

Epidemiological Studies on Syphilis in Japan

(A Survey in 1958)

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We investigated morbidity of syphilis among various groups of people in Kanto District, centering around Tokyo. Serological tests for syphilis were carried out in a total of some three hundred thousand men and women. Tab. 1 gives the results of tests.

Tab. 1 Breakdown of Blood Sample by Source

Citizens	Laborers	Hospitals	Sanatoriums	Insane-asylums	Others
circulating dispensary	food factory	Tokyo 2	5	12	Blood Bank (8)
mass examination for T. B.	shipyard	Kanagawa 4	3	4	J. N. R. Employees
expectant mothers		Saitama 3		2	4 district Office
youth's association		Tochigi 7	2	3	Metropolitan
		Gumma 2	2	2	Police Board
		Ibaragi 5	3	4	Test for
		Chiba 8	4	10	Policemen
		Yamanashi 1	1	3	
		subtotal (30)	subtotal (20)	subtotal (40)	
9,711	6,788	4,978	5,401	10,232	about 260,000
37,110					

There are several different techniques of serological tests, and each technique is claimed to have specificity and sensitivity comparable to no other methods. Following the treatment of patients with late latent syphilis in our clinic, we had followed them up for five years, and found that there were differences in the results of serological tests depending on the method employed. The data contained in Fig. 1~2 were obtained from 130 patients who had given three plus reactions to all methods of tests prior to treatment.

Morbidity of syphilis among the inhabitants of certain communities was investigated. Of some 9,000 persons investigated, 4% gave positive tests. The rate of positive reactions varied from 1.8 to 11% from community to community. The fishermen engaged in coastal fishing showed the highest rate of positive reactions. As contrasted to the results of similar tests before the Second World War, the seropositive rate was higher above the

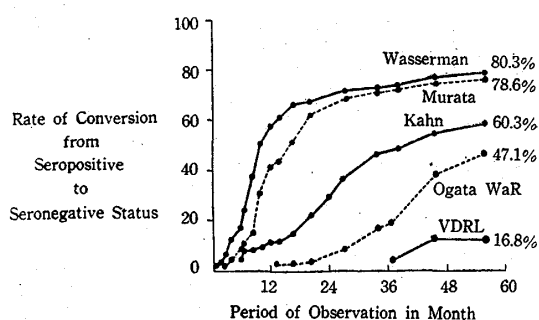


Fig. 1 Curves Showing Conversion from Seropositive to Seronegative Status in 130 Patients followed for 5 years in Our Clinic (Patients showing three plus reaction before treatment)

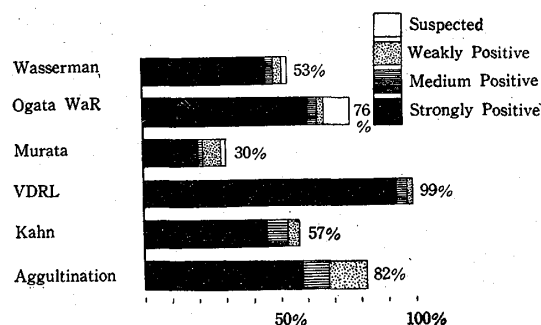


Fig. 2 Behavior of Seroreactions of the Blood Samples Investigated

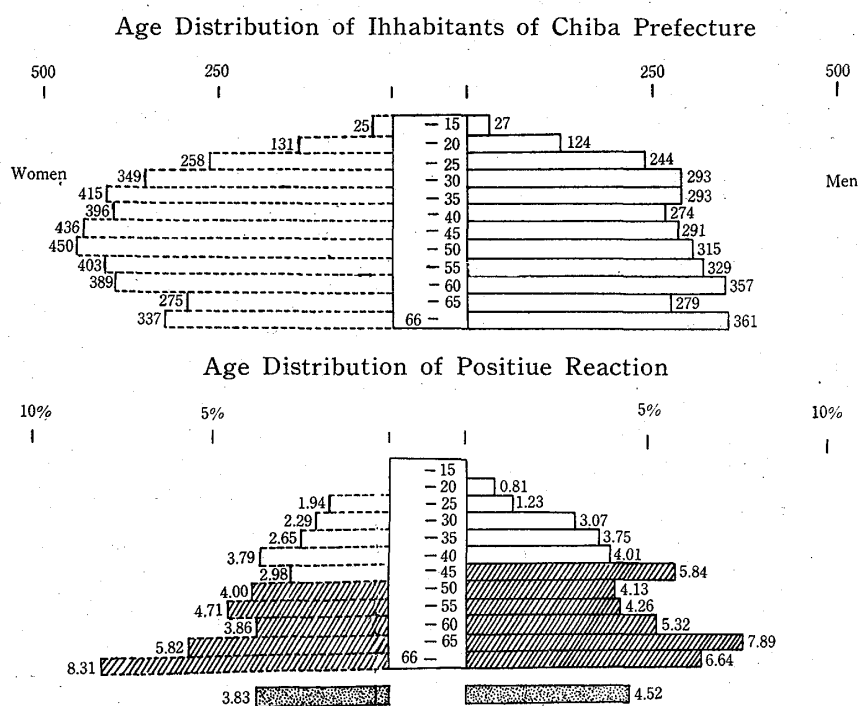


Fig. 3 Age Distribution of Positive Seroreactions Among the Inhabitants of Chiba Prefecture

age of forty than in any other age group. Fig. 3 gives the age distribution of positive serological reactions.

Serological tests performed in 2,400 expectant mothers gave a positive rate of 1.9%. It is worthy of note that, as shown in Fig. 4, the positive rate among multiparous mothers above the age of 35 was 9%.

Serotests performed in about 7,000 workers in a food factory and a shipyard gave the positive rate of about 4%. As is shown in Fig. 5, the suspected cases of syphilis which shunned the tests were assumed to run up to twice or three times the number of seropositive cases.

Of about 5,000 patients hospitalized in thirty different medical institutions, 237 patients gave positive tests. Morbidity of syphilis was high among patients with pulmonary

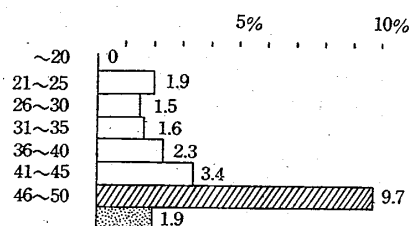


Fig. 4 The Rate of Positive Seroreaction Among Expectant Mothers in a Certain City in Chiba Prefecture (2,4000 expectant mothers)

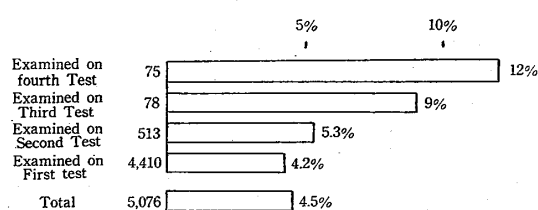


Fig. 5 Results of Seropositive Tests for Syphilis Among Shipyard Workers

tuberculosis, gastro-intestinal diseases and cardioangiologic diseases. Neuralgic patients were not free from syphilitic infection. To my surprize, not only most of the patients who had syphilis but also physicians in charge were unaware of the infection.

Blood samples obtained from about 5,000 tuberculous patients in 20 sanatoriums gave an average positive reaction rste of 3.3%.

Serotests were performed in about 10,000 patients in 40 insane asylums, who constituted about half the total number of patients in insane asylums in Kanto District. The rate of positive reaction was 8.8% on an average. But, as shown in Fig. 6~7 and Tab. 2, the rates of positive reactions among patients with syphilitic mental disorder, toxic psychosis and involution psychosis were 75%, 14% and 12% respectively, and the seropositive rate was very high above the age of forty.

In addition to the tests performed by us, we have obtained data on positive seroreactions from various sources. I shall give a brief account of them. The blood bank has

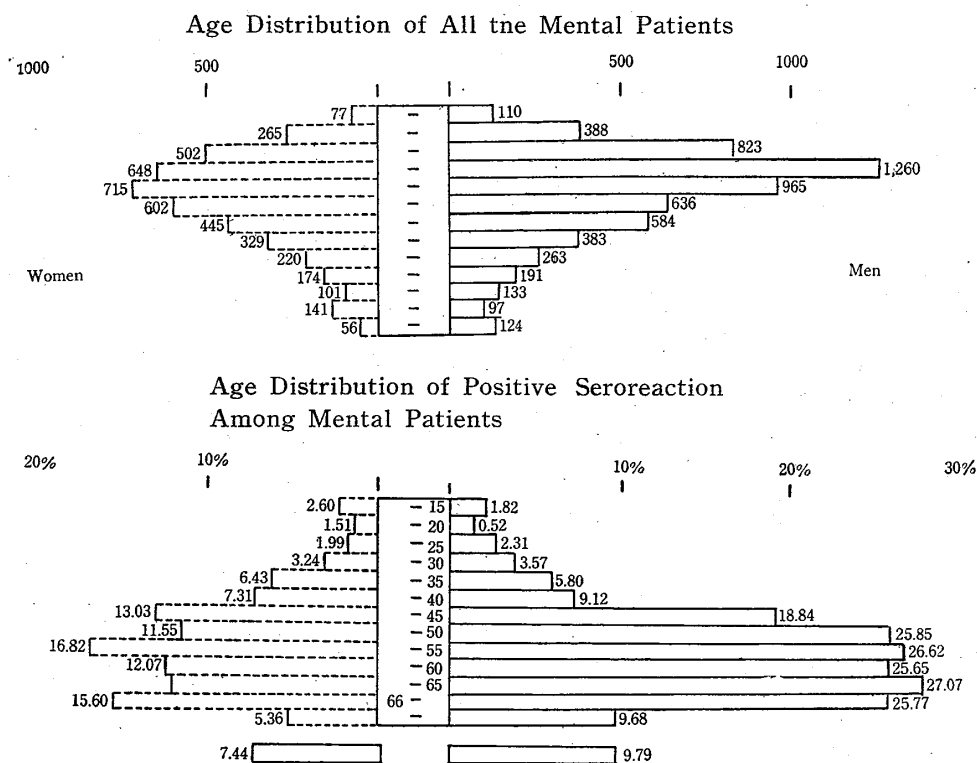
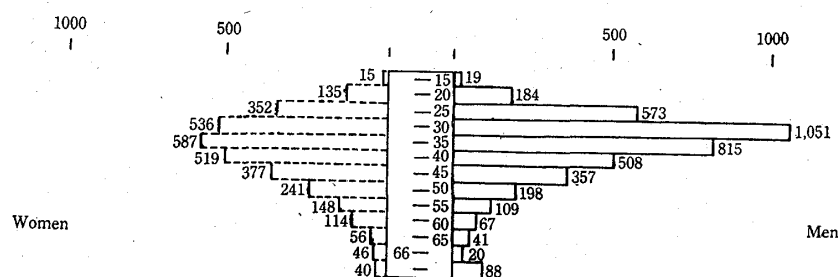


Fig. 6 Age Distribution of Positive Seroreactions Among the Mental Patients Investigated (10,232 patients)

Age Distribution of Schizophrenia



Age Distribution of Seropositive Rates Among Patients with Schizophrenia

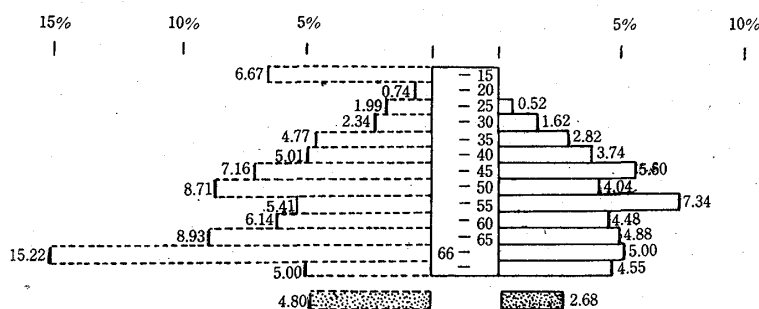


Fig. 7 Age Distribution of Patients with Schizophrenia Who Gave Positive Serotests

Tab. 2 Breakdown of Mental Patients Investigated and the Rate of Positive Reactions

diagnose	No. of patients	seropositive rates
syphilitic mental disorder	656	75.3 %
schizophrenia	7,186	3.6
dementia	320	4.4
involution psychosis	252	12.7
psychoneurosis	143	4.2
psychopathia	178	8.4
oligophrenia	451	3.8
epilepsia	420	3.1
toxic psychosis	169	14.2
others	457	5.7
total	10,232	8.8

reported to us that among some 200,000 prospective blood donators there were positive reactions of from 0.1% to 6%, with an average of 3.8%.

Positive reactions among some 45,000 National Railroad workers ranged from 0.8% to 4%, with an average of 2%. As shown in Tab. 3~4, there was no difference in the rate of positive reactions depending on the place and type of work. Fig. 8 shows that the rate was higher above the age of thirty-five than below that.

Metropolitan Police Board have communicated to us that serological tests performed in 4,000 applicants for the position of policeman revealed 14 positive reactors, or 0.3%. The low positive rate may be accounted for by the majority of applicants being below

Tab. 3 Seropositive Rates Among Railroad Workers as Divided by Railroad District

Year	Tokyo		Chiba		Mito		Takasaki	
1951	3,672	1.9 %	812	2.7 %	681	3.3 %	1,123	2.4 %
1952	5,894	1.8	1,370	2.4	581	2.2	897	1.6
1953	6,660	1.5	970	1.5			3,786	1.4
1954	4,430	2.1	1,500	1.4			997	0.8
1955	5,767	2.5						
1956	5,091	3.6						
1957	7,009	2.3						
1958	3,185	4.1						

Tab. 4 Seropositive Rates Among Railway Workers Divided by Type of Work

Type of Work	No. of Person Investigated	%
station master	77	2.6
ass't station master	377	4.0
" (on reserve)	276	4.0
business clerk	41	2.4
operating clerk	490	4.9
signal man	1,334	4.2
train despatcher	720	3.5
switchman	999	3.6
handyman	752	2.1
conductor	2,061	2.1
steam engine driver, assistant	2,261	2.4
electric engine driver, assistant	1,138	2.4
electric train driver, assistant	1,549	2.3

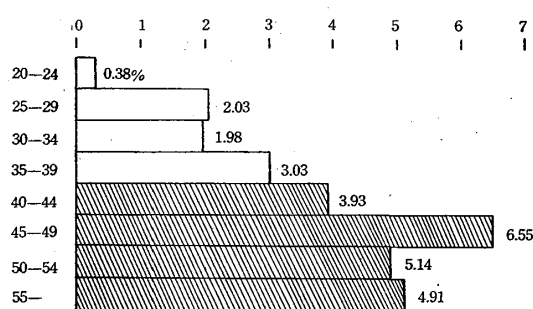


Fig. 8 Age Distribution of Seropositive Reactions Among Railroad Employees (total number investigated, 12,100)

the age of twenty.

The present investigation led us to the following conclusions:

1. Morbidity of syphilis in one country could not be compared with any validity with that of another without the adoption of the same antigen and the method of tests by all the countries of the world.

2. In our investigation, determination of seropositivity was based on Ogata Wassermann technique using cardiolipin

antigen. Other five methods were also employed to confirm the results.

3. Our investigation revealed that about 4% of some 300,000 persons were latent cases of syphilis.

4. We cannot underestimate the influence of occupation and the factors of environment on morbidity of syphilis. The results of our investigation show that morbidity of syphilis

is higher above the age of forty than below that.

5. There were no small number of cases of syphilis among hospitalized patients. Both the patients and physicians in charge were unconscious of the infection.

6. Nowadays the patients with syphilitic mental disorder who are being cared for in insane asylums in Japan account for only 6% of all mental patients in the same institutions. Penicillin therapy has a marked effect on syphilis, but mental disturbance occurring in persons with cured neurosyphilis prevents them from being restored to normal daily life.

7. Cases of syphilis with clinical manifestations showed a marked increase in number immediately after the end of the Second World War. It now appears, however, that those cases have greatly decreased in number, but cases of latent syphilis have not decreased at all. It is regrettable that two thirds of these cases remain untreated in Japan.

(The article presented here have been prepared as manuscript for addresses to be made at Universities and Institutes in U. S. A., Europe and India during the author's tour of inspection from September, 1960 to Januar, 1961.)

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Morbidity of Syphilis in Japan after the Second World War

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In Japan, the law for the prevention of venereal disease has long been in force. However, no serious attention has ever been paid by the authorities concerned to getting rid of this enemy of mankind: efforts in improving the system of reporting patients, following them up, and investigating the source of infection were virtually non-existent. Consequently, statistical figures on venereal disease published by the government do not give the true picture of the prevalence of this disease in Japan. The actual number of cases amounts, I am sure, to more than ten times the reported cases.

In order to give you an idea of the actual condition of the spread of syphilis in Japan, I wish to report the result of survey of patients seen and treated in our clinic before and after the Second World War. You will see from this that luetic patients increased greatly in number during the period of four or five years following the end of the war.

The patients with venereal disease in Tab. 1 and 2 far outnumber all the patients put together who had infectious disease for which they were liable to be isolated. This indicates how factors of environment have a dominant influence on the spread of venereal disease. A marked increase in the number of patients with manifest syphilis during the period from nineteen forty-six to forty seven will be accounted for by demobilization of soldiers, sending back of Japanese from abroad, evacuation of families from wartorn cities