

EPIDEMIOLOGY AND CONTROL SYMPOSIUM

17 NOVEMBER, 1958

9.15 A.M.

Chairman: DR. J. A. DOULL*Rapporteur:* DR. R. V. WARDEKAR

DR. DOULL made a statement on the subject, presenting the unanimous report of the Technical Committee of Epidemiology and Control.

Important points were given emphasis:

1. *Leprosy surveys:* statistically designed sampling surveys are advised. Even limited surveys are worth while, limited in time or area or to school children.
2. *The frequency of evolutionary changes in leprosy* is urgent for study. A modified life table procedure should be used.
3. *Relative infectiousness of lepromatous and tuberculoid types* should be studied to solve the epidemiological enigma where tuberculoid cases seem to carry on the endemic.
4. *Evaluation of effectiveness of clinic treatment* is also urgent for study. There are various indexes which could be built up.
5. *Controlled studies of effect of sulphones* on nerve damage and on tuberculoid type in general.
6. *Subclinical infection* is a subject requiring study.
7. *Methods of transmission.* Insects are still not culpable.
8. *Resistance.* Mitsuda positivity in relation to resistance needs long-term field studies: also natural reactivity to lepromin.
9. *BCG vaccination in resistance to leprosy:* long-term studies are in progress but are very difficult. Secondary factors can be studied.
10. *Possible relation of diet to leprosy* has never been thoroughly explored, and should be done in suitable countries (nutritionists should be co-opted).

In Control

- (1) *Educational*
- (2) *Medical*
- (3) *Social*
- (4) *Legal*

Early diagnosis and treatment are essential to control. The patient and his family should be given full explanation of practical matters relating to the disease. Contacts should be sought for and given explanation and reassurance. There are many other practical points for patients and contacts. The public should also receive education and explanation.

It is more important to reduce infectiousness in many cases than to eliminate infection in a few: this from an epidemiological point of view.

The careful search for contacts is of major importance.

Social assistance to leprosy patients and their families is an inescapable duty.

Legal restrictions on patients have little value in the control of leprosy, but reporting the disease to the health authorities is reasonable. Discretionary authority should be given to the health authorities to impose isolation in troublesome cases.

Dr. Doull also mentioned the need for close study of relapses and gathering of statistics on it, also that there was no reason why leprosy patients should not be admitted to general hospitals if necessary. Preventoria should be converted into general child-care institutions. BCG should be used for child contacts.

DR. R. V. WARDEKAR (India):

Success of Case Detection Campaign in Sulphone Therapy

He reported field work in India in the last seven years.

He reported the important part played by 'para-medical' workers in securing the growth of the clinics and the growth of care of the patients. They work under medical supervision. Most patients take the treatment and results are excellent. The cases are detected in early stages of the disease, and this early detection has a marked effect on the prevention of deformities, as well as on a high arrest rate for the disease. The clinical clearing of lesions is surprisingly high. Over six years, only 23% of bacilliferous cases remained positive.

Widespread case-detection campaigns are the only solution for poor countries, using para-medical workers who are specially trained. Each patient per year in a leprosarium costs \$100.00: the out-patient costs \$9.

DR. E. MONTESTRUC (Martinique):

BCG in the Prophylaxis of Leprosy

There are only 300,000 inhabitants: the leprosy rate is 7 to 8 per thousand. We have given BCG to the newborn children of leprosy patients, and can now give the results of the experience of 22 years. None of these children has shown any sign of the disease, whereas 10 children living in leprosaria have developed the disease. We have now extended the BCG vaccination to all children 0-15 years of age. Also in a large special group of children, controlled and uncontrolled, we had 2 cases and 54 cases respectively. We think the effect of BCG in prophylaxis is very clear and justified for wide and general use. A large number of children are sensitive to leprosy and tuberculosis. A positive Montoux in many goes with a lepromin negative: they can be given BCG with advantage, after a clinical and radiological examination for tuberculosis. Why should we not try to secure both

tuberculosis and leprosy prevention in all children? A prophylactic sulphone course is of some use as well, against leprosy.

DR. O. DINIZ (Brazil):

The new programme of leprosy control in Brazil

In Brazil leprosy is a widespread problem with 5,000 new patients annually, and a total of 100,000 patients. For 25 years we compulsorily segregated infectious cases, and 36 leprosaria were built, containing 25,000 patients. There are 31 preventoria, with 5,000 children. There were less than 100 dispensaries, most of them in large cities. The results were bad: there was no decrease in the endemic. Lepromatous type was over 60%. Since 1956 we abolished compulsory segregation and opened up the campaign to take in out-patient work. We formed 'task forces' in each area, using specialist leprologists and general doctors and public health workers: there are even general practitioners. There are now 102 such task forces for the total population of 17 millions. They now have over 10,000 patients. More and more cases have been discovered, reaching 6,600 new and often early cases, and an estimated 60% of the patients have been reached. The campaign has an educative value and we hope it will be successful.

(Intermission for 15 minutes)

Epidemiology and Control

Discussion

DR. N. D. FRASER (Hong Kong): "Dr. Doull's paper was weakest on the contribution of the community and governments and public health authorities. Voluntary agents and the patients also have a part to play. All must work together."

DR. GAY PRIETO (W.H.O.): "I congratulate Dr. Doull on his complete report. Will he add 3 points: (1) Approach to a complete survey is not impossible, using campaigns for other disease to provide part of the information needed. (2) Change slightly the remarks on sampling to include the recommendation to include pilot areas. (3) Chemoprophylaxis is effective and should be added, e.g., Laviron's work, Figuredo in Bombay, Ramon Miquel in Thailand. BCG prophylaxis is still in doubt. In Spanish Guinea there is high prevalence of leprosy along with BCG positivity. The transmission of leprosy may well be by the borderline cases."

DR. K. YANAGISAWA (Japan): "BCG is effective in preventing murine leprosy. We studied tuberculin-positive and negative children who had received BCG. The results are favourable to BCG in both cases. Lepromatous contacts were found to be more dangerous to the children: in these the tuberculin-negatives were more susceptible. The length of contact is important."

DR. CHATTERJEE (India): "Outdoor treatment centres and surveys were started with us by Dr. Muir in 1934. We have continued and amplified these. In 1935 we found 4.9 per thousand in Bankura on a sample survey. Sample surveys are practicable and valuable. Prophylaxis by sulphone is more doubtful: it does not enter the nerves. In treatment the proper dose must be found for tuberculoid cases. We did BCG vaccination in certain areas from ages 2 months to 15 years. To 2,329 children up to 15 years of age we gave BCG in 1953 and in 1958 we found 0.7% of leprosy incidence; it was 17% in unvaccinated children. In another group it was 2.4% against 52.4%: this group was of lepromin-negative children."

DR. CONVIT (Venezuela): "Referring to Dr. Montestruc's work about BCG vaccination, I would like to say a word about our experiences in this particular field."

"We have done intradermal BCG vaccination in a leprosy focus in our country since 1950. We divided the population in groups, one was vaccinated with BCG and the other remained as control. We published the first five years of experience and found on this occasion 26 patients in the group not vaccinated, approximately 45%, and only 3 patients in the vaccinated group, 5.6%.

"A few months ago one of my collaborators, Dr. Alborno, and I reviewed this study which has now almost eight years of experience and found that the results confirmed the previous study. In relation to the type of leprosy there were no cases of the lepromatous type in the vaccinated; in contrast, we found several cases of this type in the non-vaccinated group."

DR. LANDSBOROUGH (Formosa): "I have been told that compulsory segregation is still in force in Japan, and that amongst male leprosy patients sterilization is made compulsory. I would like to ask our kind hosts whether these two points are true, and whether they think such measures are still necessary in this country."

DR. ISHIMARU: "There has been no compulsory enforcement in recent years. Vasectomy is not enforced by law but is advised for those about to get married."

DR. RAMON MIQUEL (Thailand) referred to the limited but most valuable experience and results achieved in the leprosy village, established near the leprosy control project headquarters at Khon Kaen pilot area, Thailand; this represented an additional contribution to the Lavirus preliminary experience in Bamako on preventive sulphone applied to child contacts as a most safe method of prevention.

None of the 184 children contacts who received preventive sulphone in Ban Noi Leprosy village has shown any symptoms of leprosy so far during 3 years of close follow-up and observation.

Ninety-six children received prophylactic sulphone treatment during 1956 and 88 during 1957.

Up to about 750 children contacts are also receiving domiciliary prophylactic treatment in the southern zone of the pilot area but the follow-up and observations have not been so close and sufficient to present valuable data.

The administration method for prophylactic treatment to child contacts applied in our pilot project has been the long-acting injectable 'Lavirus one', i.e., every fortnight intramuscular injection of DDS suspension in chaulmoogra ethyl esters.

Our dosage is as follows: For children from 2-7 years: 1/2 cc of the DDS suspension, i.e., 125 mg every fortnight. For children from 7-15 years: 1 cc, i.e., 250 mg DDS suspension every fortnight.

The length of prophylactic treatment is as follows: 6 months for child contacts of non-lepromatous patients. 12 months for child contacts of lepromatous patients.

DR. RICHEL: "Dr. Doull laid stress on the role of fixed teams. In French Africa (600,000 patients to be dealt with) and in underdeveloped countries mass campaigns are necessary. We brought 120,000 under treatment and will soon reach 50 or 60% of arrested cases. In French West Africa we also brought large numbers under treatment by mobile teams: i.e., 127,000 patients. We use 100 vehicles, many supplied by UNICEF, and the treatment is injectable sulphone. There are also 500 bicycle circuits for distribution of DDS tablets. The distance covered by mobile teams and bicycles is enormous."

DR. W. FROELICH (Taiwan) described survey work in Taiwan. Surveys for general diseases included leprosy. The cost of a combined survey is cheaper in proportion and yields higher populations.

DR. AZULAY (Brazil) congratulated Dr. Doull on the report. Reference Dr. Wardekar's comments, he says his sort of campaign would suit the richer countries too. He had suggested BCG in prophylaxis in the Havana Congress but it was accepted in the Madrid Congress. "I agree with Dr. Yanagisawa's paper. I think there are basic reasons for continuing with BCG as a prophylactic. It must be recommended."

DR. BACCAREDA-BOY (Italy): "In Italy tuberculosis is widespread, and the lepromatous type predominates in leprosy. It is because there is plenty of time for them to become lepromatous. We used BCG prophylactically in contacts and secured complete protection. Sulphone prophylaxis we think is doubtful."

DR. BLANC: "Mass campaigns alone are not enough. They are still pretty costly. Integration in public health services should not be forgotten. Mass campaigns should also include survey and treatment for other diseases, and in Indonesia we obtained good results. Also our ordinary dispensaries treat leprosy."

DR. BECHELLI (Brazil) praised Dr. Doull's report which he considered is very balanced. Re 'Index of Cure', we should not use the word 'cure', but 'arrest'.

"Re prophylactic treatment, why not use repeated lepromin tests? In Montestruc's paper, were the BCG group and the control group comparable? To Azulay I say that not all data are in favour of BCG. I think we have to wait longer, and be prudent about BCG."

(Session adjourned 12.00 noon)

EPIDEMIOLOGY AND CONTROL

17 NOVEMBER, 1958

2 P.M.

Chairman: DR. PAUL BRAND

Rapporteur: DR. J. GARROD

DR. A. SOBUE (Japan):

Epidemiological Study of Leprosy in Aichi Prefecture

In the 50 years up to 1957, we recorded 1,946 leprosy cases in Aichi Prefecture, a rate of 0.2 to 2.4 per 100,000 population. The stress of war and poverty brought the rate to 1.4–2.0 per 100,000 in the first half of this 50 year period. After 1952 it dropped to less than 0.5.

There were 59% lepromatous type, 17% macular, and 33% neural, and latterly the lepromatous type tends to become rarer. The age of onset was 25 in the first 4 years, but 40 between 1951 and 1955. Males are 260/100 to females. Patients hospitalised were 77% but the average wait before admission was 7 years. However the author thinks that patients unregistered are twice as many as those on the registers, and there is no cause for satisfaction. The Prefecture contains over 3,700,000 population, and a density of 774 per sq. kilom. It is said to have the heaviest incidence of leprosy. Over 29 new cases are found every year. Enforced BCG vaccination was introduced by a law of 1949.

DR. J. LEW AND DR. CHUNG (Korea):

Epidemiological Studies of Leprosy in Korea

Surveys were made 1947–1957. The present-day estimate of leprosy in Korea is not less than 100,000. There are now 8 leprosaria with about 20,000 patients in them. Dr. Cochrane in 1955 estimated 150,000. Most patients come from the four southern provinces, but the endemic is spreading northwards. Lepromatous type is about 30%; males are double the number of females; the age of onset is under 35 years in 55% of all cases. Contact has been traced with other family leprosy members in 40%. 60% cannot remember contact.

The earliest clinical sign is some skin patch with anaesthesia. In most cases almost 3 years were wasted before diagnosis: 70% of cases can work.

DR. BARBA RUBIO AND DR. G. PEREZ SUAREZ (Mexico):

The Anti-leprosy campaign in Mexico

The Dermatological Institute in Guadalajara is aided by private initiative (the Patronate). In Mexico we have opened up and modernised the campaign. We use 'ambulatory' and 'dermatology' and other general terms. We reject coercion and respect individual human liberty; nor is special legislation needed. Leprosaria should be called 'dermatological centres' and the clinics 'dermatological clinics'.

Prevention should be based on early diagnosis and treatment in out-patients departments. Children separated from leprosy patients should be cared for in general institutions.

DR. NUNEZ ANDRADE (Mexico):

Leprosy in México in 1958

Mexico is a big country with 32 million inhabitants. On 13 July, 1955, we published an enlightened law on leprosy. A preliminary survey showed 1,460 cases of leprosy. In 1934, 2,449, and in 1958, 1,511 were found, bringing the total to 13,000. The various provinces have been assessed for incidence. The average is 41.29 per 100,000. The total estimated number of cases is over 60,000. The Pacific coast and the geographic centre of the country have the heaviest incidence. The State of Yucatan was infected from the east, from the Antilles. Most cases have bad economic conditions.

DR. M. H. GABRIEL (Queensland):

**A Note Proposing Abolition of Strict Segregation
for White Hansen's Disease Sufferers**

Leprosy incidence is low in Australia. The white and aboriginal races have a far different social status. There is a low case rate in white staffs of leprosaria and in the white population generally, and we are thinking of relaxing the segregation rules for whites. "This Congress favours relaxation of segregation where the case rate is low and living standards high" is placed before the Congress for its opinion.

DR. P. BONNIOL (Madagascar):

The Anti-leprosy Campaign in Madagascar

We are applying the principles of epidemiology and control as in Dr. Doull's report. Out-patient and domiciliary patient treatment is carried on, and we now treat over 23,000 patients. The rate is 1 per 200 population, with 45,000 patients altogether. Patients come readily for treatment. We have fixed dispensaries and 5 mobile teams, which also cover other diseases: we hope to have 12 groups by 1959. The patients are carefully recorded from the beginning. There are also nine leprosaria in Madagascar. We use BCG in child contacts and have recently begun a trial of DDSO, which seems to do well for those with many reactions. We use the corticosteroids in reaction. We think that DDSO is slightly better than DDS.

DR. A. SALAZAR LEITE (Portugal):

**Orientation for anti-leprosy campaign in
Portuguese overseas territories**

The initial leprosy campaign must be as complete as possible. A lot depends on roads and the existence of health centres. Angola has a moderate endemic, about 2,251 cases, and two types of campaign were chosen; (a) mobile units where roads are good and open all the year round; and (b) using more static health centres and dispensaries where the roads are bad and often closed in the rainy season. We use as the drug 'sulphone-retard'. Patients are found to attend well and ambulatory treatment is very popular. The mobile units are more effective than the static units.

Discussion

DR. MORGADO (Mozambique): "The work of Salazar Leite is interesting. I report on Mozambique, where we have a leprosy control service under the Public Health Department and dispensaries which cover leprosy treatment. There is a regional dispensary, 62 dispensaries and 123 treatment posts. Case-finding is done by mobile teams and by dispensary physicians. Good records are kept."

Paper

DR. E. AGRICOLA (Brazil):

Epidemiology and Control of Leprosy in Brazil

The control of leprosy in Brazil has proved a difficult task. The conclusion of previous Congresses have been studied and I recall them to you. In Brazil, in spite of a determined attack, we know we have not controlled the endemic. Now we propose to open up the campaign by integrating all doctors and health units, and by going to the patients as out-patients, using several mobile teams. We also retain the leprosaria and preventoria. The case-finding and registration of contacts should go together. The high lepromatous rate in Brazil is a difficult factor.

DR. A. R. PINTO (Portuguese Guinea):

Practical Application of Modern Methods to Leprosy Control

Modern therapy has given new hope of elimination. The drugs we have now are not the ideal, complete cure is slow and complications are fairly frequent. We found 25 per 1,000 incidence of leprosy in our country. We make surveys periodically, treatment is free and given in out-patient clinics. We use BCG. We have 9 physicians and hospital space for 1,500 patients. We have mobile teams and surveys for other diseases include a search for leprosy cases. Laboratory work is available at headquarters and in the field. Mobile teams use small Citroen cars or even scooters. The people co-operate actively and attendances are good. We bring the treatment to the home of the patient. We use DDS in injection and oral tablets. The latter are given once a week in the presence of the physician or nurse. This simple campaign has covered 80% of the total patients and we hope to break the back of the endemic. The cost is low.

Discussion

DR. P. J. CHANDY (India): "I feel there is an over-emphasis on taking treatment to the patient. There is a limit to mobile units and we should also have more institutions to keep up the standard of the general work. The age of onset in an endemic area drops upon any increase of the leprosy endemic."

DR. P. BRAND: "I agree that treatment should not be taken to the patient too much because outpatients walk too far even with deformities of the feet. This is from the surgeon's point of view."

Paper

DR. P. FASAL (U.S.A.):

A dermatologist's report on leprosy in California

In California only about 14 cases are found every year. The territorial origin of these cases is pretty wide-spread, but some counties show more. Most of the cases are of Mexican origin

although there were several in other races. All kinds of leprosy are seen. Many cases were first misdiagnosed and leprosy was missed. Some cases were wrongly given the diagnosis of leprosy.

Early diagnosis is most important for control of leprosy, from a dermatologist's point of view.

DR. M. ARIF (Indonesia):

The Leprosy Campaign in Indonesia

The population is 80 million: leprosy cases, 100,000. There are 182 out-patient clinics dealing with 20,000 patients and five leprosaria. The leprosy campaign is under the Ministry of Health. There is a laboratory and a research section and courses of lectures for doctors and students, nurses, propaganda officers, health officers, social services. There is a WHO consultant. There is a main central leprosarium of 450 beds which is being built: it will have all departments.

Rehabilitation is not forgotten, nor research in therapy and epidemiology. Preventive and curative surgery are available; and psychic and social rehabilitation are attended to. Treatment is by DDS by tablets or injections, and chaulmoogra. Segregation is arranged in a separate room or hut, or patients are admitted to the leprosarium or segregation villages. Social assistance is given. Children are removed at once after birth and cared for in other homes or orphanages or by social workers. Social rehabilitation is considered very important.

DR. G. L. FITE (U.S.A.):

Statement on the Principles of Work at Carville

Institutions grow old and get senile diseases and become somewhat useless in their old age. They need to be revitalised. Even Carville should take a new look at itself. The hospital becomes a focus for study of the disease, a museum of specimens. There are many causes in leprosy besides the bacterial agents. We must study the reaction of host and parasite in all directions. A cured patient is not cured until re-accepted by his family and community. Carville has to take note of these other factors: it will study all these inter-related components. The medical officer will study to bring Carville into its new inclusive role and bring in the changes without fear.

The Chairman: Dr. P. Brand: noted the social aspects side brought out in epidemiology and control and found the session fruitful as a whole.

Session closed at 4.30 p.m.

Dr. Brand explained the film. (A surgical film showing reconstructive operations was now shown.)