

II. THE TREATMENT OF LEPROSY
REPORT OF THE SUBCOMMITTEE ON TREATMENT*

Hydnocarpus oil and its esters, administered intramuscularly, subcutaneously, and intradermally, remain, so far as our present knowledge goes, the most efficacious drugs for the special treatment of leprosy. Oils from *Hydnocarpus wightiana* and *H. anthelmintica* are most widely used.

The irritant properties of these drugs have been shown to be due to the decomposition products of their therapeutic constituents, i.e., chaulmoogric, hydnocarpic, and garlic acids. This decomposition takes place rapidly in the seeds and hence it is necessary to use only oils pressed from fresh seeds. The oil itself is quite stable and keeps fairly well under proper conditions of storage. The ethyl esters are much less stable than the oil, and should be prepared and sealed hermetically against air as quickly as possible. Distillation of the esters and elimination of the free fatty acids is of less importance in the reduction of irritation than the use of an oil prepared from fresh seeds. The use of ampules, where possible, is recommended; when bottles are used they should be of such size that the entire contents may be used on the day that they are opened; any remaining drug should be used for local applications. Reheating of esters should be avoided.

Many workers have recently used large doses, up to 30 cc. or more, of esters or oil per week. If the drugs are made and handled as mentioned above, they are well tolerated and the results are correspondingly satisfactory.

* This committee consisted of Dr. G. A. Ryrie (*Chairman*), Dr. I. G. Rose (*Secretary*) and Drs. C. J. Austin, H. I. Cole, H. H. Gass, H. E. Hasseltine, B. Moiser, H. de Moura Costa, E. Muir, L. de Souza Lima and M. Vegas.

With regard to the subsidence of lesions in leprosy, this subcommittee is of the opinion that this may be due to either of two causes: (a) lowered resistance of the patient resulting from intercurrent diseases, metabolic disturbances, etc., which cause loss of reactive power, or (b) control of the infection as a response to treatment. In the latter case the process differs essentially from that in the former case, and is to be regarded as wholly beneficial.

For the improvement and maintenance of the general health of the patient: (a) it is of very real importance that the diet should be liberal, well-balanced, and rich in vitamins; (b) healthy, moderate exercise in the form of occupational therapy and outdoor exercise is of value; and (c) it is important to eliminate intercurrent diseases.

Treatment is more effective in the tuberculoid variety of neural leprosy than in lepromatous leprosy, and the beneficial results in the former are in direct proportion to the intensity of treatment. This opinion is unanimous. Doses up to 1 cc. per 10 lb. of body weight, or even more, twice weekly, administered subcutaneously or intramuscularly, have been used and recommended. Here again the purity of the drug is of the first importance. Except in acute phases, intradermal infiltration is a desirable method of treating tuberculoid leprosy.

The same general line of treatment should be recommended for the lepromatous as for the tuberculoid form of leprosy. Treatment with hydnocarpus oil and esters gives beneficial results, though it is not generally as effective as in tuberculoid cases. Intradermal infiltration is of special value. The maximum dose possible should be given, having strict regard to the necessity of avoiding lepra fever.

Because of the danger of relapse, a prolonged period of after-treatment is advisable, particularly in cases of lepromatous leprosy.

During the last five years considerable attention has been directed to the employment of aniline dyes in the treatment of leprosy. The selective affinity of such dyes for leprotic lesions, combined, in many cases, with powerful bactericidal activity *in vitro*, raised considerable hopes for this form of treatment. These hopes have not, up to the present, been fulfilled, and dye treatment in leprosy cannot be considered to have reached a stage where recommendations regarding it can be made. Further experimentation is very desirable, especially with fluorescin.

Treatment by hydnocarpus oil or esters should be dis-

continued at the onset and during the course of lepra reaction (lepra fever), in the ordinary forms of leprosy. The course of lepra reaction is so variable that it is difficult to assess the value of any drug in its treatment. The following drugs are suggested as having proved in different centers to be of value in selected cases: (a) fluorescin solution, freshly prepared, given intravenously; (b) mercurochrome, freshly prepared 1% solution intravenously (not more than 10 cc.); (c) potassium antimony tartrate intravenously. As regards general treatment of the condition, an initial saline purge and light diet are recommended, and alkalinization may be of value. Great stress should be laid on the importance of rest and careful nursing.

With regard to acute tuberculoid leprosy, it has been suggested that the best treatment of an acute reaction is to double or treble the original dose of hydnocarpus oil.

With regard to acute neuritis in leprosy, general treatment, counter-irritation, local injections, the local application of heat, and diathermy are at present the only resources (except operation, which must not be too long delayed).

Lesions of the eye and nose occur with great frequency in leprosy. Pyorrhoea is also a common condition which it is of primary importance to eliminate. The services of an ophthalmologist, a rhino-laryngologist and a dentist should, therefore, be made available in all leprosaria. Routine examination of the eyes should be made with a view to early treatment where necessary, particularly in countries where the incidence of eye lesions is high. Similarly, routine examination of the nose should be made in all cases.

The treatment of leprotic ulcers, in the present state of our knowledge, is unsatisfactory, and further investigation in hospitals and other institutions is recommended.

With regard to perforating ulcer, it is recommended that necrotic bone, where present, should be removed. Rest of the affected limb is a valuable feature of treatment of the condition.

No proprietary preparation of hydnocarpus oil or esters, or any other proprietary preparation at present on the market, is more effective than the pure oil and esters prepared in institutions. For this reason, and because of their greater cost, the preferential use of such preparations is not recommended.

With regard to treatment with potassium iodide, the use of this drug is frequently followed by disastrous results. It

is therefore to be discouraged for the purposes of diagnosis, treatment, or as a test of recovery unless in very skilled and experienced hands.

In conclusion, this subcommittee, realizing that as yet no form of treatment can be regarded as wholly satisfactory, desires to stress the importance of therapeutic research, and would urge that interested bodies devote further funds to this purpose.