ROUTINE FOLLOW-UP OF PATIENTS WITH TREATED PULMONARY TUBERCULOSIS

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SYNOPSIS

A retrospective study was made of the rate of relapse amongst 341 patients with treated pulmonary tuberculosis on follow-up for five years. All patients received a total of 18 to 24 months of chemotherapy with the primary antituberculous drugs and were divided into two groups—regular and irregular (with chemotherapy). In the "regular" group the average rate of relapse was less than one per cent per year as compared with a three-fold increase in the "irregular ' group. In none of the relapses in the "regular" group was co-operation in the taking of drugs noted as good. In view of the low yield, it is concluded that the practice of routine follow-up of adequately treated patients with pulmonary tuberculosis is not necessary and should be abandoned.

INTRODUCTION

Tuberculosis is a disease well known for its relapsing nature. In the prechemotherapeutic era, the frequency of relapse in patients considered to have reached an "inactive" or "arrested" status was high. Stephens (1941) in a follow-up study reported a 5-year relapse rate of 36·5 per cent whilst Mitchell (1966) found that 28 per cent of patients with initially advanced disease relapsed after having reached an "inactive" status. Long term follow-up of patients with inactive pulmonary tuberculosis was recommended and became an established practice. However, following the advent of effective anti-tuberculous chemotherapy, the necessity and productivity of the practice of continued supervision came to be questioned. In 1966 Grzybowski and associates reported a relapse rate of 27 per cent in patients whose disease became inactive before the use of chemotherapy as compared with 0·8 per cent in those who had received 18 months of chemotherapy. Routine follow-up of patients was considered unnecessary (East African/British Medical Research Council 5th thiacetazone investigation, 1973, Singapore Tuberculosis Services/ Brompton Hospital/British Medical Research Council Investigation 2nd report, 1974) and not justified (Edsall and Collins, 1972, 1973; Bailey *et al*, 1973; Stead and Jurgens 1973). This paper presents a retrospective study of the rate of relapse during a 5 year follow-up of patients with treated pulmonary tuberculosis seen in the Unit in Tan Tock Seng Hospital.

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MATERIALS AND METHODS

The records of all patients who were registered for treatment for tuberculosis from 1st January 1966 to 31st December 1966 were analysed. The treatment prescribed for most of the patients consisted of daily Streptomycin 3/4 Gm. or 1 Gm. with isoniazid (INH) 300 mg. and paraaminosalicylic acid (PAS) 10 Gms. for an initial period of four to five months, followed by PAS and INH daily. The total duration of chemotherapy was between 18 to 24 months. Patients were considered to have achieved an inactive status on completion of chemotherapy. Except for the ill patients and the majority of those with a positive sputum smear for acid fast bacilli, who were hospitalised for about three to four months, treatment was ambulatory throughout. Ambulatory treatment was in most of the cases unsupervised.

Patients who attended regularly for treatment were regarded as belonging to the "regular" category. Those whose attendance was irregular were categorised as "irregular". All patients, however, received chemotherapy either continuously (in the "regular" group) or non-continuously (in the "irregular" group) for a total duration of 18 to 24 months. It was not possible to obtain a group who received less than 18 months' chemotherapy as it was the practice to continue drugs for a total duration of at least 18 months once the patient is seen following a period of default.

Disease classification was done according to the National Tuberculosis Classification, 1950; radiological relapse may or may not be associated with bacteriological relapse which was defined as the recurrence of Mycobacterium tuberculosis on direct smears or culture. The relapses detected only applied to those patients who came for follow-up. It is, however, likely that should relapse occur in those who failed to attend for follow-up and who were detected by other clinics, referral to the Unit would have been made.

The follow-up consisted of a chest radiograph at six to twelve monthly intervals and of sputum examination as well in the majority of cases. A total of 567 patients were registered. Out of this, 226 were omitted from the analysis (Table I). The non-respiratory forms of tuberculosis were excluded from the study due to the difficulty of detecting early relapse. This report is based on the records of the remaining 341 patients with treated pulmonary tuberculosis.

TABLE I
BREAKDOWN OF 226 CASES OMITTED FROM ANALYSIS

	No.
Deaths from various causes	70
Defaulted treatment	56
Non-respiratory tuberculosis	27
Transferred to another clinic	24
Previous chemotherapy given	18
Resistant to primary drugs	6
Missing case sheets	25
TOTAL	226

RESULTS

Table I shows the breakdown of the 226 cases that were excluded from the analysis. It is noted that 70 were due to deaths from various causes whilst 56 (10 per cent) permanently defaulted treatment. Only six patients had pretreatment organisms resistant to two or more of the primary antituberculous drugs and of these two had niacin negative organisms.

The composition of the 341 patients in the study is presented in Table II. Of these, 218 (63 per cent) were sputum positive for acid fast bacilli either on direct smears or cultures. 330 patients on follow-up did not relapse, and of these 210 (63 per cent) were initially bacteriologically positive. This is the same percentage as in those who relapsed (seven out of 11 patients). Seven patients who relapsed belonged to the "regular" chemotherapy group. Analysis of their records reveals that four were not taking their drugs regularly, two had been given only PAS and INH and one had his treatment interrupted due to hypersensitivity reactions. Of the 11 relapses, seven were asymptomatic when detected radiologically whilst the remaining four presented with respiratory symptoms.

TABLE II
DATA ON TREATED PATIENTS IN THE FOLLOW-UP CLINIC

Extent of Disease	Initial No. of Patients	No. of patients on follow-up period in years			
		1 — 2	2 — 3	3 — 4	>4
Minimal	117	92	80	64	34
Moderately Advanced	122	107	86	69	41
Far Advanced	63	57	48	33	23
Miliary	1	1	1	1	0
Pleural Effusion	18	16	12	11	7
Pulmonary Tuberculosis with Diabetes Mellitus	20	17	17	15	7
TOTAL	341	290	244	193	112
Chemotherapy					
Regular	287	248	218	178	105
Irregular	54	42	26	15	7

TABLE III

RELAPSES AMONGST PATIENTS IN THE FOLLOW-UP CLINIC

Extent of Disease	Follow-up period in years				
	<1	1 — 2	2 — 3	3 — 4	>4
Minimal	1	1	0	1	0
Moderately Advanced	1	3	0	0	1
Far Advanced	0	2	1	0	0
TOTAL	2	6	1	1	1
Chemotherapy					
Regular	2	4	0	1	0
Irregular	0	2	1	0	1

TABLE IV

RELAPSE RELATED TO TIME AND CHEMOTHERAPY

Time of Relapse	Chemotherapy					
	Regular			Irregular		
	No. at Risk	No. Relapse	%	No. at Risk	No. Relapse	%
<1 yr	287	2	0·7	54	0	0
1—2 yrs	248	4	1·6	42	2	4·8
2—3 yrs	218	0	0	26	1	3·8
3—4 yrs	178	1	0·6	15	0	0
>4 yrs	105	0	0	7	1	14·3
TOTAL	287	7	2·4	54	4	7·4

The relapses in relation to time, extent of disease and regularity of chemotherapy are shown in Tables III and IV. It is noted that the "irregular" group had a three-fold increase in the rate of relapse when compared with the "regular" category.

DISCUSSION

The effectiveness of antituberculous chemotherapy has brought into question the necessity and desirability of routine follow-up of patients with adequately treated pulmonary tuberculosis. Edsall and Collins, 1973, found a reactivation rate after adequate chemotherapy of less than 1 per cent, and Stead and Jurgens, 1973, reviewing the records of 530 patients found only three relapses amongst 372 patients who had remained well for three years after receiving chemotherapy for 18 months or more.

The present retrospective study confirms the findings of the American authors. In the group considered to have "regular" chemotherapy an average relapse rate of less than 1 per cent per year was found. It is noted that the initial extent of the disease or the coexistence of diabetes mellitus did not appear to increase the risk of relapse after adequate chemotherapy. It would be of interest to study those in whom factors considered to increase the risk of relapse such as continuing steroid therapy or silicosis were present.

From the present study we would agree with Edsall and Collins, 1973, who stated that "the time has come when patients with tuberculosis should be discharged from supervision when a course of adequate treatment has been completed." The practice of routine follow-up of such cases should be abandoned so that the workload of the clinic could be decreased and more attention given to those patients still under active treatment.

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