EIGHTEENTH TUBERCULOSIS AND CHEST DISEASES WORKERS' CONFERENCE

DEVELOPMENTS IN THE ANTI-TUBERCULOSIS FIELD DURING THE LAST FIFTEEN YEARS— A BIRD'S EYE VIEW

by

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It has been customary for me to give you a brief review of anti-tuberculosis work in India every year in these conferences. This time I would crave your indulgence for presenting a bird's eye view of the developments in the field during the last fifteen years or so.

Bhore Committee Recommendations

The first concerted attempt to formulate a health policy for India was made by the Health Survey and Development Committee, known as the Bhore Committee, in 1944-45. The recommendations made by this Committee in regard to tuberculosis were generally in line with anti-tuberculosis measures adopted in western countries in those days, with certain modifications to suit Indian conditions. The number of beds available at that time for tuberculous patients in India was about 6,000 and the number of clinics about 85. The recommendations made by the Bhore Committee were briefly as follows:

1. *Establishment of clinics and expansion of Domiciliary Services*: They visualised one clinic for every district town and emphasised that Domiciliary Service should have a great part to play in Tuberculosis Control. It may be mentioned the anti-bacterial drugs had not been discovered then.

2. *Establishment of Hospitals:* They accepted the normal criterion of providing one bed for annual death, but recommended provision of about 217,500 beds distributed among Primary Unit Hospitals, Secondary Unit Hospitals and District Headquarters Hospitals. Since the provision of such a large number of beds would take many years, they recommended in the first five years, provision of 200 beds for every 10 million population.

3. *Home for incurables:* Their recommendations included

provision of homes for incurables, and suggested that non-official organisations interested in social welfare should help in this and that Government should undertake to meet a substantial part of the expenditure through generous grants. The Committee further recommended establishment of After Care Colonies, provision of facilities for training tuberculosis workers, undertaking tuberculosis surveys to obtain information regarding the incidence of the disease and to provide a basis for effective planning. An important recommendation made by them was that there should be created a separate section for Tuberculosis in the Directorate General of Health Services in the Government of India with an expert staff to advise, coordinate and expand anti-tuberculosis work in the whole country. They also recommended encouragement of non-official effort through the Tuberculosis Association of India and its branches to supplement Government work.

Mudaliar Committee

A Committee under the Chairmanship of Dr. Lakshmanaswamy Mudaliar was appointed some time ago by the Government of India to review what has been achieved in the health field and to recommend further measures needed in this regard. While the report of this Committee is awaited it may be worthwhile reviewing anti-tuberculosis work in India after the Bhore Committee's report with special reference to the post-independence period.

Tuberculosis Adviser's Section

Two years after the Bhore Committee's report, India became independent and the National Government had to take steps to implement that Committee's recommendations. The events that followed independence made the tuberculosis problem even more serious and difficult than what was prevalent at the time the Bhore Committee prepared its report. One of the first steps taken by the National Government was to act on that Committee's recommendations in regard to the

creation of a separate Section for Tuberculosis in the Directorate General of Health Services in the Union Government with a senior officer as Adviser. This Section was created early in 1948. Soon after, this Section started making plans for a comprehensive tuberculosis control scheme for the country. About the same time the World Health Organisation was formed and this body took keen interest in tuberculosis control especially in the under-developed countries of the world, including India.

B. C. G. Vaccination

The newly created TB Section took up the question of introduction of BCG Vaccination in India as a preventive measure against tuberculosis. A pilot study for this purpose was started in August, 1948. At the same time, the Government of India took steps to set up a laboratory for the preparation of BCG Vaccine at Guindy (Madras).

National Plans

A TB control programme which was prepared by an Expert Committee (Technical Committee of the Tuberculosis Association of India) and which was considered as practicable was included in the national Five Year plans. The main items in this programme were expansion of the BCG Vaccination on a nationwide scale, establishment of clinics and expansion of domiciliary services, establishment of at least one Training and Demonstration Centre in each State, provision of beds for isolation, rehabilitation centres and research. How these schemes were implemented or what were the short-comings have already been indicated in previous years, and I do not propose to repeat them. References have also been frequently made to the National TB Sample Survey. Therefore I propose to confine myself to certain aspects of Research which has not been widely known or appreciated.

Community Programme

A community TB control programme started in 1947 in

Madanapalle was extended in 1951 to cover a population of about 60,000 people around that area. This programme included case-finding by mobile X-ray and laboratory test, and provision for isolating and treating cases discovered. The programme was further expanded in 1958 to cover a population of about 200,000 with the emphasis on finding the results of domiciliary treatment by self-administration of drugs with the minimum supervision on a community basis. The first study has shown that the tuberculosis mortality has been brought down from about 150 to about 20 per 100,000 i.e. by one-seventh during a period of ten years. While the death-rate *did* come down there was hardly any change noticeable in the incidence of the disease from year to year as noted by repeated examinations of the population at least once in about 18 months. This study has revealed that the development of active disease even in tuberculin positive cases takes an average of about four to five years. A majority of new cases discovered are not in the young age group (15 to 35 years) but in the group above 35 years. The reason for this is not quite clear yet. During the investigation it was noted that the virulence of tubercle bacilli varied in India from that noted in bacilli isolated from patients in western countries. This may be a possible explanation for the slow development of the disease in an infected individual, but this can be confirmed only after further research. However, it may be mentioned that there are bacilli in Indian patients as virulent as noted in patients in western countries also. Moreover, once the disease develops, there does not seem to be much difference in the type of the disease between those developed with varying degrees of virulence. The second study referred to above in this large population group is still in progress and it is too early to assess the results.

Applicability of Tuberculosis Control Programme

For many years it was obvious to those responsible for tuberculosis control in the country that it would be impractical to adopt in India those measures which were found satisfactory

in western countries. According to standards accepted by the latter a minimum provision had to be made for at least one bed for every annual death from tuberculosis, or one bed for every thousand population. According to this India should have at least 500,000 to one million beds. We have at present about 30,000 beds in the whole country and the annual rate of increase, even after special efforts, is only about 300 to 400 during the last ten years. Therefore we were obliged to think of some other method as an alternative to deal with the situation. The advent of effective drugs for tuberculosis made it possible to consider the expediency of treating patients in their homes, and in our opinion, this can be best carried out from tuberculosis clinics serving as the base. This is the reason why establishment of clinics was included as a priority item in the national programmes. At present there are about 225 tuberculosis clinics in the country and the programme is to increase this number to about 400 during the next five to ten years, thereby providing one clinic for one to one and half million population. Even so, we will be faced with numerous problems such as finding out the cases and treating them effectively in their homes. We have also to make sure whether domiciliary treatment will be as good as institutional treatment.

Efficacy of Domiciliary Treatment

A research programme was therefore instituted for this purpose in 1956 in Madras (Madras Chemotherapy Centre) with the help of Government of India, Government of Madras, World Health Organisation and British Medical Research Council. The results of the investigations made in this Centre are widely known, and do not need repetition. It may, however, be mentioned that they have proved that domiciliary treatment of tuberculosis with anti-bacterial drugs if properly supervised is as good as treatment given in Sanatoria. Another important finding of this project is that the development of disease among the contacts of patients treated either in the sanatorium or home is practically the same. Most of the contacts that

developed tuberculosis did so during the first three months after the treatment was started whether in sanatorium or in home, indicating thereby that most of the infection had taken place before starting the treatment. It also indicates that if effective treatment is started after the diagnosis of the case, the contacts do not run any increased risk even if the patient is treated in the home. These studies have further shown that the best form of treatment is a combined therapy with at least two drugs I.N.H. and P.A.S.—if taken regularly and daily as these are particularly suitable for domiciliary treatment and can be taken by patients themselves.

Researches have, no doubt, shown that we can get good results by drug therapy of patients in their homes. Yet there are several practical problems to face in the application of this weapon. One of the most important is the cost. I.N H. is comparatively cheap, but P.A.S. costs about ten times more. The cost of treating, say, 1,000 bacillary patients for one year by I.N.H. & P.A.S. is about Rs. 150,000. Therefore the cost of treating one million infective cases in India can well be imagined. Few, if any, Governments in the economically less favoured countries are prepared, or can easily afford to provide the necessary finances for free treatment of the great bulk of their infectious cases with such an expensive combination. Hence it is imperative to find a cheap companion-drug to replace P.A.S. or even some new single drug which is cheap and equally effective as I.N.H. and P.A.S. combined.

It is established that tuberculosis patients can be treated in homes if a particular regime is followed. It is, however, essential to emphasise the many difficulties to be overcome to ensure extensive application of this programme to cover the millions of patients in the country. Certain investigations are being made to test the efficacy of this regime with partial supervision by the investigating staff distributing the drugs once in two weeks. At another centre investigation is being done using the local health staff and social and other workers for

drug distribution and check up. The investigating units with mobile X-ray and laboratory outfit diagnose cases and provide the drugs. In course of time it is hoped to find out the effectiveness of these different approaches and if this system works out satisfactorily the use of specialised staff can be limited to diagnosis and general supervision and the non-specialised staff can be used to extend the drug treatment to a large number of patients.

Non-Specific Infections

During the extensive tuberculin testing associated with B.C.G. Vaccination programme, it was noted that there is widespread non-specific infection, which produces a low grade tuberculin sensitivity, as different from the tuberculin sensitivity associated with infection by microbacterium tuberculosis. At the same time it has been indicated that there is a possibility that the non-specific allergy found in a considerable proportion of the population in India may denote some degree of immunity against tuberculosis and thereby minimise the need for B.C.G. Vaccination in these areas. It therefore seems that there is urgent need to investigate the place, if any, of non-specific allergy in the production of immunity against tuberculosis and if so at what level. This is of great epidemiological importance. Would B.C.G. Vaccination superimposed on those with non-specific infections have a similar effect as noted by the B.C.G. control trial carried out by the British Medical Research Council in Great Britain or is it different? The objective of this study is not to find out whether B.C.G. is effective or not; but rather to find out the degree of effectiveness under the epidemiological conditions in India. An investigation programme for this is being planned for.

I have indicated briefly what a stupendous and difficult problem tuberculosis poses in India showing at the same time that we cannot control this disease in a foreseeable future if we confine merely to methods used in the past by western countries. I have also tried to spotlight some of the investiga-

tions that are intended to find out how best we can try to control the disease in a comparatively short period by using the means that are available or can be made available in the near future. With modern discoveries, especially of potent drugs, and with vaccine for prevention there is hope. We are justified in saying that we have now the tools; the task is to find out how best to use the tools and finish the job.

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