

HIGH COVERAGE FOR LONG TERM FOLLOW-UP OF PATIENTS WITH SPINAL TUBERCULOSIS

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Summary. A total of 303 patients treated for spinal tuberculosis were systematically followed up for a period of 8 years. There were a total of 2243 attendances due during the period; the patients attended on the due date on 70.9% of these occasions, and after defaulter actions on 27.7% occasions. The coverage of 98.6% for an 5-year follow-up was obtained even though on 50% of these occasions, patients attended from a suburban area or from outside the city. An average of 13 visits per default were made and 0.9 letters were posted to retrieve those who did not attend on the due date. Thus, the high coverage obtained can be attributed to effective motivation of the patients by the clinic staff and intensive defaulter actions.

Introduction

A collaborative controlled clinical trial to assess the efficacy of short course chemotherapy in the treatment of spinal tuberculosis with or without surgery was undertaken by the Tuberculosis Research Centre, Madras. The results up to three years have been published¹. In all, 303 patients were admitted to the study and are being followed up at regular intervals. A very high coverage, more than 98%, in the long term follow-up of patients has been achieved even among patients residing outside Madras city and from other states. The efforts made to achieve this high coverage are described in this paper.

Material and Methods

Patients with radiologically active spinal tuberculosis, without paraplegia, involving the body from the first thoracic to the first sacral vertebrae were allocated at random to one of the following regimens:

(1) *Rad 6HR*. Radical excision of the diseased

vertebrae and bridging the gap with autologous bone graft plus chemotherapy with Isoniazid and Rifampicin given daily for 6 months.

(2) *Amb 6HR*. As in (1) but without surgery.

(3) *Amb 9HR*. As in (2) but with chemotherapy for 9 months.

Patients were residents of Madras city, its suburbs, other districts or other states. Patients were admitted to the study between May, 1975 and December, 1975. They were divided into three groups, according to their place of residence at the time of the check-up, viz. city, suburban and out-station patients, as given below:-

(a) *City*: Patients residing within the Corporation limits of the city of Madras (about 10 km radius from the Centre).

(b) *Suburban*: Patients residing beyond the City Corporation limits and within approximately 50 km radius from the Centre.

(c) *Out-station*: Patients residing beyond 50 km from the Centre (distance range 51-950 km).

The scheduled attendances for the follow-up of patients after chemotherapy were quarterly up to 2 years, half yearly up to 5 years and annually thereafter. For this analysis, annual assessments done for 8 years were taken into account. All patients were reminded about their check-up one week prior to the due date, by visit by a health visitor for the city patients and letter by a social worker for suburban and outstation patients.

At each attendance at the Centre, the patients were motivated by the doctor, social worker, clinic nurse and health visitor who stressed the need for regular follow-up. For city patients, visits by health visitors were made once a month for the first 5 years and once in three months thereafter, to find out whether the patient continued to reside at the same

address, trace the new address if patient had shifted, and to check up on the well-being of the patients. For suburban and outstation patients, letters were posted by social workers, enclosing self-addressed post cards; patients were instructed to post back the card after signing it.

If the patients failed to attend for the check up on the appointed date, the following defaulter actions were taken :

For city patients, a health visitor visited the patient's house initially and if the attempt failed, a social worker made a visit to find out the reason for default. Subsequent motivation, if required, was done along with health education. Visits to the patient's workspot, other contact places, etc. were made by the social worker, whenever required. If still unsuccessful, a visit by a doctor was made in addition to the routine defaulter actions; if the default was due to medical reasons, a doctor visited the patient for necessary assessment. Efforts were made to contact the patient over the telephone, whenever possible. For suburban and outstation patients and for city patients who were unwilling for home visits for various sociological reasons (such as 'newly married', 'marriageable age', etc.) letters were posted by the social worker. If there was no response to letters, a letter was sent to the patient from the surgeon who had operated upon him or her. Whenever required, visits were made by a social worker, sometimes accompanied by a doctor. Despite making all these efforts, if the patient continued to be a defaulter, a questionnaire was sent (from 72nd monthly examination onwards), to be filled up by the patient and sent back by post, or given to a social worker to fill up during a home visit. The questionnaire contained questions regarding

general health, back pain, difficulty in walking, ability to undertake routine activities and additional chemotherapy received elsewhere.

Results

The mean age on admission was 23.7 years (range: 18 months to 60 years); 47% of the patients were male. Twenty-three percent were illiterates and 44% had education up to primary school level. Fortyfive percent of the patients were employed, and of these 52% were unskilled labourers [agriculturists, daily wage earners, etc.]. The family income was less than Rs. 300 per month in 56% of the patients.

Regularity of attendances : Table 1 gives the total number of attendances due for the annual check-ups for 8 years (2243 : 1125 city; 503 suburban and 615 out-station). On 1590 (70.9%) occasions (75.8% city; 68.2% suburban; 64.1% out-station), the patients attended on the due date (punctual attendance). On 143 (6.4%) occasions (8.7% city; 5.2% suburban; 3.1% out-station), the patients attended within 6 days of the due date. The corresponding figures were 374 (16.7%) for 7 to 30 days late (13.2% city; 20.7% suburban; 19.7% out-station) and 105 (4.7%) for late beyond a month (1.5% city; 4.2% suburban; 10.9% out-station).

One-fourth (25.0%) of the patients attended on the due date for every one of the eight annual check-ups, one-third (33.2%) defaulted on only one or two occasions, - 28.0% defaulted on three or four occasions and the remaining (13.8%) defaulted on five or more occasions.

Defaulter actions : Over the 8 year period, 228 patients defaulted on 653 (29.1%) occasions (24.2%

Table 1 Patient attendances during the 8-year-period, according to place of residence

	City		Suburban		Outstation		Total	
	No.	%	No.	%	No.	%	No.	%
No. of attendances due	1125	100	503	100	615	100	2243	100
Punctual attendances	853	75.8	343	68.2	394	64.1	1590	70.9
No. of defaults	272	24.2	160	31.8	221	35.9	653	29.1
Attended late by 1-6 days	98	8.7	26	5.2	19	3.1	143	6.4
" 7-30 days	149	13.2	104	20.7	121	19.7	374	16.7
" > 30 days	17	1.5	21	4.2	67	10.9	105	4.7
Missed	8	0.7	9	1.8	14	2.3	31	1.4

Table 2 Regularity of attendances for follow-up year by year

		Year of follow up							
		1st	2nd	3rd	4th	5th	6th	7th	8th
Total patients in analysis		303	291	288	285	281	277	276	273
Death		9	3	3	4	4	1	3	1
Discharge		3*	0	0	0	0	0	0	0
Due for follow-up		291	288	285	281	277	276	273	272
Attended punctually	No.	236	226	223	204	188	175	169	169
	%	81.1	78.5	78.2	72.6	67.9	63.4	61.9	62.1
Attended after efforts	No.	52	61	58	71	85	97	98	100
	%	17.9	21.2	20.4	25.3	30.7	3.51	35.9	36.8
Missed	No.	3	1	4	6	4	4	6	3
	%	1.0	0.4	1.4	2.1	1.4	1.4	2.2	1.1
Questionnaires received**							3	1	7

* All in the first month of treatment.

**Questionnaires were sent from the 6th year of follow-up.

city; 31.8% suburban; 35.9% outstation), for which defaulter actions were taken. Even though there was an increasing trend in the number of defaulters, with effective defaulter actions, there was no increase in the number of patients who missed attending for a due check-up (Table 2).

Considering the type of defaulter action (Table 3), 802 visits [average : 1.2 total : 2.1 city; 0.8 suburban; 0.4 outstation) were made to patients or contacts, by health visitor, social worker and/or doctor; 25 outstation visits were made covering a maximum distance of 800 km, to and fro. In addition to these visits, 591 letters (average 0.9 total : 0.2 city; 1.0 suburban; 1.6 out-station) were posted and 51 phone calls (13 city, 17 suburban, 21 out-station. to local contacts) were made.

The coverage was very high throughout, ranging from 97.8% to 99.6% (mean 98.6%) for each of the annual examinations over the 8 year period.

In all, 25 questionnaires (3 city; 6 suburban: 16 outstation) were sent. On 12 occasions, patients attended after receiving the questionnaires; 5 questionnaires were filled up by patient/social worker during visits and 6 filled up questionnaires were received by post. On one occasion, patient attended late and on another occasion, monthly examination was done at the Centre's clinic at Madurai, which

Table 3 Types of defaulter actions according to place of residence

Defaulter action	City	Sub-urban	Out-station	Total
Total no. of defaults	272	160	221	653
No. of visits made	583 (2.1)*	120 (0.8)	99 (0.4)	802 (1.2)
No. of letters written	62 (0.2)	162 (1.0)	367 (1.6)	591 (0.9)
No. of phone calls made	13	17	21	51
No. of questionnaires sent	3	6	16	25

*Mean visits made/letters written per default are given within parentheses.

was close to the patient's residence.

On 31 occasions, 17 patients missed their due checkups (city : 8 occasions-4 patients; suburban : 9 occasions-4 patients and outstation : 14 occasions-9 patients). Out of 303 patients, only 17 (5.6%) missed one or more attendances-9 on one occasion, 4 on two occasions and 2 each on three and four occasions. Thus, 31(1.4%) of a total of 2243 attendances were missed.

Three of the 17 patients who failed to attend were considered lost for follow-up. All three were females. One patient was 'lost' after the 48th monthly examination; her whereabouts were not known and she could not be traced. The second patient, staying 50km away from Madras, could not attend after the 60th monthly examination as her husband was very unto-operative, and could not be convinced about the need for patient's periodic check-up. The third patient got married and migrated to Delhi. She did not want her husband or parents-in-law to know about her illness and she could not attend after the 72nd monthly examination.

Discussion

The results presented here show a very high coverage for long-term (8 years) follow-up of patients who were treated for spinal tuberculosis. The physical suffering and disability; caused by the disease and the visible manifestations like gibbus, abscess, sinus, etc. experienced by the spinal tuberculosis patients could have contributed as a motivating factor to the compliance. The coverage for five-year follow-up in patients with pulmonary tuberculosis at our Centre has been 91% to 95% in different published studies^{2,3,4}. These patients resided within a 15 km. radius from the centre and were aged 12 years or more. In the spine tuberculosis study, 33% of the patients were under 14 years. Fifty percent of the patients were from outside the city, including other states. Ramachandran et al⁵ have reported the findings of long-term status. at one time point between 4 years and 8 years, of 119 children who were treated for tuberculous meningitis. Of 102 patients eligible for follow-up, 2 (1.7%) patients could not be traced, while information was obtained through mailed questionnaire for 2 (1.7%) others. The remaining 98 (82.4%) patients were seen at the clinic. The long-term status findings were available for 100 of 102 (98%) patients. in the present study out of 303 patients, 3 (1.0%) were discharged from the study in the first month of treatment. One (0.3%) could not be traced and 2 (0.7%) refused to attend. Thus, only 3 patients were lost to follow-up in this study. The coverage for 8th annual check-up was 269 of 272 (98.9%) patients.

The present study of spinal tuberculosis shows

that effective motivation, personal attention and intensive defaulter actions by health personnel could be of great value in achieving high coverage for long-term follow-up.

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