

PULMONARY TUBERCULOSIS IN THE URBAN BANTU: A PILOT STUDY OF 115 CASES

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Current forms of therapy for pulmonary tuberculosis have led to great changes in the handling of this disease.^{1,2} With the desperate shortage of hospital beds available for non-Europeans, and the ever-increasing numbers of patients suffering from the disease, it is now becoming customary to hospitalize patients for as short a period as possible, and then to return them to their local authorities for domiciliary management.²⁻⁴ With this in mind, we undertook the study of a small group of adult non-European patients from the time they entered the hospital up to the time of their subsequent management as outpatients.

METHOD

For purposes of this pilot study, approximately 100 random cases were chosen from one local authority (Johannesburg). Hospital treatment was undertaken in tuberculosis hospitals near Johannesburg by one of us (D.L.O.). These hospitals were Rose Chest, Knights Chest, and East Rand Chest Hospitals; and SANTA centre at Modder Bee. After discharge from hospital, the patients were referred back to the Johannesburg municipal tuberculosis clinics, where one of us (P.S.) was in charge of their treatment. These clinics are situated in all the non-European municipal townships of Johannesburg.

On admission to hospital, patients were classified into groups determined by the severity of their X-ray appearances. A modified N.A.P.T. classification was used. X-rays were assessed by us conjointly, together with other staff members of the hospitals concerned. Presence or absence of tubercle bacilli in the sputum was recorded in all cases (direct examination). Sputa were only regarded as negative, if 3 consecutive 24-hour specimens were free of tubercle bacilli. A similar assessment was made on discharge from hospital. On presenting himself at the clinic, the patient was similarly classified.

The basic hospital treatment was streptomycin, 1 g. daily for 3 weeks and then 1 g. 3 times weekly. The dose of isonicotinic acid hydrazide (INAH) was 8 mg. per kg. of body weight daily. Other forms of therapy were also used when necessary. In some cases, streptomycin was replaced by para-amino salicylic acid (PAS), 15-20 g. per day. At the clinic we attempted to use mainly PAS and INAH because many of the patients were at work, and it was difficult for them to return for repeated injections. Routine domiciliary visits to clinic patients were carried out by Johannesburg municipal tuberculosis medical officers.

Radiological Classification

The patients were classified according to the radiological findings in their respective cases as follows: Grade 0=no demonstrable disease; Grade 1=minimal localized (unilateral) infiltration; Grade 2=bilateral infiltration with no cavities, or unilateral infiltration localized to a single lobe with a cavity not exceeding a diameter of 1 cm.; Grade 3=

bilateral disease affecting at least 3 lobes with cavitation; Grade 4=gross widespread bilateral cavitating disease.

Age and Sex Distribution

As can be seen from the diagram in Fig. 1, we encountered mostly males between the ages of 20 and 50 years. This reflects

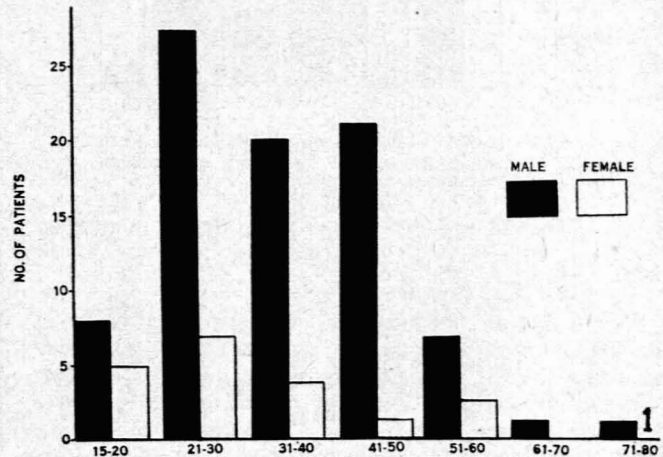


Fig. 1. Analysis of 105 cases showing age and sex distribution. (Ages of 6 males and 4 females not obtained.)

a typical labouring community existing in industrialized urban areas.

RESULTS

1. Duration of Stay in Hospital

An analysis of the 115 cases according to the duration of their stay in hospital, which ranged from 0 to 20 months, with an average of 6.6 months, is illustrated in Fig. 2.

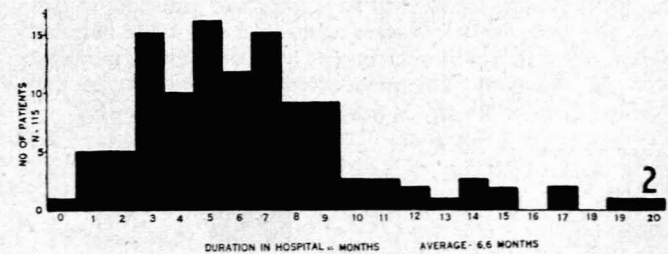


Fig. 2. Analysis of 115 cases showing duration of stay in hospital (months).

2. Course in Hospital

Most of the cases were classified, according to the severity of their condition, in groups 2 and 3 (Fig. 3). The percentage of cases with positive sputum increased with the severity of the disease. Fig. 3 also illustrates how the patients progressed during their stay in hospital. On discharge, 100% of group 1 cases, 97.8% of group 2 cases and 77.5% of cases in groups

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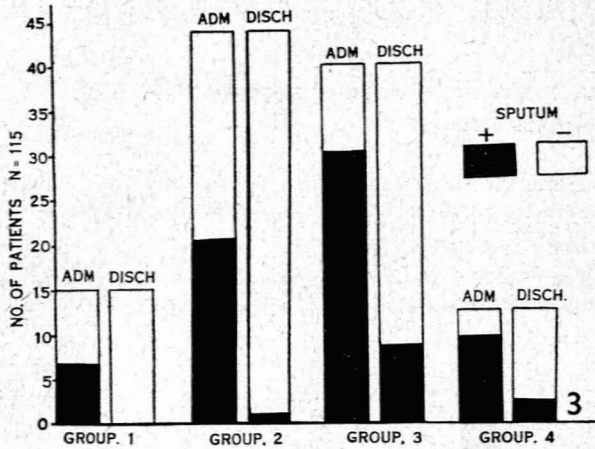


Fig. 3. Analysis of 115 cases showing classification according to grade of disease and result of sputum examination on admission to hospital and on discharge.

3 and 4 showed negative results on examination of their sputa.

3. Discharge from Hospital

We felt that this was, perhaps, the most critical period in the management of a patient suffering from pulmonary tuberculosis. On discharge from hospital all cases with details of their hospital stay, were referred to their respective local authority health departments. Thus every Johannesburg patient was told to report immediately to the tuberculosis clinic in his area, because he was not yet cured, and further therapy would be necessary.

Of the total of 115 cases who left hospital, only 76 reappeared at the clinic; 39 cases (33.8%) were therefore 'lost'. In order to explain why this should have happened, we analysed all the details pertaining to these cases.

Irregular Discharges. Hospital discharges were divided into 2 types: normal and 'irregular'. There were 22 (25.4%) 'irregular' discharges; 16 left hospital on their own initiative, and there were 6 'disciplinary' discharges; the latter was only resorted to in cases of extreme misbehaviour. Of the 22 cases, 11 were thought to have improved clinically at the time they left hospital; 7 were unchanged and 4 had become worse. Their stay in hospital ranged between 1 and 20 months, with an average of 7 months. (Note the similarity to the average duration of stay in hospital of the whole group.)

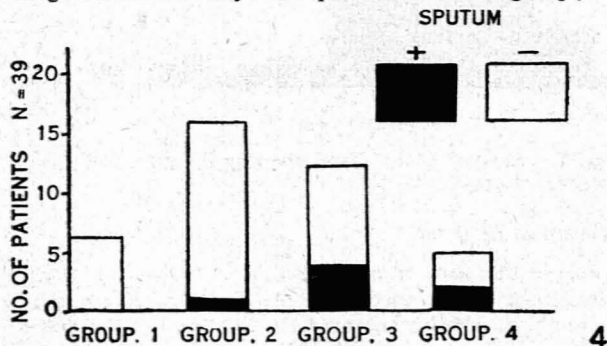


Fig. 4. Analysis of 39 cases showing disease classification and sputum results of discharged hospital cases who failed to report to clinic.

Of these 22 cases, 10 presented themselves at the clinic for further treatment, but 12 (54.5%) were never seen again. Of the 10 cases who attended the clinic regularly, 2 broke down and were readmitted to hospital, and 2 were found to be psychotics and were dealt with accordingly. (It is sad to note that both of these cases were 'disciplinary' discharges).

Fig. 4 shows the severity of the cases who failed to return to the clinic, together with their sputa results. There were 7 who had positive sputa. Of these 7 cases, only 2 were discharged regularly.

4. Course at the Clinic

Table 1 shows the number of cases and their classification

TABLE I. CLINICAL CLASSIFICATION OF PATIENTS AT CLINIC COMPARED WITH THEIR STATE IN HOSPITAL

		Clinic Grades					
		0	1	2	3	4	
Hospital Grades	0	0	0	0	0	0	0
	1	5	3	0	0	0	8
	2	8	14	4	1	0	27
	3	0	14	9	5	0	28
	4	1	0	4	2	1	8
Total		14	31	17	8	1	

into groups as seen at the clinic: it also shows the clinical state of the patients on discharge from hospital. These figures show that 80% ($\pm 12\%$) of the cases improved in health under clinic supervision. An analysis of the sputa results of the patients attending clinic is illustrated in Fig. 5. Unfortunately there were 16 cases (22.5%) whose sputa results were not recorded. This is due to the repeated failure of the patients to return sputum bottles. There were, therefore, 10 cases with positive sputum.

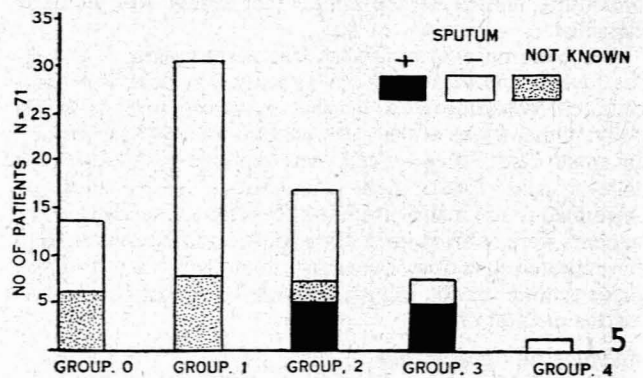


Fig. 5. Analysis of 71 cases who attended the clinic showing results of sputum examinations.

As can be seen from Table 1, only 71 cases of the group were treated at the clinic. Five cases were disposed of in the following manner: 3 were transferred to another local authority, 1 was admitted to Sterkfontein Mental Hospital and 1 was erroneously discharged. This case was thought not

to have had tuberculosis in hospital, but on re-examination his sputum was found positive. There were, in addition, the 39 cases mentioned above who failed to return to the clinic. Of our group of 71 cases 20 were observed at the clinic for 6 months, 49 for 7-12 months and 2 for 13-24 months.

5. Clinical State of Out-patients

At the time of writing, 57 cases were in good health and were working. One case was chronically ill. Twelve cases had complications (1 had chronic congestive cardiac failure, 7 were pulmonary cripples, 1 had peripheral neuritis, and 3 were alcoholics). There was 1 death (cause of death not ascertained).

Five cases retrogressed during this period, and had to be readmitted to hospital. Of these, 4 had positive sputa (2 of these had previously left hospital without permission).

As noted above (Fig. 5), of this group, there were 10 patients with positive sputum. Of these, 3 were in reasonable health, 3 were chronically ill, and there were 4 cases of breakdown who were readmitted to hospital.

The therapy used at the clinic was as follows: PAS and INAH: 35 patients. Streptomycin and INAH: 23 patients. Other combinations: 13 patients.

DISCUSSION

The striking feature of this study was the very large proportion of patients who failed to report to the clinic after discharge from hospital. Among this group was a significant number of patients with positive sputum, and they were thus free to spread infection. In general, chronic infective cases are now increasing, and there should be a campaign against promiscuous spitting.^{1,5} There are many reasons for this failure to continue treatment. Some patients think that when they have left hospital, they are cured. This could well be obviated by better education.^{2,6} Many patients are illiterate and belong to the labouring class. Very little attention is paid to this highly important aspect of the patient's management. We feel that education of a tuberculous patient should, perhaps, play as great a part in his treatment as his chemotherapy. It is often difficult to get a patient to appreciate the fact that he is suffering from a chronic disease which will have to be watched for an indefinite period. When dealing with an under-educated portion of the population it cannot be too strongly stressed how important it is that the patient should fully understand the implications of his disease.

There are other causes too for this break in the chain of treatment. Patients falling in this category change their addresses very frequently, and are often untraceable. They often even change their identities. One of the most serious difficulties encountered is that tuberculosis often affects the chief breadwinner of a family. Social relief is inadequate at present, and the patient cannot face with equanimity the prospect of a starving family.³ When an African has to go off ill for more than a week, he almost certainly loses his job, and the urgent necessity to return to work often compels the patient to cut short his treatment and to avoid detection by all possible means. The process of rehabilitation is laborious and the arrested tuberculous patient usually has many months to wait before he is re-employed.

Another reason for the large number of patients who failed

to report for out-patient therapy is the inadequate liaison between hospital and local authority. It is usually left for the patient to come to the clinic on his own initiative. We should like to make an urgent plea for better cooperation between tuberculosis hospitals and clinics. A uniform method of record keeping throughout the tuberculosis services, for example, would be of inestimable value.²

The number of irregular discharges, we feel, is much too high. Disciplinary discharges are only resorted to in extreme cases of alcoholism, in gross disobedience, or when patients create a disturbance and endanger the well-being of others. Many of the problems in these cases are of a socio-economic nature and beyond the scope and control of the medical authorities. The problem of the unmanageable patient in tuberculosis institutions however, is world wide, and is not easy to overcome in any social milieu.¹⁻³ A short hospital stay in conjunction with adequate subsequent out-patient management is probably the best form of treatment under present circumstances, and enables the best possible use to be made of the limited available hospital beds.^{2-4,7}

The present series is too small a group on which to base valid statistical conclusions, and we should like to recommend that large-scale follow-up studies of this nature be made in all large centres. Only then shall we know the true value of our therapeutic programmes.

SUMMARY

1. 115 cases of pulmonary tuberculosis affecting non-Europeans in Johannesburg were studied from the time of their admission to hospital until their return to out-patient clinics. Their progress at the clinic was assessed.

2. Special mention is made of the large number of cases lost after discharge from hospital, and possible methods of remedy.

3. The value of short-term hospitalization, coupled with adequate subsequent out-patient supervision for these cases, is shown.

4. It is suggested that further large-scale studies of this nature should be made.

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Note: Since the completion of this study, the Johannesburg city health department has initiated a compulsory mass miniature radiographic service at the municipal non-European affairs department. Every adult male seeking work in the Johannesburg municipal area is compelled to submit to X-ray examination before acquiring permission to work. In our early experience, some patients who initially absconded from hospital, have been retraced from this source. It is hoped that in the future, large numbers of these patients will thus be traceable. It is also hoped to extend this service to non-European adult female work-seekers in the near future.

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