THE FIGHT AGAINST LEPROSY IN THREE COUNTRIES IN ASIA[1,2]

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Among the diseases afflicting the overpopulated countries of Asia leprosy has remained the worst of all. An infectious disease, whose contagious character is greater than is often claimed, it threatens advance in endemic areas more rapidly than the means to combat it. Governments and the World Health Organization have joined in the campaign against it, but the results, depending, as they do, on numerous political, economic and technical factors, vary greatly from country to country.

We have therefore thought it of interest to study the problem in three Asian countries, South Vietnam, South Korea, and Burma, where the fight against leprosy is currently in different stages and clashes with existing conditions, or is waged on the basis of different conceptions of the disease. Comparison of the facts we have learned may be instructive, bringing into focus the obstacles that may interfere with plans devised by governments and their technical advisers.

SOUTH VIETNAM

In South Vietnam, as in other Asian countries, leprosy has been known since remote ages. Although responsible public health authorities have been concerned with the problem since the beginning of the present century, they did not have an exact picture until recent years of the extent, distribution and characteristics of this endemic disease. In 1959 and 1960 Dr. P. Harter, an expert leprologist, was assigned to the Health Ministry of South Vietnam by the French Mission on Economic and Technical Aid to make the first survey of the epidemiology of the disease. His research was carried out in 16 coastal and southern provinces, inhabited chiefly by native Vietnamese, and in three highland, mountainous provinces inhabited by minorities of Indonesian origin.

Dr. Harter found that "in these two geographically and ethnically different regions, leprosy presents different and contrasting appearances." He inferred from his survey that "Vietnam is apparently the meeting place of two original Asian sources of infection, the Indian and the Chinese."

The following data are extracted from his report:

Highland area.—In a survey of 8,850 natives, in 58 villages, chosen at random, some form of leprosy was observed in 498 persons, representing a prevalence of 5.9 per cent. Tuberculoid cases predominated. There were 415 cases of this type (83.8 per cent of total), 37 lepromatous (7.4

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per cent), 30 undetermined (6.0 per cent), 1 borderline case (0.2 per cent), and 15 cases diagnosed as purely neural (3.0 per cent).

Coastal and southern provinces.—Figures based on the number of in- and outpatients pointed out to Dr. Harter in various towns and secondary localities indicated an approximate prevalence of leprosy of 3 to 4 per cent, of which 45 per cent were tuberculoid cases and 42.3 per cent lepromatous.

There was reason to believe that the information obtained in the coastal region and southern lowlands was less reliable than that collected by systematic examinations in the highlands. Dr. Harter's conclusions, which recognized possible inaccuracies, indicated that the number of leprosy patients in South Vietnam was at least 50,000 in a population of 14 million.

Legislation on leprosy.—Although continued effort has been made during the past 20 years to humanize the regulations concerning leprosy patients, which call for compulsory isolation, no change has been made in the strict segregation laws passed in 1909 and 1919. These remain in effect. Projects for new legislation, however, more nearly adapted to modern concepts, and based on public health practice, are under consideration. Leprosy was the subject of an important seminar sponsored by the Saigon government in February 1963, in which current practices were reconsidered with a view to change.

Antileprosy organizations in Vietnam.—Until now, efforts to control leprosy in Vietnam, while numerous, have been scattered and uncoordinated. At present, leprosy patients are cared for in government hospitals and leprosaria. Approximately a thousand are treated in hospitals in Saigon and in other towns and the provinces. Approximately 500 beds are available at the Cho-Quan Hospital in Saigon. About 3,000 patients are interned in leprosaria.

The leprosaria include the Qui-Hoa leprosarium, with attached infirmary, school, kindergarten, work-shops, fishing port, vegetable gardens, and other facilities, and other leprosaria or antileprosy centers in the provinces, housing from 100 to 370 patients and furnishing outpatient services to ambulatory patients on a large scale. It is estimated that approximately 4,000 patients are given treatment in outpatient clinics.

"Vietnam Association of the Friends of Lepers."—This organization, a private one, founded in 1963, is designed to improve the lot of patients and their families by provision of moral and material aid. Its funds are modest; nevertheless expansion of effort is projected, with the development, in association with the government and foreign agencies, of a center for rehabilitation of as many as a thousand patients with arrested disease.

Plans for a national campaign against leprosy.—Aware of the seriousness of the leprosy program, the Health Ministry is planning an ambitious program against the disease. This will include (a) modernization of legislation, (b) a central leprosy department, devoted to research,

planning, coordination and control, (c) systematic case-finding, (d) mass ambulatory treatment, (e) training, and (f) health education. Two field centers, one urban and one rural, are planned. Help is expected from international (including WHO and UNICEF) as well as nongovernmental organizations. Since military operations are current in much of the area under consideration, it is expected that military medical personnel will be in charge of public health in regions of combat, preparing the way for a campaign of eradication of the disease when peace has returned.

SOUTH KOREA

Leprosy has been known in South Korea as far back as the 14th century. The first leprosaria were founded by American missionaries in the southern provinces in 1909 and 1913. In 1919 the Japanese administration founded a third institution in Sorokdo, which later became one of the world's largest leprosaria, with 6,000 patients at one time and some 4,900 today. In 1955, with the independence achieved after World War II, the number of leprosaria and leprosy settlements increased. In 1960, according to J. Lew, 24,337 patients were under observation in 5 national hospitals and 56 settlements. During the Japanese occupation strict segregation was practiced and patients who were discovered were isolated by compulsion. The laws have been continued, but enforcement has steadily been made less rigorous. In 1963 compulsory isolation was abolished.

Epidemiology.—No overall survey permitting a statistically valid estimate of the number of leprosy patients in the country, with its 23 million inhabitants, has been made. The Japanese, basing their estimate on the number of compulsorily isolated patients, estimated the number at 13,770. In 1948 J. Lew made an estimate of 40,000, but in 1960 after more thorough study he estimated the number at 100,000. Lew's data indicate that the gravity of the problem decreases from south to north. In 1963 and 1964 a survey by two mobile units enabled a more accurate sampling of the population than has been possible heretofore; among 63,026 inhabitants of the region surveyed, 273 cases of leprosy were found, i.e., 4.5 per 1,000 of the persons examined. The figure does not hold for the country as a whole, however, as the region surveyed was one of recognized high endemic incidence.

Certain other data obtained were notable. At the Chilkok Hospital 23 per cent of patients were under 14 and 50 per cent under 19 years of age. A mobile unit survey in 1964, which reached 1,552 affected persons living at home, showed 14.4 per cent in the 0-14 year age group and a total of 33.7 per cent 19 years old or younger. Lew's figures for 1960, based on 2,532 patients, indicated that 63 per cent were 19 years old or younger. Among 27,689 known patients Lew found more than half (53.1 per cent) to be of the lepromatous type. Somewhat similar results came from the mobile unit survey: 45 per cent of 1,532 patients had lepromatous disease, and 44.5 per cent the tuberculoid type.

The figures in general were believed to indicate a relatively high

prevalence of the disease early in life, and a slight preponderance of the lepromatous type. The number of hospitalized patients with skin biopsies positive for leprosy bacilli averaged about 50 per cent, indicating a substantial risk of contagion. It was believed that school surveys might uncover many cases. It was clear that further surveys are needed to indicate the magnitude of the problem.

Leprosy service organizations.—The Ministry of Health and Social Affairs includes a central section for leprosy, in a subdivision of the department for control of transmissible chronic diseases, including tuberculosis, leprosy and venereal diseases, which is itself under the control of the Department of Health. There is also a "Korean Leprosy Association," which has its headquarters at the Ministry. This works closely with the Ministry and plays an important part in leprosy control. In the provinces leprosy control is under the supervision of the Provincial Health Department and local branches of the Korean Leprosy Association.

Institutions devoted to treatment and control of leprosy.—In 1964 there were five large national leprosaria housing 8,600 patients; three institutes for the care of deformities, in which approximately 1,000 patients were under treatment; 10 "resettlement areas" in which 1,120 patients resided; 39 settlement villages, with 6,757 inhabitants, and 16 private colonies, with 1,485 inhabitants. The total number of patients in these various institutions added up to 18,962.

Twenty general hospitals house leprosy patients in their dermatology departments. Many of these hospitals have outpatient services. Approximately a dozen specialized dispensaries give ambulatory treatment and engage in research in the field of case-finding. Three official mobile units were in operation at the time of writing, with a fourth in prospect. In addition, the International Committee of the Order of Malta and the British Mission to Lepers each operated a mobile unit devoted to case-finding and ambulatory treatment in various southern regions of the country.

A number of other foreign missions and associations contribute liberally to the fight against leprosy. Foreign missions and private associations have provided substantially for medical staffs. The American Leprosy Missions and the International Committee of the Order of Malta have organized three-month courses for training paramedical leprosy workers.

Since 1961, thanks to measures taken by the Ministry of Health to improve health services in rural zones, a thousand physicians have been employed as directors or officers for rural health services, yielding an average of two physicians per township. Practical courses on leprosy have been given to 2,000 physicians.

National budget for leprosy.—The national budget for leprosy has increased from 118 million won in 1960 to 170 million won (U.S. $667,000) in 1964. Up to the time of writing, four-fifths of all sums appropriated for leprosy services have been absorbed by patients hospitalized

in national leprosaria, leaving a relatively small remainder for 50,000-70,000 other patients in the rest of the country. This paradoxical gap is being taken into account in the Government's formulation of anti-leprosy policies for the future.

Rehabilitation of interned leprosy patients.—(a)Resettlement project: In order to avoid unnecessary expense, in 1961 the South Korean government ordered that all bacteriologically negative leprosy patients with arrested disease and capable of remunerative work be discharged from leprosy institutions. Since a large proportion of these, however, were unskilled, and likely to become public charges, unless special provision was made, it was decided to create "resettlement areas" where control could be exercised. It was believed that within a period of three years, many of the resettled persons could achieve independence and the capacity to look after their own needs. Out of 6,043 bacteriologically negative patients, it appeared that about 2,500 could be discharged from current medical care and resettled; in the case of the others resettlement proved impractical because of infirmity or age. It is hoped that in the not distant future one of the five national leprosaria can be closed. It is estimated that the cost of resettlement of a thousand leprosy patients will be 34 million won (U.S. $130,000).

(b) Settlement project: Side by side with this project the Government and Korean Leprosy Association have jointly undertaken a program of social settlement for recovered leprosy patients in 55 nongovernment colonies. During 1962 and 1963, in accordance with this plan, 39 settlement villages have been established, reserved for noninfectious former patients with arrested disease, who can lead a nearly normal social life. In 1962, 4,644, and, in 1963, 2,113 former patients took advantage of these settlement provisions. It was expected that in 1964 the remaining 16 colonies, with 1,313 former patients, would become resettlement villages. A cost of 6000 won per capita, or 48,420,000 won for a total of 8,070 settled persons, is anticipated.

In this connection it is noted that of the estimated 100,000 persons with leprosy residing in South Korea only a third are known to public health authorities. It is expected that further emphasis in the immediate future will be placed on infectious cases. This policy is to be taken into account as a recognized difficulty in the "desegregation" program planned.

BURMA

Leprosy is considered as health problem No. 1 in Burma. It is estimated that, in the population of 22 million, 200,000 to 250,000 persons are afflicted with this disease. With the establishment of a specific anti-leprosy campaign the number of actually diagnosed cases increased from the low figure of 4,600 in 1952 to 121,000 in February 1964. The budget for leprosy control was 2,500,000 kyats (U.S. $526,000) in 1964. Encouraged by results as noted in the following paragraphs, and in full realization of the magnitude of the work still to be done, the gov-

ernment has projected a comprehensive program covering the 8 provinces and 4 states of Burma.

Organized services and staff.—A central department for leprosy was created in 1953 and placed under the direction of an assistant health director of the Health Department of the Ministry, whose duty it is to supervise (a) field services, and (b) hospitals, outpatient clinics and other services for leprosy patients.

(a) Field services: At the time of writing 13 zones of operation, designated as pilot areas, cover a population of 7 million inhabitants. In their operation the chief of the control leprosy department is assisted by WHO personnel. The staffs for the pilot areas include leprologists, specialist physicians, laboratory personnel, and administrative and maintenance personnel in large number, as well as a substantial number of "junior leprosy workers" who do routine work under the supervision of inspectors and their assistants. A number of villages are entrusted to their care. From 250-400 patients are handled by each junior leprosy worker. The total personnel engaged in the field projects numbers about 600.

(b) Hospitals and institutions for leprosy patients: Three large hospital departments are available for treatment of outpatients, control of contacts and case-finding. Five to six thousand persons are examined each month, and, on the average, 250 new cases are discovered. Seven leprosaria are in operation, one of them governmental, with 433 patients at the time of writing, and six of them founded by missions. In addition, there are 14 small colonies created by private associations and four pavilions for destitute and crippled leprosy patients. In February 1964, 3,621 patients were under care in these institutions. The government and local municipalities grant subsidies to the nongovernmental agencies and provide food supplements. UNICEF furnishes drugs.

Training of medical and auxiliary staffs.—Specialized 1-3 month courses of training are given to physicians in Rangoon. Inspectors follow a 6-month course. Junior Leprosy Workers take a theoretic and practical 3-month course in Rangoon or Mandalay, followed by 3 months of supervised field experience. One month refresher courses have been given in 1963 and 1964 for physicians and auxiliary workers.

Leprosy services in pilot areas.—These include routine work in institutions and agencies and mass case-finding programs. (a) Routine work: This is on a large scale. Ninety-seven per cent of known leprosy patients receive ambulatory treatment (77 per cent in their own villages and 20 per cent in outpatient clinics). During February 1964, 109,254 patients were treated on an outpatient basis. Of the 121,000 known affected persons, 5,869 were considered arrested cases and 1,371 not in need of further treatment. Seven per cent of the patients were lost or dead.

(b) Mass case-finding: A case-finding program covering a million inhabitants in three districts has been under way for three years.

From 71 to 98 per cent of the population in different regions have become subject to this control. The discovery of new cases has been 50 per cent higher than detection by previous routine procedures. Systematic case-finding has been carried out in schools. Among 350,798 children examined, 9,375 cases of leprosy (26.7 per 1,000) have been found. The children are kept in school and treated by specific chemotherapy with sulfamide tablets. Results thus far have been excellent. The local authorities relate the relatively high number of infected children to the prevalence of the lepromatous form of the disease in Burma (known cases are recorded as 35.2 per cent lepromatous, 42.4 per cent tuberculoid, and 22.3 per cent undetermined).

CONCLUSIONS

The importance of the leprosy problem in the three Asian countries surveyed can be appreciated only through prolonged factual experience. The effectiveness of antileprosy campaigns depends upon the geographic distribution of the disease and the speed with which the campaigns are conducted. The first objective should be elimination of the largest possible number of infectious cases. With all due recognition of the need for aid in advanced and irretrievable cases and crippled patients, it should not be forgotten that through early treatment many patients can recover from the disease and be protected from deformities.

In countries in which the disease is endemic, and financial resources are limited, ambulatory treatment, which is not expensive, should be generalized. It permits mass therapeutics.

It must be recognized that in some countries a clash against certain obstacles is inevitable. Account must be taken of numerous regional, political, social, technical, psychologic, and religious factors. Responsible authorities must have stamina, patience, imagination, firmness, and also adaptability, in order to overcome prejudices and blocks of all kinds that stand in the way of progress.

The measures to be applied cannot always be determined beforehand and definitely, but success is strictly dependent on the application of known rules and principles that cannot safely be overlooked.

RESUMEN

La importancia del problema de la lepra en tres paises de Asia investigados, solamente puede apreciarse a traves de una prolongada experiencia actual. La efectividad de la campaña antileprosa depende de la distribución geográfica de la enfermedad y la velocidad conque es conducida la campaña. El primer objetivo debe ser la eliminación del mayor número posible de casos infecciosos. Con el debido reconocimiento de la necesidad de la ayuda para los casos mas avanzados e irreparables y pacientes inválidos, no debe ser olvidado de que a través del tratamiento temprano muchos pacientes pueden recuperarse de la enfermedad y ser protegidos de las deformidades.

En los paises en los cuales la enfermedad es endémica, y los recursos financieros son limitados, el tratamiento ambulatorio, el cual no es costoso, debe ser generalizado. Ello permite la terapeutica en masa.

Debe ser reconicido de que en algunos paises es inevitable un choque contra ciertos

obstáculos. Deben tomarse en cuenta los numerosos factores regionales, politicos, sociales, técnicos, psicológicos y religiosos. Las autoridades responsables deben tener valor, paciencia, imaginación, firmeza, y también adaptabilidad, con el objeto de superar prejuicios y bloqueos de todas clases que existen en el camino del progreso.

Las medidas a ser aplicadas no pueden siempre ser determinados de antemano y definitivamente, pero el éxito depende estrictamente de la applicación de reglas conocidas y principios que no pueden ser pasados por alto a salvo.

RÉSUMÉ

L'importance du probleme de la lèpre dans trois pays d'Asie dans lesquels l'enquête a été menée ne peut être appreciée que par une connaissance prolongée des faits. L'efficacité des campagnes contre la lèpre dépend de la distribution géographique de la maladie et de la rapidité avec laquelle les campagnes sont menées. Le premier objectif devrait être l'elimination du plus grand nombre possible de cas infectieux. Tout en reconnaissant, ainsi qu'ilse doit, la necessité de venir en aide aux cas avancés et irrécuperables ainsi aux malades invalides, on ne devrait pas oublier que c'est par un traitement précoce que beaucoup de malades peuvent guérir de la maladie et échapper aux mutilations.

Dans les pays dans lesquels la maladie est endémique et les ressources limitées, le traitement ambulatoire, qui est peu coûteux, devrait être généralisé. Grâce a lui, il est possible de mener des campagnes de masses.

On doit admettre que dans certain pays ce mode d'action se heurte à des obstacles inévitables. Il faut tenir compte de nombreuses données régionales, politiques, sociales, techniques, psychologiques et religieuses. Les autorités responsables doivent faire preuve d'allant, de patience, d'imagination, de fermeté, et aussi de souplesse, afin de surmonter les prejugés et obstacles de toutes espèces qui barrent la route au progrès.

Les mesures qui doivent être appliquées ne peuvent toujours être determinées à l'avance et de manière intangible, mais le succès neanmois dépend de l'application de règles connues et de principes qui ne peuvent être negligé.