conditions and sexual practices does not show any gross deviation from what was observed in early fifties.¹¹ However, extensive and repeated campaigns for case detection and treatment may well explain the relatively low sero-positivity rate amongst the adults as well as absence of reactivity amongst the teenagers in the surveyed population.

Acknowledgement

Assistance from the local health authority and from Smt M Unni, Shri Hari Singh Panwar, and Shri Yashpal Singh of NICD is acknowledged.

References

1. Directorate General of Health Services, Ministry of Health and Family Planning, Government of India, New Delhi : Annual Report, 1963; p 40.
2. Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Planning, Government of India, New Delhi, Pocket Book of Health Statistics of India, 1976; p 80.
3. Sen R : Interpretations of VDRL test results in respect of diagnosis of syphilis. Working paper presented at Workshop on Sexually Transmitted Diseases, Delhi, 1975. (Unpublished).
4. Pasteur Institute, Coonoor : Scientific Report, 1969; p 144-146.
5. Chakraborty S, Ghosh TK and Dutta M : VDRL sero-survey in Sagar district of Madhya Pradesh, Ind J Dermatol Venereol Leprol, 1983; 49 : 57-60.
6. Ghosh TK, Chakraborty S and Dutta M : VDRL positivity in labour colonies of Bhilai Steel Plant, Bhilai, Madhya Pradesh, India-1982, Ind J Dermatol Venereol Leprol, 1984; 50 : 149-151.
7. Hajini GH, Kour M and Ahmadshah SN : Serological survey for syphilis (STS) in Kashmir, Ind J Dermatol Venereol, 1975; 41 : 103-105.
8. Mitra SK : Some observations following a serological survey for syphilis infection among the population of Sikkim, Ind J Med Sci, 1970; 24 : 635-640.
9. Kapoor OP and Prasad BG : A survey on the prevalence of syphilis in a railway colony, Lucknow, Ind J Dermatol Venereol, 1964; 30 : 19-33.
10. Tamji RB : Control of venereal diseases in India, Swasth Hind, 1959; 3 : 189-192.
11. Cutler JC, Kvittingen J, Rose E et al : Mass treatment of syphilis in an Indian province. Report of the World Health Organization Venereal Disease Demonstration Team in the Ghund area of Himachal Pradesh, India, Bull Wld Hlth Org, 1952; 5 : 377-439.
12. Patel TB, Thakor VH, Boman TJ et al : Serological survey for syphilis, in : Report on the Venereal Diseases and Nutritional Deficiency Diseases. Survey conducted in Dang district, Gujarat state, ICMR Spl Ser, 1962; 52 : 1-51.
13. Directorate General of Health Services, Ministry of Health and Family Planning, Government of India, New Delhi : Annual Report, 1963; p 44.
14. Directorate General of Health Services, Ministry of Health and Family Planning, Government of India, New Delhi : Annual Report, 1963; p 43.
15. Sehgal VN, Singh I, Rege VL et al : Serological survey in a hospital population, Ind J Med Sci, 1972; 26 : 156-159.
16. Bai VK and Reddy I : Venereal diseases and sex education, Paper presented at Workshop on Sexually Transmitted Diseases, National Institute of Communicable Diseases, Delhi, 1975. (Unpublished).
17. Mathur W : Sex education, Paper presented at workshop on Sexually Transmitted Diseases, National Institute of Communicable Diseases, Delhi, 1975. (Unpublished).