A PERIPHERAL TB CLINIC

by

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This article gives an account of the inception of a Tb clinic in the Hills of Eastern Nepal, the role it has to play in the control of tuberculosis in the surrounding district, and the problems which have been encountered in its first few months of operation.

The present clinic in Dhankutta was opened in October 1969 as part of the District Health Services. At first, it was held twice a week as a specialist out-patient clinic in the Hills but as numbers grew it became necessary to hold a daily clinic and move to the Hills premises. The clinic is run on the understanding that all Tb patients come under the supervision of the hospital and a system of referral between the hospital OPD and the clinic has been established.

The BCG programme for Kosi Zone is progressively covering the Zone from the Hills. The Dhankutta Tb clinic was introduced nine months in advance of the BCG team and has the following objectives:

1. To provide a centre for the diagnosis and treatment of all forms of Tb.
2. To educate the people about the disease. An effective education programme can serve to prevent bovine Tb by encouraging the boiling of all milk and to reduce the human reservoir of infection by persuading people with symptoms to attend for diagnosis and treatment. In outlying areas ignorance of the disease, or indifference to it was found to be almost universal. Initially information was directed at Panchayat members who were to pass it on to their villages by word of mouth and by distributing pamphlets. The pamphlets were of two types -- one was a simplified illustrated account of pulmonary Tb (1000 distributed) and the other was more comprehensive emphasising modes of transmission of human and bovine types, symptoms, the importance of a full continuous course of treatment and of BCG immunisation (6,000 distributed). At several "Melas" instruction was given with the help of a flip-chart of illustrations followed by the distribution of pamphlets. The most successful education at a village level was undoubtedly achieved by enthusiastic Panchayat members.

3. To initiate advance publicity for the BCG programme and plan its campaign.

Building

The present Tb clinic is a two-storey house (30 feet by 10 feet) supplied by the Panchayat and stands fifty yards from the Hospital. At the entrance of the ground-floor is the registration desk and filing system. To one side of this is a wash basin, water filter, and sterilising equipment for needles and syringes. To the other is a waiting area with the Patients' Progress Chart and educational posters on the wall and beyond this are two small screened cubicles where injections are given. On the first floor there is a pathology laboratory (which also serves the hospital), an examination couch etc. and a small library. We have found this small building with its modest rent to be perfectly adequate and the construction of a clinic to a special design would seem to be unnecessary and wasteful.

Organisation

The clinic is staffed by a nurse and a doctor. Patients presenting with a referral slip from OPD or with symptoms suggestive of Tb are given a numbered registration card, and a sputum smear is taken from those patients with chest symptoms.

Patients are directed upstairs one at a time to the doctor who takes a history, examines each patient and fills a record card for filing. If pulmonary Tb is suspected the patient is asked to return later in the morning when his sputum will have been stained and examined. If this turns out to be negative early morning specimens are requested.

When a diagnosis of Tb has been reached, the patient is given a 15-minute talk about his disease which is varied with his age, intelligence and attitude but which always attempts:

1. to convince the patient that he has Tb. If pulmonary Tb, he is shown the bacteria in his sputum.
2. to educate him about his disease, its mode of transmission, the damage it is doing (illustrated by diagrams) and its course if left untreated.
3. to discuss a regime of chemotherapy which is practicable for him, and explain in detail what it will involve, the number of months that he must attend, and the reasons why he must not default.
4. to advise him to eat a full, balanced diet.

We find that full explanations and clear directives are welcomed by the patients. The initial talk is reinforced frequently in the first few days and weeks of treatment, although perhaps the most convincing teaching and encouragement comes from fellow patients. The atmosphere and morale of the clinic is all important.

A family history is taken and the patient is told to bring all symptomatic contacts and children of years and under as soon as possible. The danger of spread to his family is emphasised and methods of sputum disposal are discussed.

Finally the patient is presented with his Tb Card which has space for recording attendances, and he is shown the Patients' Progress Chart which is a colourful record of each patient's current duration and type of treatment.

Diagnosis

In the diagnosis of pulmonary Tb in this context the most useful adjunct to clinical assessment is the examination of stained sputum smears. At the time of writing about 660 sputum smears have been examined yielding 90 positives, excluding followup smears.

For practical purposes results are recorded as 'Negative', 'Positive' and 'Repeat,' but in this clinic we have attempted to assess sputum load in positive sputums from + to + + + +. We find that there is a loose correlation between sputum load and clinical severity of disease; but there are surprising exceptions.

To date there have been 41 positive stat sputums and 6 negative stat sputums in patients whose subsequent early morning specimens proved to be positive.

In many cases a sputum smear makes a diagnosis of pulmonary Tb before chest signs develop. In 88 symptomatic patients with positive sputums 28 had absent or minimal chest signs i.e. 45.8%.

We have 133 patients diagnosed as pulmonary Tb; 91 of these had the diagnosis confirmed by sputum smear. In 24 the sputum was not examined either because they were children, or because they produced evidence from another centre chest x-ray or sputum report or because their treatment had been started already. In 18 a clinical diagnosis was made in the face of a negative sputum: 9 of these patients had taken antituberculous treatment in recent months and of the remaining 9 there was a clinical improvement on anti-tuberculous drugs in 8. The one patient who did not improve will be given a course of oral therapy although in retrospect a diagnosis of bronchitis seems likely. It was felt that chest x-ray would have been an important but possibly unhelpful diagnostic aid in these 18 patients only, i.e. in about 12% of cases, and probably would have altered the management of but a single case. When the x-ray unit opens in Dhankutta in a few months it will be a welcome additional facility but as a diagnostic aid it will not displace sputum smear examination. Its usefulness will lie in follow-up viz., a plate at diagnosis, another after twelve months of treatment and a final plate before treatment is stopped.

We have found this to be very common and as it tends to occur in the early weeks of treatment with Thiacetazone it is easily confused with the vestibular dysfunction caused by Streptomycin when both drugs are used together. The giddiness and ataxia caused by Thiacetazone can be severe and persist for several weeks, but tinnitus and deafness are much less common. As vestibular dysfunction due to Streptomycin can rapidly progress to irreversible deafness, the dilemma is clear. When moderate to severe vestibular dysfunction occurs on a regime of Streptomycin/Isoniazid/Thiacetazone either we stop Streptomycin and continue Isoniazid/Thiacetazone alone or change to intermittent Streptomycin/Isoniazid/P6. In the former case if giddiness and ataxia are not diminishing

after three weeks PAS/Isoniazid is substituted until the effects were off, when Isoniazid/Thiacetazone were reintroduced. Recurrence of vestibular dysfunction confirms Thiacetazone toxicity and Streptomycin can be re-introduced.

The situation is unsatisfactory as undoubtedly some patients are being deprived of the benefits of Streptomycin unnecessarily in the early stages of treatment when intensive therapy is recommended.

(NB: It has been suggested that although Thiacetazone can cause vestibular dysfunction per se, it may accentuate Streptomycin toxicity by retarding its excretion.)

Resistance

We have no facilities for culture at present and we base a definition of resistance on W. Fox's recommendation. "— If at the end of six months the patient still has a positive sputum on smear examination then the organisms are almost certainly resistant— provided that the patient has been taking his medicament." Three of our patients are resistant by this criterion and as none of them can afford a trial on second line drugs such as an ethionamide/cycloserine combination and as our budget cannot stretch to this, their prognosis must be poor.

Exposure of the Tb bacilli to inadequate doses or non-continuous or too short courses of drugs encourages the emergence of resistant strains, and in an individual case every effort must be made to prevent this tragedy from occurring. The practice of prescribing Streptomycin (as in Streptomycin/penicillin combinations for injection) for undiagnosed infections in this country where Tb is so common must be deplored.

Types

All types of Tb are treated in the clinic. 69% have pulmonary Tb. The breakdown is as follows:

Pulmonary Tb	...	...	...	...	119
Pulmonary Tb x clinical gland Tb	...	...	...	...	8
Pulmonary Tb x Tb in other sites (bone, abdomen)...	...	...	...	...	6
Cervical gland Tb	...	...	...	...	34
Abdominal Tb	...	...	...	...	15
Tb meningitis	...	...	x	...	1
Tb Spine (Potts deformity)	...	...	...	...	1
Children 6 years and under					}
Symptomatic with positive skin test					
contacts with positive skin test					
					4
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Total					188

Age/Sex Distribution

The distribution suggests that males contract pulmonary Tb at an early age than females, possibly because they tend to travel more to crowded centres and to the Terai and beyond.

Treatment

Treatment is given free although patients are encouraged to make contributions towards the cost. Two regimes are favoured.

1. Intermittent streptomycin/Isoniazid at 14 mgm per lb. body weight/Vitamin B6 (after WHO study, Madras) for twelve months followed by at least six months isoniazid/Thiacetazone.
2. Daily streptomycin/Isoniazid/Thiacetazone for two months followed by *at least* eighteen months of isoniazid/Thiacetazone (after WHO trials, East Africa.)

Unfortunately the patient's circumstances, the distance he has to travel etc etc, sometimes force us to modify and curtail these regimes to some extent. A minimum regime for those patients who cannot attend for injections or those with uncomplicated cervical gland Tb is eighteen months of isoniazid/Thiacetazone.

Side-Effects

Side-effects in the intermittent Madras regime are minimal. The most notable toxic side-effect in the streptomycin/isoniazid/Thiacetazone regime is vestibular dysfunction.

Defaulting

This must be a thorn in the side for most Tb clinics and ours is no exception. One third of our patients have defaulted from other centres. We have considered age, sex and distance from house as possible precipitating factors but our figures discount them. Although the clinic has not operated for a full year these seem to be a seasonal factor. When the monsoon and rice planting started defaulting increased sharply. It is hard to understand why some patients suddenly default. We remain self critical and we are trying to find better ways to convince and impress the patients, but it may be that the apparent indifference is too deep to be uprooted in a few days or weeks. The discipline required to complete a long course of treatment and the surrender to a single medical advisor in a relationship of mutual trust are concepts alien to too many.

Summary

In the past thirty years the discovery of effective drugs and the success of Tb control programmes have dramatically altered the approach to the disease. We have outlined a programme now in operation in Kosi Zone which is based on two simple procedures -- direct BCG immunisation and examination of sputum smears. The execution of the programme is not so simple nor so easy, and we hope that these and subsequent papers will be of interest to those who are engaged in similar work elsewhere in Nepal.