WORKSHOP 6: DIAGNOSIS AND CLINICAL ASPECTS

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Diagnosis

In a great number of highly endemic countries, case-finding is undertaken by health workers who, in integrated programs and in primary health care, should be able to make the diagnosis, treatment and follow up not only of leprosy patients but also of cases of other diseases. Consequently, diagnostic methods should be simple and easily applied in the field. When necessary and wherever possible more elaborative methods should be employed.

Leprous neuropathy (new approaches). The diagnosis of early neural involvement (especially as for indeterminate or tuberculoid cases) may be achieved in skin biopsies by identifying the antigen in the nerve, with the use of monoclonal antibodies, and the presence of Schwann cells, using S-100 protein (immunoperoxidase techniques). Neurophysiological examinations (electromyogram, nerve conduction velocity, Hoffmann reflex, F wave, and cerebral evoked potentials) may be useful for early leprosy diagnosis. However, these examinations can only be performed by trained specialists and cannot be undertaken in the field.

Subclinical infection diagnosis. FLA-ABS, ELISA test, and SACT (serum antibody competition test) may detect subclinical infection. Household contacts were found to have positive reactions and a proportion of them became seronegative. Further investigations in areas of different endemicity are required to throw light on this subject. Dot-ELISA methods (micro-method), easily applied in villages and inexpensive, should be preferentially employed. Household contacts with positive reactions should be tested with lepromin, and the nonreactors (more prone to acquire leprosy and develop the L type) kept under strict surveillance. Although it is not mandatory for many lepromin-negative contacts to develop clinical manifestations, an attempt could be made to prevent their appearance by appropriate intervention.

Probe for *M. leprae* identification—rDNA technology. Cloning of mycobacterial proteins by recombinant DNA (rDNA) might offer interesting possibilities for identifying *M. leprae* in suspected specimens (viable and nonviable ones) in addition to the study of the mechanisms of drug resistance, screening drugs, etc.

Clinical aspects

Early manifestations of leprosy. The first signs are cutaneous and occasionally neurological ones. The earliest skin lesion (indeterminate form) appears as one or as a few hypopigmented and sometimes erythematous macules. They are flat, without infiltration, and with rather ill-defined margins, and some sensory loss. Most often they are distributed on the extremities. Sometimes there may be hair loss on the lesions. These are often transient and self-healing. Leprosy bacilli are not found, or are extremely scanty, by the routine methods. The lepromin response is positive in a very high proportion of indeterminate cases. Most of the cases evolve toward the tuberculoid type and only in a small proportion toward the lepromatous type. Occasionally neurologi-

cal symptoms and signs precede the onset of skin lesions. Tuberculoid lesions are very often an early manifestation.

Reactional episodes. Reactional episodes represent acute or subacute phenomena, with local and/or general involvement and occurring in the chronic course of leprosy. Following studies on cellular and humoral immunity, the reactional states have been divided into two groups: a) Reaction type 1: associated with cell-mediated immunity, may result in improvement (up-grading or reversal reaction) or worsening (down-grading) of the disease. b) Reaction type 2: an immuno-complex syndrome characteristic of the lepromatous type. Cutaneous manifestations may consist of: erythema nodosum (EN) and, less frequently, erythema multiforme and erythema necrosans, often accompanied by constitutional symptoms and systemic involvement.

The correct diagnosis of reactional episodes is important for the appropriate treatment. Differentiation of reversal reaction and relapse is also important in cases who have completed multidrug therapy (MDT).

The study of reactional states is recommended with regard to: lysosomal activity, immune complexes, autoantibodies, use of immunoperoxidase techniques, cell-mediated immunity, and ultrastructure of the nerve, particularly to identify the sites of involvement.

Silent nerve paralysis. While in reactional states painful neuritis is easily recognized, in a large number of cases worsening of the disease process in the nerve is not heralded by pain or paresthesia. Sensory and motor deficit occur insidiously. This may occur in the early stages of the disease or later. Diagnosis of this condition in the early stages, by routine sensory and motor assessments, is necessary to institute treatment and to avoid irreversible deformities.

Lucio's leprosy — Lucio's phenomenon. Lucio's leprosy is a variety of the lepromatous type of leprosy characterized by a diffuse and generalized skin infiltration which never presents nodules and with a special kind of lepra reaction: erythema necrosans (Lucio's phenomenon). It is mainly seen in Mexico, but a few cases have been reported from some other countries.