

REPRINTED ARTICLES

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THE PRINCIPLES OF THE PROPHYLAXIS OF LEPROSY

FIRST GENERAL REPORT OF THE LEPROSY COMMISSION,
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I. THE PRINCIPLES OF THE PROPHYLAXIS OF LEPROSY

A. INTRODUCTORY

Despite the gaps which still exist in our knowledge of leprosy, the principles of the modern advance in the domain of science and hygiene should be applied to the prophylaxis of leprosy and the moment is opportune for the present generation to undertake a new international crusade against leprosy.

The prophylaxis of leprosy is only beginning in certain countries and must be methodically organised and gradually spread as a part of a scheme of preventive medicine and social hygiene.

The prophylaxis of leprosy is not a problem capable of solution by the application of any one measure, as the methods of dealing with it must vary with the geographical, economic, administrative, financial and other conditions of the countries where it exists.

Experience would seem to indicate that, divergent as are the various scientific conceptions and interpretations of the facts, it should be possible for leprologists to come to an agreement as to a practical programme, and to formulate working principles sufficiently accurate to be recommended to the health administrators, doctors and hygienists who have to deal with leprosy.

Nevertheless, the problem is so vast and complicated that, in order to achieve some immediate practical results, the whole question need not be dealt with at one and the same time. It is desirable to commence with the most important and urgent questions on which prophylaxis would seem to depend.

B. TREATMENT

In the present stage of our knowledge regarding leprosy prophylaxis, the most important line of attack, in addition to that by isolation, is by treatment, carried out by specially trained personnel. Where satisfactory treatment, therapeutic and hygienic, has not been organised the only available weapon is compulsory segregation; where efficient treatment is possible, segregation may be made gradually less rigorous, on the condition that it is supplemented by out-patient treatment.

Treatment is both general and special. The leper must be subjected to general dietetic, medical, surgical and even mental treatment designed to improve his condition, increase his powers of

resistance, and enable him to endure the special treatment and react favourably to it. Those illnesses which lower the resistance of the body must be promptly dealt with—for example, syphilis, malaria, and intestinal infections such as ankylostomiasis and dysentery. Lepers require a well-balanced diet rich in vitamins, while physical exercise and especially work in the open air are highly desirable.

It is generally accepted that the earlier the treatment is instituted the better will be the results.

The condition known as "lepra reaction" often requires special therapeutic measures.

The chief special method of treatment of leprosy consists in the administration of chaulmoogra and its derivatives, but there are in addition certain forms of treatment which are used either alone or to supplement the above; such as protein shock, metallothérapie, external applications of dioxide snow and trichloroacetic acid, various forms of electrical treatment, and radiotherapy.

Treatment by chaulmoogra and its derivatives is efficacious, however one may explain its action. Most leprologists do not regard it as absolutely efficacious, but its relative efficacy cannot be denied, although this varies with the conditions and the technique of administration.

Some authorities on leprosy make the objection that chaulmoogra has no specific action itself and that improvement is due to the general treatment alone. They maintain that the crucial test has never been carried out, viz., the comparison of two groups of lepers in a similar condition and stage of the disease, one of which groups is treated by chaulmoogra and the other not. A test experiment should if possible be organised on those lines, trying out the most effective forms of treatment against control.

The methods at present used in the administration of chaulmoogra cannot be regarded as finally adopted. There is need for further study to improve both the manner in which the remedy is prepared and the technique of its administration. The consensus of opinion of this commission, however, is that the intradermal injection of the ethyl esters of the fatty acids of the chaulmoogra group oils is the most effective method at present available.

C. ISOLATION

Until recently, the compulsory segregation of lepers in special leprosaria has been the chief—almost the only—measure of prophylaxis, but, unaided by other measures, it has proved insufficient. The serious drawbacks of the measure, tending as it does to promote concealment and thus delaying diagnosis and treatment, are now generally recognised. In practically every country where the method is employed, steps have been taken to minimize the drawbacks of the system, by making leprosaria centres of treatment and by other means.

It is felt that the use of the term "segregation," which bears the odium of conditions now past, should be discontinued and that the term "isolation," which has a somewhat broader and more liberal meaning, should be used instead.

The isolation of infectious lepers, on a proper basis, still remains one of the essential measures in the prophylaxis of the disease. This measure is a well-recognised and useful means of preventing the spread of infectious or communicable diseases, and its value during the infectious stages of leprosy is undoubted. It may be administratively possible and advisable to make it compulsory.

The isolation of lepers should be carried out in accordance with the circumstances prevailing in the countries involved. It should always be associated with active treatment of the patients and educational propaganda among the general public and patients themselves, and should include measures which will ensure the observance of precautions essential for preventing the spread of the disease, as determined by the responsible health authority.

The nature and condition of the institutions in which lepers are isolated, the efficiency of the treatment given therein, and the extent to which the public is educated on the subject of leprosy, will greatly influence the popular attitude towards isolation measure, and thus its effectiveness.

In applying this measure, a clear practical distinction should be made between cases that are considered infectious and dangerous to the community and those that are considered non-infectious. Bacteriological examination is at present the best available basis for making this distinction, and its methods should be standardised.

D. ORGANISATION OF PROPHYLAXIS

The essentials of the system, as already practised, are as follows:

1. LEGISLATION

The progress made in the treatment of leprosy makes it necessary to readjust the regulations so that the old methods which were largely based on administrative and police control, may be modified in accordance to modern knowledge and social consideration.

The simpler and more elastic the legislation is, the better. It is desirable that it would provide for:

- (a) Notification, as for other infectious diseases;
- (b) Isolation of bacteriologically positive and infectious cases, as far as this is possible;
- (c) Facilities for treatment.

Regulations as to details (measure of disinfection, prohibition from engaging in certain occupations, etc.) should be so framed as to be capable of easy adaptation to social conditions and the gradual progress made in knowledge of the disease.

International agreements should be arranged to regulate the movements of lepers from one country to another.

2. EPIDEMIOLOGICAL CONTROL

Prophylaxis requires as exact a census of lepers as possible, which should be carried out by specially trained officers, either qualified doctors or health visitors. The methods to be adopted will necessarily vary in different countries, as for example the appointment of special survey parties or the utilisation of existing health staff.

Epidemiological research should be carried on energetically, especially in those countries where there is evidence of local or general spread of the disease.

Early diagnosis is a fundamental requirement in the control of leprosy.

Special attention should be paid to regular examinations of school children.

3. EDUCATION AND PROPAGANDA

In most countries where leprosy exists, a rational scheme of prophylaxis is hindered by ignorance and prejudice, public opinion wavering between indifference and blind panic.

Educational propaganda must be carried on, not only among the general public, but also among lepers themselves, to implant firmly the idea that leprosy, though contagious, is a remediable disease, resembling tuberculosis in this respect.

Propaganda may be of two types:

- (a) That based on dissemination of general knowledge regarding leprosy;
- (b) That based on the conditions as disclosed after a local survey.

The methods adopted will vary to a certain extent in towns and villages. As the villages are generally the reservoirs of leprosy and most cases in the towns have migrated from the villages, the chief stress must be laid upon village propaganda.

The essential factor in the successful carrying out of propaganda is the personnel. The best propagandists are not necessarily qualified men, but those who are in close touch with and are acceptable to the village people. This propaganda should, however, be under the direction of qualified experts. Specially prepared pictorial posters, lantern slides, and cinema films are of considerable value in bringing before the public facts regarding the disease.

For the training of the medical profession, especially health officers and auxiliary workers, special courses should be arranged.

In countries where leprosy is a problem, medical curricula should provide for special lectures and demonstrations being delivered if possible by men with practical experience of the disease.

Experience indicates that one of the most potent educational influences on the general public is the result obtained by treatment and that inefficient treatment leads to discouragement.

4. SCIENTIFIC RESEARCH

Every country where leprosy exists to an important degree should have at least one centre dealing with the theoretical and practical study of leprosy and including a clinical installation, with indoor and outdoor departments, and an organisation for epidemiological and laboratory research.

5. ISOLATION

This matter has already been dealt with on page [210].

6. DISPENSARIES

Cases which are considered as uninfectious, and especially early cases of this kind, should, as far as possible, be treated in dispensaries.

The most convenient form of dispensary is the dermatological clinic, but, under certain circumstances dependent on density of population and high incidence of the disease, special leprosy dispensaries may be found necessary. Facilities for treatment should be arranged in village centres, so that lepers may not be required to seek treatment in large towns whose inhabitants would be thereby endangered.

7. SERVICE FOR DISCHARGED LEPERS

It is desirable that, where possible, patients who have lost all active signs of the disease should be kept under surveillance, as they need after-treatment, they must be re-examined periodically, and only too often they are prevented, for physical and social reasons, from finding a place in the community.

It is therefore desirable to organise the medical surveillance of persons who have suffered from leprosy, by means of an epidemiological control service and, if necessary, by providing special colonies for patients who have been discharged.

8. CHILDREN OF LEPERS

As a general principle, it is highly desirable that children born of leprosy parents should be removed as soon as possible after birth and brought up where they are free from contact with lepers. It is specially important that this be done in the case of children born in leper institutions.

9. MARRIAGE OF LEPERS

Marriage and cohabitation among lepers should be discouraged for medical and social reasons. In institutions, whether voluntary or compulsory, they should if possible be prohibited. In those compulsory institutions where they cannot for any reason be prohibited, and in leprosy asylums for almost incurable or hopeless cases where they would be allowed in order to make those institutions more popular, their deleterious effects should be impressed on patients and procreation should be discouraged by all legitimate means.

E. SUMMARY AND CONCLUSIONS

1. Prophylaxis of leprosy is not a problem that admits of solution by the application of any one measure, since the means of dealing with it obviously vary with geographical, economic, administrative, financial and social conditions and with the incidence of the disease.

2. There is no reliable system of prophylaxis without treatment, and it is generally accepted that the earlier the treatment is instituted the better will be the results.

3. Leprosy resembles tuberculosis in being, in certain stages, a contagious but curable disease: curable at least in the sense that bacteriological examination becomes negative and other active signs disappear and remain absent permanently or for an undetermined period.

4. The prophylaxis of leprosy may be achieved by a system of medical, educative and legislative measures. It should provide for the isolation and treatment of infectious lepers and particularly for the treatment of early cases in clinics and dispensaries; also for the periodical examination of suspects. Special measures should be adopted for dealing with the children of lepers and for patients who have recovered either after treatment or spontaneously.

5. It is desirable that each country where leprosy exists to an important degree should have at least one centre for the study of the disease, with research laboratories and special courses for the medical profession and their assistants. Where this is not practicable, men should be sent to some foreign centre for training.

6. Arrangements should be made to include instruction in leprosy in the curriculum of all medical schools and colleges.

7. It is necessary to educate the public in regard to leprosy by modern methods of popular teaching and propaganda.

8. Isolation of infectious lepers is a necessary measure in a comprehensive campaign against leprosy, but it cannot be regarded *per se* as the sole means of prophylaxis. Its drawbacks can be mitigated by other measures applied concurrently. Isolation should be applied only to cases that are considered infectious.

9. Any form of treatment in order to give satisfactory results requires to be combined with suitable dietetic and general hygienic conditions.

10. For special treatment, oils of the chaulmoogra group and their esters and soaps are recommended.

11. The system of prophylaxis must be animated by the spirit of preventive medicine and social hygiene.

II. TECHNICAL SUGGESTIONS.

A. UNIFORMITY OF TERMINOLOGY, RECORDS AND TECHNIQUE OF EXAMINATION

The lack of uniformity in these methods, of which the current literature affords ample evidence, is a serious handicap. It makes it difficult or impossible to compare reports of different workers, and often minimises the value of work done. It is highly desirable that steps be taken to promote uniformity in such matters. As the questions are largely technical and require careful and detailed study, it is now possible to point out only the more important features that require consideration.

1. TERMINOLOGY

(a) "*Leper.*"—This term should not be used without definition or qualification where there can be any doubt as to its meaning. For example, it is highly confusing when reports from some institutions deal solely with cases bacteriologically positive, when admitted or put under treatment, while the reports from others include also cases that have never been found bacteriologically positive or in which the disease had died out spontaneously. It is highly desirable that satisfactory distinctive terms be devised and generally adopted.

(b) *Designation of Lesions.*—Standard designations and definitions of the various lesions of leprosy should be arrived at and generally adopted.

(c) *Classification of Cases.*—The long accepted and most widely used primary classification recognises three types, maculo-anaesthetic, cutaneous (or nodular) and mixed. Because of certain fallacies of conception involved in this, more recent classifications recognise only two main divisions, which are subclassified according to the degree and nature of involvement. There is no uniformity of practice in

this matter and it is desirable to evolve a scientific classification that will be acceptable to all.

(d) *Active Signs*.—Even when all evidence of active leprosy has remained absent for years, certain scars and deformities frequently persist. It is important, therefore, to have standardised criteria by which active lesions may be distinguished from permanent, inactive lesions.

(e) *Progress under Treatment*.—It is felt that confusion is to some extent caused by lack of generally accepted criteria of improvement and of the degree of improvement. While it may be difficult to arrive at absolute standards, an effort should be made to promote uniformity of practice in this matter.

(f) *"Cure"*.—The word "cure" is liable to misinterpretations. It is therefore advisable, as far as possible, to avoid the use of this term.

2. RECORDS

Uniformity is necessary also in regard to leprosy statistics, a knowledge of which is essential to determine the general results of treatment and the prophylactic campaign. It is desirable that health administrations and leprosy institutions should adopt standard record forms. These should cover all the essential features of leprosy work—e. g.:

- (a) Returns of numbers, distribution of patients, etc.;
- (b) Medical reports of cases;
- (c) Records of treatment and results;
- (d) Records of relapses.

For this purpose, special forms and charts should, as far as possible, be standardised.

3. TECHNIQUE OF EXAMINATION

The standardisation of methods, as far as this is practicable, is of a great importance in order that the maximum of efficiency be obtained and that results of various workers may be compared.

In modern prophylactic efforts, special stress is laid on early diagnosis and on distinction between presumably infectious and non-infectious cases. The diagnosis of early cases requires experience and careful application of special methods, lacking which many cases may be overlooked. The distinction between the so-called "bacteriol-

ogically positive" and "bacteriologically negative" cases must, admittedly, be based on the careful application of standard methods of examination. It is therefore most important that such standard methods be established.

B. TREATMENT

The varying and uncertain results obtained with treatment are dependent not only on the different types of therapeutic agents used and of the methods of application, but also on a number of other facts, such as the types of cases treated, the conditions under which they live, and the care and the skill used in carrying out the treatment. It is desirable that, in any comparison of results of treatment, these factors should be evaluated as far as possible. It must be recognised that, even in treating a large number of patients, each case must, as far as possible, be treated individually.

With regard to drugs, there is at present an unfortunate diversity of practice. A certain amount of improvement may be obtained by the use of any of a considerable number of remedies, but the experience in most of the larger treatment centres indicates that certain remedies are of superior efficacy. It is recognised that there is need for further experimentation, chemical and therapeutic, to improve upon the remedies now available. In the meantime, there should be extensive and careful comparison of those preparations which have been found the most valuable, and the best of these should be generally adopted as the basis of treatment and the criterion by which the value of other remedies is estimated.

The most commonly used drugs are the oils of the chaulmoogra group and their derivatives. Of the various preparations, the ethyl esters, the sodium salts and the refined oil are in common use. Whatever preparation is used, it should be pure and prepared by approved methods; otherwise uniformity of results cannot be expected.

The method of administration is not less important. Chaulmoogra preparations have been administered in various ways. The most commonly used methods have been the oral, intramuscular and subcutaneous; the intradermal method has more recently been adopted in certain of the larger centres. The most effective method should be definitely determined.

The results of experimental treatment are affected by the chronic nature of the disease and its irregular course, and by individual

variations in the patients. The literature is replete with reports based on wholly inadequate numbers of cases treated for insufficiently long periods. Such reports may not only be valueless, but may be quite misleading and harmful. So important is this point that it is believed desirable to call special attention to it. It is essential to recognise that a comparison of the results of the different kinds of treatment is only possible if based on a sufficiently large number of cases treated.

It must be recognised that, as in tuberculosis, foci of bacilli persist, especially in certain deeper tissues, and that relapses may occur. This indicates that treatment should be continued for a considerable period after all active signs have disappeared, and that cessation of treatment should be followed by periodical re-examinations.