

LEPROSY IN SINGAPORE: A SURVEY OF THIS DISEASE BETWEEN THE YEARS 1962-1967

By Khong Kit Yew

(Medical Officer, Trafalgar Home, Singapore)

INTRODUCTION

Leprosy is a complex disease; complex in its epidemiology, complex in its clinical presentation and complex in the treatment it may require.

Moreover, it is a disease of very long standing. The earliest reference to leprosy in Chinese medical literature occurs in the NEI CHING 內經 or, the Yellow Emperor's Classic of Internal Medicine, written in 250 BC. Wu Lien Teh and K.C. Wong quoted the following remarks from it in their "History of Chinese Medicine", published in 1936:

1. Those suffering from *ta feng* have stiff joints, the eyebrows and beard fall off.
2. The wind scatters throughout the muscles and comes into conflict with the *wei chi* or defensive force. The channels being clogged, the flesh becomes nodular and ulcerates. And because of the stagnant movements of this defensive force, numbness results.
3. The vital spirits degenerate and turn cloudy causing the nose to change colour and rot, and the skin to ulcerate. The wind and chills lodge in the blood vessels and cannot be got rid of. This is called *li feng*.
4. For the treatment of *li feng* prick the swollen parts with a sharp needle, let the foul air out until the swelling subsides.

Very little has been published in our own medical journals on this subject. (2, 6, 7, 8) This article is intended to supply some information on certain aspects of leprosy as met with in Singapore.

THE LAW AND LEPROSY

The Leprosy Ordinance, 1955, makes it mandatory to segregate infectious cases of this disease. Trafalgar Home is the Government hospital for admission of such patients. The Government Skin Clinic in Irrawaddy Road is part of the hospital, for the investigation and outpatient treatment of this condition.

All clinical cases are registered at this Clinic. Their routine registration has provided the statistics for this paper.

PREVALENCE RATE

Since 1951, when the register was first compiled, the total of known cases at 31-12-67 was 6087. The total population of Singapore at 31-12-67 was 1,974,600. This gives a prevalence rate of 3.08 per 1000 for Singapore.

By comparison, Cuba, with a population of 7 million, has a prevalence rate of 0.54 per 1000, (3) while Papua and New Guinea, population 2 million, has a prevalence rate of 7.7 per 1000. (1)

TOTAL REGISTRATIONS FROM 1962 TILL 1967

Leprosy is a notifiable disease in Singapore. All our cases are reported to the Senior Health Officer, Quarantine and Epidemiology, Ministry of Health.

Case-finding is limited in extent owing to the small staff available to carry out this duty. Out of the grand total of 1,358 cases registered at the Government Skin Clinic during the period under study, over 1000 were patients referred to us mainly from Middle Road Hospital (269), Outram Road General Hospital (207), General Practitioners (178) and Outpatient Dispensaries (135).

There were 510 infectious and 848 non-infectious cases altogether.

Fig. 2 shows a falling off in the annual totals of infectious types. This may account for a corresponding drop in the annual totals of all cases registered, seen in Fig. 1. In Fig. 3, it will be seen that there is no significant trend in the incidence of non-infectious cases.

Hydnocarpus Oil by injection was the main form of treatment until 1947. Sulphetrone by mouth and injection was begun in 1948. Dapsone by mouth and injection started in 1950.

CLASSIFICATION OF CASES

At the first International Round Table Conference held in Manila in 1931, leprologists defined active cases as "those which exhibit positive bacteriological findings in skin or mucous membrane, determined by usual methods;

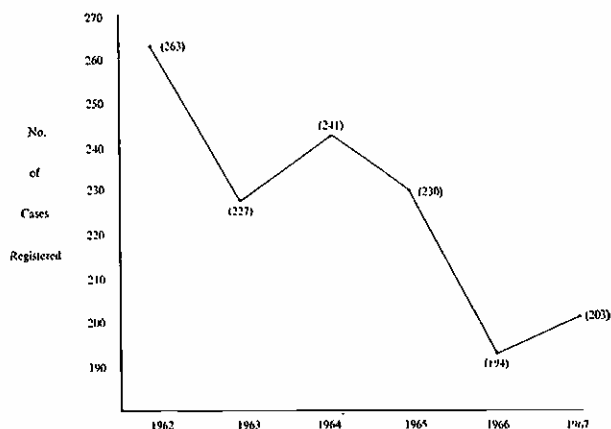


Fig. 1. Showing annual total registrations.

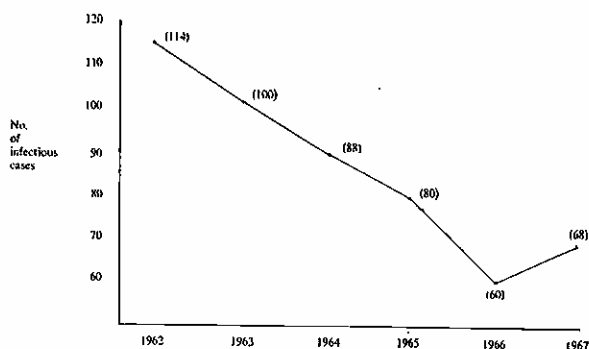


Fig. 2. Showing annual infectious cases.

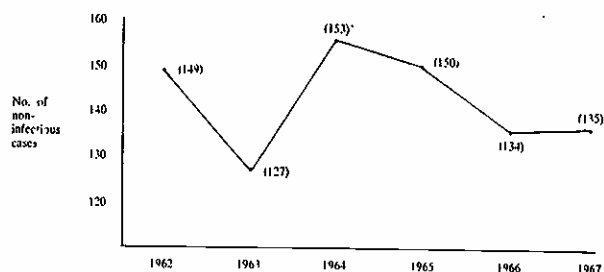


Fig. 3. Showing annual non-infectious cases.

the presence of raised erythematous lesions; increase or diminution of lesions in size or number; tenderness of nerves, with or without thickening.”

Table I shows the breakdown of the 510 positive cases registered. Table II shows the breakdown of the 848 negative cases registered.

A simplified classification is used here.

Lepromatous	287
Borderline/Dimorphous	77
Reactional Tuberculoid	146
TOTAL	510

TABLE II

Tuberculoid	460
Neural	192
Indeterminate	196
TOTAL	848

‘STATED’ DURATION OF ILLNESS (MAY 1963-1967)

The onset of this disease can be insidious in nature. The small area of anaesthetic skin may be unnoticed or ignored. The presence and subsequent disappearance of an erythematous plaque, which is neither tender nor itchy, will be forgotten. Some patients may suppress the actual date of onset of lesions from a sense of shame or guilt.

Table III shows the data collected at the time of registration.

TABLE III

Under 1 year	493
1—5 years	309
6—10 years	95
Over 10 years	96

INCUBATION PERIOD AND AGE OF ONSET

The latent or incubation period of leprosy is generally accepted to be 3-5 years. But evidence is accumulating to show that this interval can be as long as 40 years. Tables IV and V show a breakdown of positive and negative cases into their respective age-groups. It is to be remembered that these figures are based on the ages at the time of examination.

TABLE IV

Under 15 years	69
16—35 years	226
36—50 years	110
Above 50 years	105
TOTAL	510

TABLE V

Age-Group of Negative Cases	
Under 15 years	81
16—35 years	331
36—50 years	239
Above 50 years	197
TOTAL	848

A preponderance of cases occurs in the 16-35 years age-group in both the positive and negative patients. It may be profitable to concentrate our case-finding to young people between the ages of 10-20 years.

INCIDENCE ACCORDING TO RACE

Dr. Muir in 1927 investigated three castes of Hindus cohabiting in the provinces of Bihar and Orissa. These three castes did not interbreed and could be regarded as separate populations sharing the same climatic and geographical conditions. The Bowris, who had a frequency of leprosy of 145 per 100,000, had lower standards of living and of hygiene than the Brahmins, who only suffered an incidence of 28 per 100,000. This might appear to support the view that the standard of living and hygiene are of great importance in leprosy, but the Sonthals who are more aboriginal than the Bowris, also have a far lower rate of 29 per 100,000.

Dr. Spickett (5) says "the evidence that genetic mechanisms are of importance in leprosy is very great, and it is clear that these mechanisms are effective in many different ways. At the present time, the amount of precise and rigorously assessed knowledge on the subject is very small."

Table VI shows the incidence in Singapore among the three main racial groups for the years 1962-1967. The proneness to leprosy in the Indian and Pakistani community supports the statement made by Dr. Spickett.

TABLE VI

Indians, Pakistanis	1:4600
Chinese	1:8100
Malays	1:23,300
Others	1:31,700

CLASSIFICATION ACCORDING TO RACE

The Chinese form nearly three-quarters of the total population of Singapore. Hence the great preponderance of Chinese patients. The density of population, 8000 per sq. mile, falls heaviest upon the Chinese, and congestion must be blamed for the spread of the disease.

Table VII shows the types of leprosy suffered by the various races in Singapore.

TABLE VII

	Chinese	Indian	Malay	Others
Lepromatous	243	24	17	3
Borderline	61	11	5	—
Tuberculoid	465	105	33	3
Neural	144	35	9	4
Indeterminate	153	29	11	3

DISCUSSION

Statistics on leprosy in any country can be at best only an estimate of the actual occurrence of the disease, since it is not possible to examine every person in the country. Besides, owing to the absence of a reliable immunological test, many sub-clinical cases will not be detected at the medical examination.

It therefore depends upon the public to come early for investigation of any suspected lesion. Unfortunately, as the Stated Duration table shows, this is not being done. Social ostracism of the leprosy sufferer is all too common among our people. The fear of losing jobs and friends is a definite deterrent to early diagnosis and treatment.

Enlightened education of doctor and layman is urgently necessary in order to eradicate the prejudices and superstitions handed down from the mists of antiquity.

SUMMARY

This article is an attempt to provide baseline figures for further comparative studies on leprosy in Singapore, calculated on the routine registrations at the Government Skin Clinic, for the years 1962-1967.

WHO Leprosy Consultant, Dr. J.N. Rodriguez, (4) has this to say about the management of leprosy in Singapore: "a study of the organisation and operation of Trafalgar Home indicates that the patients therein receive adequate

medical, nursing and general care, and most of them enjoy more allowances and social welfare benefits than any other group I have come across before."

ACKNOWLEDGEMENTS

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