

THE PROBLEMS OF TUBERCULOSIS

By Dr. JAYARAM

I am thankful to the Secretary of the Reception Committee for giving me an opportunity to talk to you on the problems of tuberculosis. As you are all aware this subject is evoking the keenest interest all over India. The formation of the King George Thanksgiving Anti-Tuberculosis Fund was the starting point to set people thinking about tuberculosis. Her Excellency Lady Linlithgow has given it a further fillip by her epoch-making appeal for funds for this purpose. India will feel ever grateful to her for this kindly act. We hear of meetings held all over big cities, towns and villages to form Anti-Tuberculosis Committees for collecting funds. This Conference of yours is the suitable place to consider the programme of work for combating tuberculosis, for the trained nurses more than the physicians and surgeons have to bear the brunt of it in the successful carrying out of the Anti-Tuberculosis measures.

KNOWLEDGE ABOUT THE METHODS OF INFECTION AND INFECTIVE ORGANISM

The problem of infection.—With the discovery of tubercle bacilli by Robert Koch in 1882 it was at once concluded that practically all the problems of phthisis had been solved. The infective microbe enters the human body; implants itself in some tissue; by its growth and metabolic processes it produces toxic symptoms and causing caseation destroys vital organs. With this knowledge it was thought that the prevention of this disease had been reduced to very simple principles. The destruction of the bacillus wherever found and prevention of their entry into the human system whenever attempts at their destruction failed for any reason: simple though they look they are beset with so many difficulties. Clinically it has been found that unlike other diseases typhoid, cholera, dysentery or even syphilis, its course is very much different. Its onset is insidious; a person may be infected when he is 2 or 3 years old but the symptoms and signs develop long after. Phthisis is the burden of the song, the first verse of which was sung to the child in its cradle.

One would ask why there should be such an amount of importance attached to tuberculosis and not to other diseases. Statistics show that very nearly one out of ten human beings in civilised communities succumb to this disease. It has been found that very nearly 90 per cent of the adult population are already infected as is evidenced by a positive reaction to tuberculin injections. The tuberculosis survey in Mysore City till 1934 shows that tuberculosis stands third in the list of mortality as the cause of death. 10 per cent of the deaths are due to this disease. The proportion of deaths in males and females differs:

during age period 10 to 15	deaths in females were 3 times that in males;
" 15 to 20	it was 9 times that in males.
" 20 to 25	" 4 times
" 25 to 35	" 4 times

During the same age periods the general mortality for all diseases amongst females was not so high as the mortality due to tuberculosis.

10 to 15 general mortality in females was less than in males.

15 to 20 1.2% less than in males.

20 to 30 1.3% less than in males.

During the prime of life women fall victims to this illness. The strain of pregnancy, certain mechanical changes which set in immediately after parturition are responsible for the acute turn the disease takes. There is an old saying 'A tuberculous woman usually survives her first pregnancy, may or

may not survive her second pregnancy but will never survive her third pregnancy'.

The mortality rates amongst males show that the age period affected is 20—30. The earning members of families are rendered helpless. It is a drain not only on the families but on the State.

The enormity of the incidence of this disease calls for exceptional measures to control the disease.

The methods of treatment have undergone considerable change during these two decades; rest, treatment, with nutritious diet and fresh air has been supplemented with active treatment. Surgery is finding a more important place in the treatment than mere medicine and food. The surgical treatment aims at minimising the spread of tuberculous lesion by collapsing the lung or rendering it inactive, so that the disease is limited to the affected side only and in course of time the lesion heals. This is achieved by either inducing Artificial Pneumothorax, by operations on the phrenic-nerve and paralysing the diaphragm or by thoracoplasty by which the greater portions of the ribs on the affected side are removed and the size of the hemi-thorax is permanently narrowed. I do not propose to go into the details of these different operations. With the advent of the more active treatment the results have been extremely gratifying; even the so-called 3rd stage disease is brought under control. Imagine a patient running hectic temperature with one of the lungs riddled with cavities of all sizes. If such a person could be set on his feet again with either an artificial pneumothorax or combined with phrenic avulsion and if need be the treatment is completed by doing a thoracoplasty, one will be disillusioned about the dire effects of tuberculosis. Tuberculosis is no more one of the incurable diseases; on the other hand this is the most curable disease provided it is taken on hand early. But let me tell you that it is not possible for us to carry out such surgical measures if the patient comes with both the lungs involved.

It is here that the Anti-Tuberculosis Association will help us. The earlier we can get a patient the greater are the chances of his being cured. Discovery of early tuberculosis has in large part failed because the methods available to general dispensaries have been inadequate for the purpose in view. In the attempts to control tuberculosis we must concern ourselves, not only with its transmission from the sick to the well but with the existence of widespread concealed infection of varying grades of intensity, which in many instances under favourable conditions will become manifest disease. Existing economic conditions and industrialisation of our country are favourable to the development of tuberculosis. It is pre-eminently a disease of poverty and want of knowledge. The menace of this widespread concealed infection, much of it just below the level of our vision, is obvious from statistics. A thorough knowledge of the occurrence of tuberculous infection and the incidence of the disease is the basis for all effective efforts to control the disease. Early recognition of tuberculosis is notoriously defective and we have not learnt how to use new methods when they have become available.

We may know how many people die from tuberculosis every year, but we have no accurate information about the actual number who are suffering with this disease. It is supposed from statistical data and calculations that there are ten persons actually suffering from manifest tuberculosis to every death in a city.

The National Tuberculosis Association of United States of America was started in 1904 with the following ideals:—

One of the first steps we initiated would seem to be the adoption of a plan of organisation that would bring each State by means of one or more

representatives lay or professional in touch with the International Association. The greatest need is education of the people and through them education of the State. These requisites are briefly a higher standard of public hygiene and improved condition of life for the masses; sanitary laws embodying the municipal control of tuberculosis; the segregation of the tuberculous in public institutions, the establishment of sanatoriums for incipient cases, hospitals for advanced and hopeless ones who cannot be cared for safely at their homes.

Sir Robert Philip rightly said that one should not wait for these patients to come to us seeking advice but that we should go to their doors and find out the suffering persons. The health visitor and the doctor have a lot of responsibility when they are entrusted with this work. It is the health visitor who with her amiable ways wins the confidence of the people in a home and advises them how to prevent the spread of the disease; at the same time she will give all help to suffering persons in their homes.

Briefly put, the programme of work in tuberculosis would be as follows:—

Tuberculosis clinics or out-patient dispensaries have to be established in every big town and city. The physician in charge must have had a thorough training in the more recent methods of diagnosis and treatment of this illness. It is becoming more and more a specialist's domain. These clinics must have a small laboratory for blood and sputum examinations and an X-ray apparatus. These are the irreducible minimum requirements for a clinic.

Attached to this clinic there is need for out-door workers as health visitors and field doctors. As soon as a patient is diagnosed as suffering from tuberculosis, the home visiting staff will be apprised of this fact. The health visitor will go to the patient's home, make a note of the home conditions as ventilation, sanitation, number of inmates adults and children. The visiting doctor will examine all the contacts, make tuberculin tests and send such of the persons as are below par in their health to get a further examination at the clinic. He and the health visitor will direct the ambulant treatment of the patient till he gets admission into the sanatorium or hospital or colony as the case may be. They further advise about the methods of preventing the spread of infection. You will be surprised to hear that 14.5 per cent of the contacts have been found to be suffering from manifest tuberculosis in Mysore City. I daresay it will be the same in all towns, perhaps more in bigger cities. Tuberculosis must be made a notifiable disease.

By adopting such methods the rate of mortality has been brought down from 250 to 60 per 100,000 population in New York City and to a much smaller number in the smaller cities in America, within a space of 30 years. No doubt this means money. The aphorism of Hermann Biggs 'Health is purchasable' is accurately true in the sense he doubtless implied. Health is purchasable provided we know what to buy.

Let us enquire into the facilities that are available now for the detection and treatment of tuberculous patients.

As I have already said diagnosis of tuberculosis is delayed till the very late stages. What is the use of diagnosing an abscess when it has become very big and actually burst, throwing out large quantities of pus. In the same way it is no use waiting to diagnose a case of tuberculosis till tubercle bacilli are found in the sputum. Just as we could abort many an abscess or by timely incision aid its healing in a short time, so also a case of tuberculosis if diagnosed early could be prevented from developing into a case of phthisis. It is not possible to diagnose these cases in an out-patient dispensary where two to three hundred cases have got to be gone through within a space of two hours. If all the cases suffering from chest diseases or all persons with a cough or temperature persistent for more than two weeks are examined

with a view to eliminate tuberculosis, many a case would be saved from the jaws of death.

Our difficulty now is where we are going to house these patients, once we have diagnosed them as tuberculous.

The number of beds available for these cases is deplorably small. Perhaps we have about 1,500 beds for the whole of India and we have only 100 for the whole of the Mysore State. Looking at the statistics for Mysore State in the year 1936 the Senior Surgeon reports that there are 4,892 deaths due to tuberculosis. Tuberculosis Associations opine that there must be one bed for one death in a place. At this rate we ought to have at least 4,000 beds for the Mysore State. It is not practical politics at any rate; just now to expect so many beds to be allotted just for tuberculosis, at least 1/10 of this would be a welcome number immediately. In the meanwhile what I would suggest is the formation of Tuberculosis Associations and Tuberculosis Clinics and most of the patients who are not admitted into the sanatorium could be given treatment at home with the Field Doctor and the Health Visitor.

NURSING IN TUBERCULOSIS

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In nursing patients suffering from tuberculosis, it is necessary to use all the general principles of nursing, but in addition to these there are some special features in tuberculosis nursing, and it is with these I specially shall deal in this paper.

First and foremost is the necessity of seeing that patients observe strictly the time-table with regard to rest and graded exercises. The whole treatment of tuberculosis is based on the alternation of rest and graded exercise varied according to the needs of the individual patients. Whatever other treatments there are given, surgical or medical, the basis of the treatment remains the same. The reason behind this rest and graded exercise is that in order to enable the patient to build up a resistance against the poisons produced by the tubercle bacilli, it is necessary to have a small amount of these poisons flowing in the blood, but on the one hand there should not be too much, nor on the other hand too little. The doctor will prescribe the amount of rest and exercise which he considers necessary for each patient to have, and it is the duty of the nurse to see that the patient faithfully carries out the orders of the doctor. This is not always easy, specially as many of the patients do not feel very sick, although they really are quite sick. Unless there is strict discipline, the orders about rest and exercise will not be kept. The patient, for example, with a little fever, will often be found out of bed and even wandering about, doing much harm to himself, and completely misleading the doctor as to his treatment. Other patients, who are feeling fairly well and are allowed some walking, may very easily be tempted to overdo their walking, again with the same unfortunate results. On the other hand, some patients may be lazy and may be tempted not to take the exercise which the doctor has ordered for them, and in this way will deprive themselves of the full benefit which they should receive from the treatment. Therefore, a great responsibility falls on the nurse, and if she fails in keeping a sense of discipline in the ward, and if she fails to help the patients to realize the absolute necessity of observing the time-table, as prescribed by the doctor, much or even perhaps all of the efforts to help the patient will be in vain. The ease with which this discipline is kept varies a great deal with the different types of patients, their education, intelligence, and upbringing. In an institution such as a sanatorium, it is possible to build up a tradition of discipline, so that even patients who normally would be very difficult to deal