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RECOMMENDATIONS OF THE WORKSHOP ON NATIONAL TB CONTROL PROGRAMME

A workshop on National TB Control Programme was held at Suraj Kund in the month of September, 1991 in which TB experts in the country, representatives of states/voluntary organizations, WHO, ICMR and officials from Directorate General of Health Services/Ministry of Health & Family Welfare participated. Various issues relating to National TB Programme including the bottlenecks in its implementation at State/District/PHI levels were discussed. The recommendations made at the Workshop are as under :

National TB Control Programme

There is no apparent need to change the integrated nature of NTP, keeping in view the modest success already achieved and the increasing acceptability of the fact that there is no alternative to integration. Instead, both short term and long term steps should be taken to expand the areas of integration and strengthen the integrated activities, starting from the district level, because at present integration is functional largely at the periphery.

Steps should be taken to accord NTP a high priority among the national health programmes.

Case-finding

After reviewing the contribution made by multi-purpose workers (MPW) at the PHC level, specially in case-finding, the Group recommended that the initial programme of male multi purpose workers undertaking this activity should be continued. However, it was felt that strengthening of the laboratory component at the Primary Health Centre level is essential to make this contribution more meaningful. Therefore, immediate steps are needed to take up the training activity for rural laboratory technicians in order to strengthen the laboratory services at peripheral level.

The Group unanimously recommended that case-finding as a whole needs to be stepped up. However, the strategy for doing so in urban and metropolitan cities has to be different compared with the rural areas. While MPWs could step up the case-finding in the rural areas, for cities the focus has to be on slums, *bastis* and outreach new settlements.

In order that case-finding and later case-holding in the cities is successful, it is imperative that all the general hospitals, dispensaries and other institutions work in an organised and co-ordinated manner so that the TB services can be rendered efficiently. In addition, voluntary organizations can be organised to devote particular attention to the slums, *bastis* and outreach settlements as a part of co-ordinated programme. It was mentioned that the government has a scheme of establishing Community Health Centres with adequate staff and other facilities. These Community Health Centres could assist in augmenting case-finding with the use of X-ray facilities since these would be more conveniently situated between the District TB Centre and Primary Health Centres. However, till these Community Health Centres are fully operational, their use for stepping up case-finding cannot be the matter of recommendation.

Case-holding

The crucial importance of adequate availability of anti-TB drugs for making treatment and case-holding meaningful is obvious. It was recommended that steps should be taken to ensure adequate supplies of drugs not only in District TB Centres but also in the PHIs.

The number of drug regimens included in the National Chemotherapy Policy was sought to be reduced to a minimum in order to avoid confusion. The Group recommended the adoption of the following drug regimens :

Conventional Therapy (where Short Course Chemotherapy is not introduced) :

2SHT/10HT – For sputum positive and seriously ill patients
S (Streptomyin)-0.75 gm.; H (Isoniazid)-300 mg.; T (Thioacetazone) - 150 mg daily).

12HT – For smear negative but radiologically positive case
(H (Isoniazid) - 300 mg plus T (Thioacetazone) - 150 mg daily).

If the patient cannot tolerate Thioacetazone, this drug should be replaced by Ethambutol (E) : 800 mg daily.

Short Course Chemotherapy

1. 2 EHRZ/6 HT
2. 2 EHRZ/4 H_2R_2 (bi-weekly H-600-700 mg with Vitamin B_6 (Pyridoxine 10 mg, R - 600 mg in continuation phase).

R (Rifampicin) - >50 kg = 600 mg, ≥ 50 kg = 450 mg, H (Isoniazid) - 300 mg, E (Ethambutol) - 800 mg, Z (Pyrazinamide) - 1.5 g, T (Thioacetazone) - 150 mg.

(If the patient cannot tolerate 'T' then 'T' to be replaced by 'E')

The Group underlined the fact that the intention is to introduce short course chemotherapy all over the country as soon as possible. The conventional regimen will be used till such time the short course chemotherapy covers the entire country.

It was further recommended that all sputum positive cases should be given short course chemotherapy. The sputum negative patients should be given conventional regimen.

Case-holding capability needs considerable strengthening. For this purpose, operational studies are needed, specially focusing on drug distribution and taking of drug defaulter actions. It was also felt that in this area the NGOs can play an important role.

Management of the programme

The importance of supervision and monitoring was stressed. It was pointed out that these two have to be done at all the levels. At present programme monitoring is being done by National TB Institute, Bangalore from the quarterly reports received from the states. This could be continued. But in addition, states have to take up this responsibility, leading to the establishment of a strong monitoring cell which can be a part of a Monitoring Section for all the health programmes. It was recommended that National TB Institute should explore the need to train staff in supervision as well as monitoring. To strengthen central monitoring and supervision, the regional health organization may be involved to improve supervision and monitoring at regional level.

Training

The training activities at the National TB Institute, Bangaore must be continued and modified in the light of the various recommendations being made. However, to reduce the training load of a big country like India, it was strongly recommended that State TB Demonstration Centres should take up the re-training and reorientation of their personnel.

Health Education

The importance of health education was realised by everyone. It was also agreed that the responsibility of health education at the district level too is that of the District TB Officer. However, health education has to be co-ordinated and done in collaboration with health education bureaus, voluntary organizations and School Health Education, etc. US aided health education project undertaken by TB Association of India recently in 250 districts in the country was quite encouraging. In the light of the experience, it was recommended that the pattern of its work needs some modification. The remaining districts in the country can be implemented in collaboration with the agencies concerned according to the modified pattern. In this connection, better use of the electronic media was suggested.

Repeat Survey

Noting that the available data on disease prevalence and incidence in the country are quite old, it was stressed that the data have become irrelevant. The Group realised that the need for up-to-date data would be felt more strongly as time passes. The possibility of conducting nation wide surveys of a simpler kind is being explored by some research institutions and National TB Institute, Bangalore. When the methodology becomes suitable, the question of repeating the nation wide survey can be re-examined.

Target Setting

In view of the experience gained from target setting, especially in case-finding since 1982, the Group strongly recommended that the practice of target setting should be continued with some modification, if necessary.

Voluntary Organizations

It was strongly felt that the time had come for voluntary organizations to become partners with the Govt. in making the National TB Programme successful. Besides health education, they could greatly help in case-finding especially in the city slums and case-holding by establishing Drug Distribution Centres from where the patients could collect drugs most conveniently. It was also recognised that besides the TB Association of India and its affiliated state organizations, there are other voluntary agencies which are doing anti-TB work. The responsibility for bringing the other small voluntary organizations under the umbrella of NGOs should be taken by TB Association of India. The process of establishing closer communication, collaboration and co-ordination with the NGOs should be taken up as soon as possible.

Women and AIDS

Of the current global estimate of 10 million persons infected with HIV, 3 million are women, 1 million children and 6 million men. A recent study shows that the efficiency of infection passing from women to men is lower than the other way round, which places females at a far greater risk of contracting HIV infection and adding sharply to the total pool of infected persons.

In India, prostitutes have been recognised as a risk group and their surveillance in Bombay has shown a much higher prevalence of HIV infection, compared with the overall prevalence of around 1% in the various risk groups combined. The significance of the higher transmission from males to females in this context has to be investigated, as also the observations that 20 to 50% of infants born to HIV infected mothers get infected during birth or shortly after, through breast feeding.

Gene of Drug Resistance

A gene that makes tubercle bacillus resistant to INH has been identified. A breakthrough could perhaps be expected in the problem of increasing multi-drug resistant bacteria and the sharp increase in the number of new cases of tuberculosis occurring due to the AIDS epidemic. The ability to ensure appropriate use of the currently available anti-tuberculosis drugs in the developing countries, in order to check the emergence of drug resistance in the first instance, remains open to question. The prospect of developing new drugs and vaccines, although promising, cannot be expected to provide the right answer to the problem of drug resistance either. Genetic engineering may provide the eagerly looked for alternative.

TAI

TECHNICAL COMMITTEE'S RECOMMENDATIONS

A meeting of the Standing Technical Committee of the Association was held on 20th April, 1987, with Dr. P.A. Deshmukh in the chair. Some of the important decisions and recommendations of the Committee at this meeting are :

1. The Committee discussed the various points raised in the Presidential Address of Dr. S.P. Gupta at the 41st National Conference and decided that the following recommendations may be forwarded to the Government :

(i) The para-medical staff of the primary health centres be trained properly and effective supervision of their work be provided to improve the quality of sputum examination. Vehicle should be placed at the disposal of the staff of the District Tuberculosis Centre for visits to the P.H.I.s

(ii) The radiological examinations should be used as a screening procedure to identify the patients with abnormal shadows in their lungs, wherever possible. Such patients can then be subjected to bacteriologicai investigations to clinch the diagnosis.

(iii) In large towns and cities, where a large number of patients suffering from cough visit the General Hospitals, it will immensely help the case-finding programme under the NTP if photofluorography facilities are made available. Adequate diagnostic facilities including examination for sputum must also be made available at all the general hospitals.

(iv) One additional District TB Centre should be provided in bigger districts.

(v) An additional multi-purpose laboratory technician, should be posted, especially in primary health centres with a heavy work-load. It would not only considerably augment TB case detection activity, but also help to improve the quality of general health services. Similarly, if all the multi-purpose health workers are actively involved in motivation of patients, their families and the community to take regular treatment for the prescribed period the defaulter rate may also be substantially reduced. What is actually required is the strengthening of general health services and their exercising effective supervision to ensure that the medical and para-medical personnel perform the task assigned to them under the DTP properly, diligently and with commitment.

(vi) Tuberculosis Programme officers in the State Directorates have to play a very active role and must have the requisite dynamism and drive to push up the facilities and activities and exercise necessary technical and administrative supervision on the functioning of the programme in the field. Every State should have a whole-time State Tuberculosis Officer.

(vii) Steps be taken to create interest among the general practitioners in the implementation of the National Programme and to update their knowledge about the present philosophy of diagnosis and treatment of tuberculosis through Refresher Courses and "clinical meetings" at regular intervals in the DTC in close collaboration with the local IMA branch.

(viii) Health education campaign in the community should develop alongwith the growth and proper functioning of health and medical institutions. Personal contact by the health educators with the community and its leaders would be the most profitable to change the attitude and behaviour of the people. Aids like 'flip charts' brought out by the TB Association of India will be more useful than posters etc. Highest priority be accorded to the audio-visual methods and mass media like Radio and Television.

The Committee also discussed in depth Dr. Gupta's recommendation about multi-drug formulations. The Committee felt that many aspects like bio-availability of constituent drugs, their quantity in such formulations, acceptability etc. have to be taken into consideration before taking a stand on this issue. The Committee noted that the Tuberculosis Association of India is already conducting a chemotherapy trial involving such formulations and agreed to wait for the result of this trial regarding acceptability.

2. The Committee noted that the 42nd National Conference on Tuberculosis and Chest Diseases would be held at Lucknow from the 2nd to 5th December, 1987 and appointed a Committee to scrutinise the papers offered for presentation and finalise the programme for the scientific sessions of the Conference. The Committee also decided that Dr. D.R. Nagpaul should moderate the Symposium on "Strategy to reduce the tuberculosis problem by the year 1995" and requested Dr. K.C. Mohanty to get some papers for a special session on 'Influence of environment on Chest Diseases'. The Committee further noted that in future nobody should be allowed to present a paper if two copies of the presentation were not made available before the presentation.

3. The Committee received a report on the progress made in regard to the various research studies organised by the TB Association of India and noted that :

(a) The results of the two studies on 'Cervical Lymphadenitis and Diabetes' which were presented at the Hyderabad Conference have been published in the April 1987 issue of the Indian Journal of Tuberculosis.

(b) All cases included in the IVth Short-course Chemotherapy trial will complete the follow-up period in August/September and that the results will be available for presentation in time for the Lucknow Conference.

(c) The Vth Short-Course Chemotherapy trial has already been started in four centres and that this study is also likely to be completed shortly and the results will be available for presentation in time for the Lucknow Conference.

(d) Three studies for which grant was sanctioned last year have already been started and three more applications for grants for research projects have been received recently and these are under scrutiny by the Research Committee. The Committee noted with dismay the poor response from the research workers for this facility. The Committee made a plea to the members of the Committee that they may take up this question at individual level with research workers/medical colleges in their respective States with a view to make this facility better known to the workers and thus improve the response further.

4. The Committee noted that only 53 refresher courses were conducted during 1986 in different parts of the country, of which seven were subsidised by the National Academy of Medical Sciences and one each from funds placed at the disposal of the Association by M/s Themis Chemicals Limited and M/s Lupin Laboratories Pvt. Ltd., Bombay. The Committee also noted that the National Academy of Medical Sciences had sanctioned a grant of Rs. 30,000/- for holding 15 courses in different parts of the country, of which four courses had already been completed and the remaining courses were expected to be held within the next 2/3 months. The Committee noted with dismay that the response from State Associations in this respect was still very poor and it was felt that it would be worthwhile changing the pattern of these courses to make them more attractive to general practitioners. The Committee, therefore, decided to elicit the views of the Secretaries of State Associations and their comments along with comments from the members of the Standing Technical Committee would be considered to recommend a modified pattern, if necessary.

Policy recommend

5. The Committee noted that the following action had been taken by the Government on the recommendations of the Standing Technical Committee meeting held on 17th April, 1986 for improving the performance under the National TB Programme :

(a) The Government has fully endorsed the recommendation that priority should be given to detecting sputum positive cases among the chest symtomatics attending the various health institutions in the country.

(b) The Directorate General of Health Services has already taken necessary action for regular and continuous supply of drugs and X-ray films.

(c) Multi-purpose workers and Health Guides are being involved in drug distribution, surveillance, detection and retrieval of drug default for improving the patients' compliance in domiciliary treatment.

(d) With regard to the recommendation that the National TB Programme should be a 100% centrally sponsored scheme at least during the 7th, 8th and 9th Five Year Plans, the Government has stated that the following three schemes are already being implemented.

(i) Supply of anti-TB drugs/equipments to States on 50 : 50 sharing basis between the Centre and the States.

(ii) Supply of anti-TB drugs/equipments to the UTs as 100% centrally sponsored scheme.

(iii) Supply of anti-TB drugs to TB clinics run by voluntary bodies as 100% centrally sponsored scheme.

(e) With reference to the recommedation that private practitioners should be supplied with drugs by the Government for free distribution to their bonafide tuberculous patients, the Government has reiterated their inability to do so.

(f) With regard to the suggestion that the tempo of TB Programme under the revised 20 Point Programme should be further intensified, the Government has stated that with the inclusion of the National TB Programme in the revised 20-Point Programme, its tempo had already been intensified and the targets for case detection had been enhanced.

6. The Committee noted that the New India Assurance Company has recently introduced a new Health Insurance Scheme for all major illnesses including tuberculosis and that the Association had suggested some revision and modifications in the scheme in respect of tuberculosis for which a reply from the Insurance Company is still awaited.

7. The Committee noted that the recommendations of the Standing Technical Committee in respect of teaching of tuberculosis at the under-graduate and post-graduate levels were formulated 10 years ago and many of these recommendations regarding Rules and Regulations and Curriculum need review in the light of advances during the last 10 years. It was, therefore, resolved that a Sub-Committee consisting of Drs. S.P. Pamra, M.D. Deshmukh, K.C. Mohanty and P. Bahadur be appointed to review these recommendations and bring these uptodate.

REFRESHER COURSES

Andhra Pradesh: During the period February to June, 1987, six refresher courses were held in Irramnuma, Gudivada, Vizianagaram, Alwal, Nalgonda and Hyderabad. In all, about 350 doctors attended these courses. The Irramnuma course was sponsored by the National Academy of Medical Sciences.

Goa: The TB Association of Goa, Daman & Diu, in collaboration with the American College of Chest Physicians, Western India and Maharashtra State Anti-TB Association and under the auspices of the TB Association of India, organised a refresher course at Mapuca on 29th March, 1987. It was attended by 142 doctors and was sponsored by the National Academy of Medical Sciences.

Madhya Pradesh: The District TB Association, Chhindwara. organised a refresher course in Badkuhi on 5th February, 1987. The course was attended by 55 doctors.

Maharashtra - The Maharashtra State Anti-TB Association organised a refresher course in Dhule on 22nd March, 1987. The course was attended by 58 doctors.

Punjab: The TB Association of Punjab, under the auspices of the TB Association of India and in collaboration with the local branch of IMA, organised a refresher course in Ludhiana on 5th April, 1987. The course was sponsored by the National Academy of Medical Sciences and was attended by 95 doctors.

Karnataka: Under the joint auspices of the Tuberculosis Association of India and the Udupi Taluka TB Association and in collaboration with the Udupi branch of the Indian Medical Association, the TB and Chest Diseases Department of the Kasturba Hospital, Manipal, organised a refresher course on 24th May, 1987. It was attended by 95 doctors and was sponsored by the National Academy of Medical Sciences.

42ND NATIONAL CONFERENCE

The 42nd National Conference on Tuberculosis and Chest Diseases will be held at Lucknow (Uttar Pradesh) for four days from 2nd to 5th December, 1987 under the joint auspices of the Tuberculosis Association of India and TB Association of Uttar Pradesh and in collaboration with the National College of Chest Physicians.

The registration form and other details about the Conference can be had from the Secretary-General, Tuberculosis Association of India, 3, Red Cross Road, New Delhi-110001.

GUJARAT STATE CONFERENCE

The XVth Gujarat State Tuberculosis Conference was held on 21st and 22nd February, 1987 at B.J. Medical College, Ahmedabad. Shri Jayendra Pandit, Mayor, Ahmedabad Municipal Corporation, inaugurated the Conference which was presided over by Dr. A.G. Patel, Chairman of the Gujarat State TB Association. Dr. T.B. Patel inaugurated the Scientific Sessions and Shri Ramnikbhai Ambani, Managing Director of Reliance Industries released the Souvenir. About 200 doctors and 325 para-medicals attended the Conference.

IVTH ORISSA CONFERENCE

The IVth Orissa TB & Chest Diseases Conference was held on 22nd February, 1987 at B.M. Swasthya Nibas, Chandpur. Dr. H.C. Misra, Director of Health Services, Orissa, inaugurated the Conference. 91 doctors from different parts of the State attended the Conference.

ANTI-TB WEEK, ANDHRA PRADESH

The TB Association of Andhra Pradesh observed anti-TB Week at Adilabad, Cuddapah and Vizianagaram from 17th to 23rd February, 1987. A number of group meetings, film shows and case finding camps were organised. Posters and pamphlets on tuberculosis were also distributed. During the case finding programme, 206 symptomatics were referred to the District TB Control Centre. 976 BCG vaccinations were done. Sarees, lungies, towels, fruits, biscuits etc. were distributed to the poor TB patients in Cuddapah. Pamphlets on the various aspects of tuberculosis were also distributed. Twelve new patients were detected in case finding Camps in Vaddirala and Porumamilla Primary Health Centres; 51 symptomatics were examined in P. Bondapalli, Konuru and P. Medapalli (Vizianagaram District). Sputum was positive in 10 persons.

HEALTH CHECK-UP CAMP

A Health Check-up Camp, under the joint auspices of the Cosmopolitan Employees Cultural Association, TB Association of Ranga Reddy District aud TB Association of Andhra Pradesh was held at Trimulgherry (Secunderabad) on 31.5.1987. The Camp was inaugurated by Sri S.R. Sankaran, IAS. Principal Secretary to Government, Social Welfare Department and the function was presided over by Dr. Basheer Khan, District Medical and Health Officer, Ranga Reddy District. 513 persons attended this Camp. X-ray and sputum examinations were done for 21 cases. Of these six cases were detected and they were put on treatment. Thirty two children were given B.C.G., DPT, Polio and Measles vaccination.

NEW TB SEAL

The Association has selected the pictures of well-known monuments viz. Qutab Minar, Humayun's Tomb, Red Fort, Purana Quila (all from Delhi), Taj Mahal (Agra) and Hawa Mahal (Jaipur) for the TB Seals for the 38th TB Seal Campaign. The photographs for three of these Seals were donated by Shri G.B. Pai, a noted philatelist and a Trustee, of the Tuberculosis Association of India.

NATIONAL CONFERENCE ON RESPIRATORY DISEASES

The Seventh National Conference on Respiratory Diseases will be held at Calcutta from 17th to 20th December, 1987. Programme includes poster presentations, seminars, state of art sessions, symposia and teach-in-sessions. For further details, contact Dr. S.K. Sharma, Secretary-General, C/o Eko X-ray, 54, Chowringhee Road, Calcutta-700 071.

IMP. PAPER FOR ANALYSIS OF MYSORE DIST DATA

Ind. J. Tub., 1989, 36, 127

A THREE YEAR COMPARISON OF PERFORMANCE OF THE NORTH ARCOT DISTRICT TUBERCULOSIS PROGRAMME*

C.K. BABU**

Introduction

The District TB programme (DTP) has been in operation in North Arcot district since 1964. However, the expectations both in case-finding and case-holding have not been achieved as per DTP potential. The inclusion of National Tuberculosis Control Programme in Government's 20 Point Programme has since added a new dimension to the need for achieving the potential goals, and it would be of interest to know if case-finding and case-holding are steadily improving or not in North Arcot district.

Material and Methods

North Arcot district is one of the pioneer districts in implementing short course chemotherapy (SCC) under programme conditions, which was monitored by the ICMR in 1983 and afterwards. All the new sputum positive patients who were more than 15 years of age and had not taken chemotherapy for more than 2 months previously, if at all, were eligible for SCC. The North Arcot DTP has 87 PHIs out of which 15 are x-ray centres, 55 microscopy centres and 17 referral centres.

A cohort analysis for the years 1984, 1985 and 1986 has been done and an attempt has been made to compare the performance of the District TB Programme with regard to the case-finding by microscopy, case holding and participation of PHIs in the programme activities.

Case Finding by Microscopy

Since the cohort analysis for SCC pertains only to sputum positive patients, case-finding by sputum examination only has been reviewed. Sputum positive patients diagnosed in the district, from 1st July of a year to 30th June of next year, would thus constitute a cohort.

Table 1 clearly reveals that although there is a gradual decrease in the number of new sputum examinations at DTC, the rate of sputum positivity (about 10%) is at the expected level. VCS and GHS have shown considerable improvement in sputum examination and the rate of positivity is also at the expected level. But, in the case of PHCs, although there is a vast improvement in sputum examinations, the rate of positivity is far below the expected level and has been falling. (2.8% to 1.7%). All in all, the number of examinations has steadily risen and the positivity rate steadily fallen.

Contribution of New Sputum Positives Among PHIS and DTC

Epidemiologically, sputum positive cases are equally prevalent in urban and rural areas. It might be of interest, therefore, to analyse the contribution from 80% of the rural population, compared with 20% of the urban. Since DTC is largely urban and PHC is solely rural in operation, a comparison of sputum positive cases in the cohorts from DTC and PHCs will show their respective contribution (Table 2)

Table 2 shows that sputum positive cases detected at DTC are about 22% to 24% whereas in PHIs it is about 76% to 78% as against the national average of DTC and PHIs contributing 50% each.

It is further noted that the contribution of sputum positive from PHCs is having an upward trend whereas at DTC it is going down due to the decentralisation of services, which is a welcome development. On the whole, there is a downward trend in new sputum positive cases discovered from 1984 to 1986 (Table 1).

Case Holding of Sputum Positive Patients

Case detection is important but equally important is the necessity for starting treatment and delivering adequate and regular treatment. Table 3 shows that in 1984 nearly 31% cases were "initial

*Paper presented at the 43rd National Conference on TB & Chest Diseases, Calcutta, 1988.

**Statistical Assistant, District TB Centre, Vellore

Table 1. *Case-Finding by Sputum Examination in different types of Health Institutions from 1984 to 1986*

Type of Centre	1984 New sputum exams.	1984 No. Pos.	1984 %	1985 New sputum exams.	1985 No. Pos.	1985 %	1986 New sputum exams.	1986 No. Pos.	1986 %
DTC	6934	645	9.3	5808	552	9.5	4622	476	10.3
PHC	4635	130	2.8	10616	191	1.8	12167	207	1.7
GD	390	35	9.0	140	11	8.0	129	11	8.5
VC	1839	202	11.0	2695	202	7.5	4086	347	8.5
GH	15459	1592	10.3	15062	1389	9.2	16480	1153	7.0
Total	29257	2604	8.9	34321	2345	6.8	37484	2194	5.8

*DTC = District Tuberculosis Centre; PHC = Primary Health Centre; GD = Govt. Dispensary; VC = Voluntary Centres; GH = Govt. Hospitals.

Table 2. *Contribution of Sputum Positive Cases from different types of Health Institutions (1984 to 1986)*

Cohort period	DTC	PHC	VC	GH & GD
1984	24.7%	4.9%	7.7%	62.7%
1985	23.5%	8.2%	8.7%	59.6%
1986	21.8%	9.2%	15.8%	53.2%
National yearly average	50.5%		49.5%	

Table 3. *Sputum Positive Patients put on SCC & Standard Treatment*

Period	No. detected	Put on SCC	Put on Standard Treatment	Not started Treatment
1984	2604	312	1485	807 (31%)
1985	2345	1359	487	499 (21%)
1986	2194	1238	463	493 (22%)

defaulters", which proportion fell to 21% later, but is still very high. It represents a totally wasted effort.

Treatment Completion Rate

For SCC patients, those who had taken 52 doses are considered as having completed 100% chemotherapy.

For standard regimen, those who had taken more than 12 collections are considered as having completed 100% chemotherapy.

Table 4 shows a better rate of treatment completion among SCC patients compared with those on standard regimens. Earlier, Table 3 had shown that in 1984, only 312 out of 1797 (17%) cases received SCC while in 1986, 1238 out of 1701 (73%) got the SCC regimen.

Table 5 gives an overview of the 1985 cohort of patients and the 1846 (78.7%) patients among them in respect of whom treatment cards could be located for analysis.

Table 6 shows that the completion rate for females was higher than that for males in respect of SCC in 1985.

Whether there was any difference in case-holding for SCC among DTC patients compared

Table 4. *Completion rate for SCC and Standard Treatment*

Period	Treatment completed (100%)	
	SCC %	Standard %
1984	48.7	18.0
1985	41.3	24.0
1986	35.4	22.3

Table 5. *Cohort Period of 1985*

Sputum positive cases diagnosed	:	2345	
Original treatment cards available for analysis	:	2090	(89.1%)
Among them old cases	:	244	(10.4%)
Cards eligible for analysis	:	1846	(78.7%)
Number put on SCC	:	1359	(73.6%)
Number put on standard treatment	:	487	(26.4%)

Table 6. *Cohort of 1985 SCC Patients who completed treatment, according to sex of patients*

	Males	Females	Total
Put on SCC	961	275	1236*
Completed 100% treatment	368 (38.3%)	143 (52%)	511 (41.3%)

* Out of 1,359 patients put on SCC, 123 are not included due to migration, change of regimen or death.

with other type of centres as regards 100% treatment completion is shown in Table 7.

Table 7 shows that case-load at all the PHIs is 85.5% compared to that of 14.5% at DTC. But SCC completion rate at DTC is 50.3%, and that in VCs even 75.9% but just around 38% in rest of the PHIs. The most discouraging aspect is that although about 55.5% of the case-load is held by GHs (mostly Taluk Headquarters Hospitals), their completion rate is just 38.3%.

Table 7. *Proportion of SCC Completed Treatment among different types of centres*

Type of Centre	Proportion put on SCC	Completed 100% treatment %
DTC	14.5	50.3
PHC	18.3	36.3
GH	55.5	38.3
GD	7.0	36.8
VC	4.7	75.9

DTC = District Tuberculosis Centre
PHC = Primary Health Centre
GD = Government Dispensary
VC = Voluntary Centres
GH = Government Hospitals

Conclusions

The gradual downward trend in sputum examinations at DTC is understandable since it is observed that the diagnostic facilities at the PHIs have been utilised to a greater extent. However, it is a matter of concern that sputum positivity rate at PHCs is on the decline (from 2.8% to 1.7%) which leads us to think that either selection of symptomatics or the quality of technical procedures adopted at the laboratory needs improvement. It is also observed that the contribution of new sputum positive cases in PHCs and VCs has steadily increased which shows better involvement of the rural population. But, overall there has been a declining trend in new sputum cases found. While starting of treatment has improved, yet the proportion of initial defaulters is high. Completion rate in SCC is better than that of Standard regimen. Completion rate is higher in females than in males. With regard to sharing of SCC case-load, among different types of institutions, it is evident that only 14.5% of the cases were treated at DTCs compared with 85.5% in all the PHIs. This may be due to the fact that the treatment facilities available at the peripheral level have been better utilised. The high 100% completion rate of SCC at DTCs (50.3%) is understandable since specialized personnel are looking after initial and subsequent motivation and for taking defaulter actions but it should have been higher, especially when the competion rate at VC is 75.9%. It is discouraging to note, however, that the completion rate at Govt. Hospitals is only 38.3% whereas they carry a maximum load of 55.5% of the patients put on SCC. It may be that this is due to no separate personnel being assigned to look

after initial motivation, subsequent motivation, or defaulter action taking at GHs. As it is true that improvement in case-holding will directly increase the overall efficiency of the programme, something positive should be done at the G.Hs. for better case-holding.

Acknowledgement

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I, V.N. Swamy, Secretary-General Interim I/c. of the Tuberculosis Association of India, 3, Red Cross Road, New Delhi-110 001, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/- V.N. Swamy
on behalf of the Tuberculosis Association of India.

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FATE OF SMEAR POSITIVE PATIENTS OF PULMONARY TUBERCULOSIS AT AN URBAN DISTRICT TUBERCULOSIS CENTRE, FIVE YEARS AFTER TREATMENT*

P. Jagota[1], E.V. Venkatarama Gupta[2] and R. Channabasavaiah[3]

Summary. The fate of smear positive atients, five years after their treatment at an ban District Tuberculosis Centre is reported ng with the problems faced by the patients ith regard to persistence of symptoms, the ed for subsequent treatment and ployment status following treatment.

Among the 1,227 patients treated with ther Standard Regimen (SR) or Short Course hemotherapy (SCC), only 502 (40.0%) could e traced out : 370 on SR and 132 on SCC. Of hose on SR, 40.5% were reported to be dead ompared with 12.1% on SCC. The higher eath rate among the SR cases was mainly ontributed by those not completing reatment (lost cases).

Taking culture negative status as the avourable outcome, 80.8% of the patients on CC compared with 45.7% on SR had a avourable response. Emergence of drug esistance was not seen to be a major problem. Persistence of chest symptoms was observed mong 35.5% of the satisfactorily interviewed patients and significantly higher among those ost on SR (48.3%), than 'SR completed' and 'SCC completed' or lost patients.

About 75% of those who were lost from SR and 50% from SCC had treatment ubsequently. Favourable outcome was reached among the SR lost who took ubsequent treatment to the same extent as among those who did not. This effect was not seen in the SC lost group. There was no change in employment status in about 80% of the patients, whether on SR or SCC.

The overall outcome was the best among patients completing treatment with SCC. The fate of the SR lost group was similar to those who had no chemotherapy.

Introduction

Information on the outcome of chemotherapy under programme situation, immediately after treatment is completed and over a longer follow-up period, is needed by planners for evolving the most appropriate treatment policy. Whereas the fate of tuberculosis patients for a five year period under 'no chemotherapy' situation[1] is known, as also the potential and efficiency of treatment under programme conditions with Standard Regimen (SR) and Short Course Chemotherapy Regimen (SCC) respectivley[2-6], information on the results of such a programme intervention over a longer period of time is lacking. The sociological problems faced by patients following their treatment have also not been studied. It becomes necessary to investigate the behaviour of a patient with respect to his efforts to cope with the changed situation following prolonged suffering, as are the treatment results in terms of deaths, bacteriological conversion and emergence of drug resistance.

Objective

The present study investigates, five years after the anti-tuberculosis treatment of smear positive patients of pulmonary tuberculosis, the

(a) outcome of treatment in terms of
  (i) survival/death and
  (ii) bacteriological status, as well as
(b) perceived health status in terms of
  (i) persistence of symptoms,

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1. Chief Medical Officer, National Tuberculosis Institute (NTI), Bangalore;
2. Deputy Director, Lady Willingdon State Tuberculosis Centre (LWSTC), Bangalore;
3. Statistical Assistant, NTI, Bangalore.

Correspondence : Director, National Tuberculosis Institute, 8 Bellary Road, Bangalore-560 003.

(ii) self-rating of well-being,
(iii) reasons for getting lost from treatment, and
(iv) employment problems faced.

Methods

The study was conducted during the period April to June 1991. A cohort of smear positive pulmonary tuberculosis patients, aged five years and over, diagnosed and treated with SR or SCC (Primary Treatment) during the calendar year 1985 at the Lady Willingdon State TB Centre (LWSTC), Bangalore and residing within Bangalore city limits, constituted the study group. This Centre functions as an urban District Tuberculosis Centre. The proportion of patients on SR and SCC depended on the acceptability of the regimens offered to patients and the availability of SCC drugs at the Centre.

Going by the identification particulars and addresses on treatment cards, Health Visitors (HVs) of both National Tuberculosis Institute (NTI) and LWSTC contacted the patients 4-5 years after being put on treatment. On verifying the identification particulars of the contacted patients, the HVs collected two sputum specimens (one spot and another overnight/spot) from those alive. These sputa were processed in the NTI laboratory for direct smears and culture for *M. tuberculosis* on Lowenstein Jensen's medium. Sensitivity tests were carried out for Isoniazid, Streptomycin, Rifampicin, Ethambutol and PAS.

The HVs and social workers also collected from the patient himself or from any of the adult family members or a neighbour, information about the patient's current health status (or cause and time of death), presence or absence of chest symptoms with duration, employment status and treatment taken, if any, subsequent to the primary treatment.

Though the analysis of the results of treatment pertains to the culture positive patients, there was a high degree of correlation between smear and culture examination results, as given in Annexure 1.

Definitions

Primary treatment : Treatment prescribed at the time of diagnosis
Subsequent treatment : Any other treatment taken besides the primary treatment
Contacted : Patient traced at the treatment card address and found dead/satisfactorily interviewed
Satisfactorily interviewed : Patient found living and interviewed
Completed treatment/Lost : As per the DTP Manuals
Favourable outcome : Both the sputum specimens found culture negative in those satisfactorily interviewed
Unfavourable Outcome : Death/culture positive
Drug resistance : Isoniazid resistant organisms isolated from any of the sputum specimens on follow-up

Material

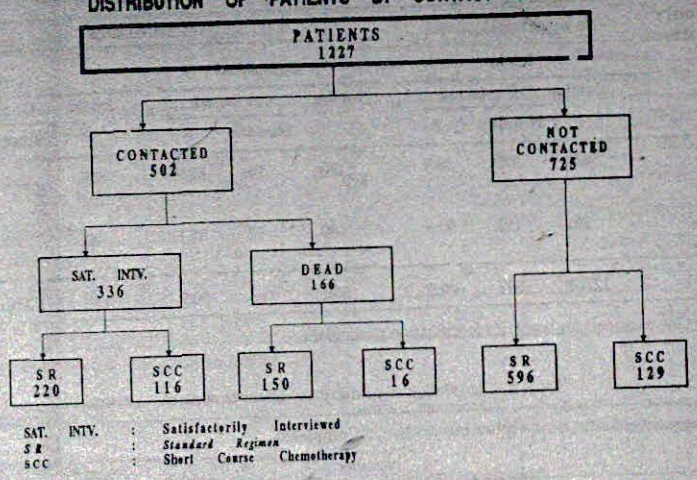
In all 1,227 consecutive patients, with adequate address on the treatment card and satisfying the admission criteria, were registered for the study (see Figure). Of them, only 502 (40.9%) could be contacted; the remaining 725 included, among others, (i) migrated-305, (ii) house not traced-191, (iii) false address-20, and (iv) house demolished-29.

Results

The distribution of 1,226 out of the 1,227 patients, by primary treatment status (SR or SCC, completed treatment or lost), is given in Table 1. Of them, 965 (78.7%) were on SR and 261 (21.3%) on SCC. Further, it is seen from Annexure 2 that the age-sex distributions of patients, contacted or not contacted, were similar, by regimen and treatment status. In other words, the contacted patients could be taken to represent all the patients at intake.

Table 2 presents the treatment completion pattern in the contacted patients, according to treatment regimen The observed difference in treatment completion, between SR (20.5%) and SCC (69.7%) is significant ($p < 0.05$), and is similar to patients at intake.

DISTRIBUTION OF PATIENTS BY CONTACT STATUS



Deaths

As seen from Table 3, of the 502 patients contacted, 166 (33.1%) were dead at the time of follow up and the remaining were satisfactorily interviewed. Of the 76 patients who completed treatment on SR, 6.6% were dead compared to 49.3% among those lost on SR. Of the 150 dead on SR, 145 (96.7%) were from those lost from treatment.

Deaths among patients completing treatment on SR was significantly lower than among those lost on SR. Further, deaths among SR completed, and among those on SCC, whether SCC completed or lost, were similar.

Overall outcome

The fate of 498 contacted patients, in terms of death and bacteriologically favourable outcome in the remaining is presented in Table 4. Of the 368 patients on SR, 45.7% had a favourable outcome. Among the 76 who completed treatment on SR, 75%, and of the lost group 38.0%, had a similar outcome.

Of the 130 patients on SCC, favourable outcome was observed in 80.8%. Among the 90 who completed treatment on SCC, 86.7% had a favourable outcome, compared to 67.5% in those lost on SCC. SCC completed treatment cases had a significantly better outcome than 'SCC lost' or 'SR completed' or lost cases.

Thus the overall favourable outcome among the 498 contacted patients was 54.8%, when nearly a fifth of them were treated with SCC.

Drug resistance

Table 5 shows the bacteriological status among 332 of the satisfactorily interviewed patients, whose culture results were available. Of the 218 patients on SR, 50 were culture positive. Of them, 35 had drug resistant organisms. Of the 114 patients on SCC, 9 were culture positive and 7 of them had drug resistant organisms. Thus, only 42 remained as drug resistant patients among the 332 satisfactorily interviewed (12.7%), even when 71.2% of those still positive were drug resistant.

Patients left alive with drug resistant organisms were not seen to be a major problem, in the context of the number put on primary treatment.

Table 1. *Distribution of patients according to contact and treatment status*

Primary treatment	Intake	Treatment status						
		Completed			Lost			
	Number	Contacted		Intake	Contacted		Intake	Contacted	
		Number	%		Number	%		Number	%
SR	965#	370	38.3	150	76	50.7	815	294	36.1
SCC	261	132	50.6	180	92	51.1	81	40	49.4
Total	1226#	502	40.9	330	168	50.9	896	334	37.3

One excluded for want of identification particulars.

Table 2. *Completion of primary treatment in contacted patients*

Primary treaunent	Number	Completed		Lost	
		Number	%	Number	%
SR	370	76	20.5	294	79.5
SCC	132	92	69.7	40	30.3
Total	502	168	33.5	334	66.5

Table 3. *Deaths among patients contacted after five years according to primary treatment status*

Primary treatment		Total	Contacted		
			Dead		Satisfactorily interviewed (Number)
			Number	%	
SR	Completed	76	5	6.6	71
	Lost	294	145	49.3	149
	Total	370	150	40.5	220
SCC	Completed	92	9	9.8	83
	Lost	40	7	17.5	33
	Total	132	16	12.1	116
Total		502	166	33.1	336

Table 4. *Fate of contacted patients five years after primary treatment*

Primary treatment		Total	Results after five years			
			Unfavourable		Favourable (Bact. neg.)	%
			Dead	Bact. pos.		
SR	Completed	76	5	14	57	75.0
	Lost	292	145	36	111	38.0
	Total	368	150	50	168	45.7
SCC	Completed	90	9	3	78	86.7
	Lost	40	7	6	27	67.5
	Total	130	16	9	105	80.8
Total		498#	166	59	273	54.8

4 patients excluded due to contamination.

Lost from treatment

Table 6 gives the reasons for patients getting lost from treatment from among the satisfactorily interviewed. The predominant reasons were referral to hospital (SCC : 13, SR : 29) and treatment stopped on medical advice (SCC : 9 and SR : 15). Thus, intervention of the treating physician had been responsible for loss to treatment in 66.7% in SCC and 29.5% in SR. Dissatisfaction with treatment, financial constraints, migration etc. were some of the other reasons.

Subsequent treatment

Subsequent treatment among patients lost, whether on SR or SCC, and their fate is given in Table 7. In all, among the patients lost to primary treatment on SR, 46.2% of the subsequently treated group had a favourable outcome, compared to 30.9% in those not so

Table 5. *Bacteriological status of satisfactorily interviewed patients according to primary treatment status*

Primary treatment		Total examined	Bact. positive	Resistant to INH alone or with other drugs	
				Number	%
	1	2	3	4	5 = Col. 4/Col. 2 × 100
SR	Completed	71	14	13	18.3
	Lost	147	36	22	15.0
	Total	218	50	35	16.1
SSC	Completed	81	3	3	3.7
	Lost	33	6	4	12.1
	Total	114	9	7	6.1
Total		332#	59	42	12.7

Four patients excluded due to contamination

Table 6. *Reasons for loss from treatment*

Reasons	SCC		SR	
Referred to hopital	13	66.7%	29	29.5%
Stopped on medical advice	9		15	
Disatisfaction with treatment	4		21	
Financial constraints	–		24	
Migrated	1		6	
Symptoms disappeared	–		9	
Not stated	6		45	
Total	33		149	

treated. Patients subsequently treated had a significantly better overall outcome. Of 38 patients lost on SCC, no difference was observed in deaths and bacteriological status between the subsequently treated and untreated group. (The detailed results on subsequent treatment will be reported elsewhere).

Chest symptoms

The presence of chest symptoms among those satisfactorily interviewed is given Table 8. Of the 217 patients on SR, 42.4 reported still having chest symptom compared to 22.1% of the 113 on SCC, at t time of interview. Overall, 35.5% of t patients were still having chest symptom Cough alone or in combination with oth symptoms was present in 79 (36.4%) on S compared to 22 (19.5%) on SCC. Coug constituted the predominant symptom (abo 85%). Symptoms were significantly high among the 'SR lost' than in others.

Health status

Health status of these patients, a volunteered, in the form of a self-rate perception of better, worse or the same wa found to be similar. Of the 219 on SR, 92.7 felt better compared to 95.7% out of the 11 on SCC. Whether on SR or SCC, completed o lost, the patients perceived themselves a better (Table not presented).

Occupation

Changes of occupation from that recorde at the time of diagnosis among the employe are given in Table 9. There was no change i employment status in the vast majority o cases, whether they were on SR or SCC completed or lost (more than 72.3%). The

Table 7. *Fate of lost patients according to subsequent treatment #*

Primary treatment	Subsequent treatment	Number	Unfavourable outcome			Favourable outcome (Bact. neg.)	
			Total	Dead	Pos.	Number	%
SR	Treated	171 $	92	68	24	79	46.2
	Not treated	81	56	46	10	25	30.9
	Total	252	148	114	34	104	41.3
SCC	Treated	18	5	1	4	13	72.2
	Not treated	20	7	5	2	13	65.0
	Total	38	12	6	6	26	68.4

Patients for whom information on subsequent treatment is not available are excluded
$ Excluded : two, due to contamination

Table 8. *Chest symptoms among satisfactorily interviewed patients, related to primary treatment*

Primary treatment		Total	Chest symptoms					
			Absent	Present				
				Total		Cough with or without other symptoms		
				No.	%	No.	%	
	1	2	3	4	5 = 100 x Col. 4/Col. 2	6	7 = 100 x Col. 6/Col. 4	
SR	Completed	70	49	21	30.0	18	85.7	
	Lost	147	76	71	48.3	61	85.9	
	Total	217	125	92	42.4	79	85.9	
SCC	Completed	81	65	16	19.8	13	81.2	
	Lost	32	23	9	28.1	9	100.0	
	Total	113	88	25	22.1	22	88.0	
Total	300 #	213	117	35.5	101	86.3		

Six excluded-information not available

number of unemployed was too small to draw any valid conclusion (not on Table).

Discussion

This study presents the fate of patients treated with SR or SCC by an urban DTC, five years after start of treatment. The fate was observed in terms of survival, bacteriological conversion and drug resistance at the time of follow up, as well as socio-economic problems related to persistence of symptoms, current occupation, reasons of loss from treatment and subsequent treatment sought. The follow-up results of an SCC regimen in the form of a cohort for such a long duration are not available so far.

The observations made in the study and their implications need to be considered in the following perspectives : (a) while the national chemotherapy policy[7] is to place all the bacteriologically positive patients on SCC, only one fifth of them were in fact put on SCC, (b) while only 21% of the followed up patients on SR had completed treatment, 70% of those put on SCC completed treatment from the same cohort (Table 2). Similar findings have been reported by NTI, from the national reports on the performance of District Tuberculosis Programme[8] (The study thus gives the efficiency of the system).

That only 41% of the patients could be traced out, even after meticulous efforts, demonstrates the difficulty of carrying out studies of this nature. However, the age-sex distributions of the contacted patients were not different for the patients not traced, in respect of regimen and treatment status. This makes the results suitable for extrapolation.

Fate of patients

The fate of smear positive tuberculosis patients without any chemotherapy shows that after five years, about half of the patients would be dead, a third culture negative (natural cure) and the remaining being transmitters of the disease. In an operational study on the potential of treatment efficacy with SR of 12 months' duration, under programme conditions, 30% were dead, 59% became culture negative and the rest remained as transmitters at the end of five

Table 9. *Employment status after five years among those employed at intake and satisfactorily interviewed*

Primary treatment	Total	Employment status		
		No change	Change	Unemployed
Completed	148 (100.0)	124 (83.8)	22 (14.9)	2 (1.4)
Lost	166 (100.0)	120 (72.3)	23 (13.9)	23 (13.9)
Total	314 (100.0)	244 (77.7)	45 (14.3)	25 (8.0)

years[3]. With SCC of eight months' duration, at the end of treatment, the respective proportions were observed to be 0%, 89.8% and 10.2%[4].

The above findings represent a situation wherein the guidelines given in the DTP manuals[7] have been adhered to ('potential'). However, the outcome of treatment with the average efficiency with which the NTP functions ('performance'), offering both SR as well as SCC appears to be different.

From a study on SCC offered by an average DTP, the results in respect of death, sputum negativity and those who remained positive at the end of treatment were 12%, 59% and 29% respectively, with compliance at 33.2%[5]. The findings in the present study, after five years, were 12%, 81% and 7% respectively; probably because of the high treatment completion rate (70%). It can be seen that the favourable outcome improved among the SCC completed treatment patients in both the above studies i.e., 86.7% in the present study as compared to 90.5% observed in the Kolar study[5]. The results presented here are not very different from those observed in other Asian countries (death 10-16%, bacteriological negativity 60-65% and remaining positive 25%, over a two year period[9].

The fate of the contacted patients on SR in this study, at the end of five years, was 41% dead, 46% sputum negative and 14% still positive. The poor results on SR were mainly due to the patients lost, as the respective proportions among them were 49%, 38% and 13%. These results are similar to a no-intervention situation[1]. Thus, chemotherapy among the SR lost cases showed no benefit, while the SR completed treatment cases showed 75% favourable outcome. Thus, SCC was seen to give a definite socio-epidemiological advantage over SR. It would also seem that intensive effort is required to keep patients on treatment in the event that SCC cannot be afforded and SR has to be the treatment alternative.

The reasons for loss from treatment were mainly due to referral to hospital or medical advice given to stop the treatment (66.7% of those on SCC and 29.5% of those on SR). Surprisingly, the patient factors like financial or job constraints, distance, etc. did not have much bearing on completion of treatment in this study.

Among those who had symptoms at the time of the interview, cough was the predominant symptom, apparently unrelated to the regimen used during the primary treatment.

It is already known that patients who are lost from DTPs pursue treatment subsequently from elsewhere. In this study also, a similar observation was made. However, as seen in Table 7, subsequent treatment was taken by a significantly higher proportion of patients lost on SR (67.9%) compared to those on SCC (47.4%). In other words, patients felt the need to have subsequent treatment more often when they were on SR, especially if they got lost to treatment. This behaviour pattern explains why unfavourable outcome was significantly reduced in the SR lost group cases who had subsequent treatment compared to those who did not.

The five year follow up in the study does not reveal much change in respect of employment status but looms large, especially among those lost to treatment on SR. Favourable response, over a period of five years, was achieved in 45.7% of patients on SR, irrespective of a patient having been lost or completed the treatment. It is conceivable that the rate can be raised to 80.8%, by changing over to the SCC regimen, along with a significant decrease in deaths and reduced search for subsequent treatment. These are major socio-epidemiological gains which could be further augmented by improving the proportion of patients completing SCC. To be of value, a very high proportion of patients ('critical level') need to be placed on SCC[10] to produce an epidemiological impact.

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Annexure-1

Correlation between smear and culture results of satisfactorily interviewed patients

		Culture result			
		Neg.	Pos.	Contaminated	Total
Smear	Neg.	265	20	4	289
	Pos.	8	39	–	47
	Total	273	59	4	336

Annexure 2

Age and Sex distribution of patients according to primary treatment and contact status

Regimen	Age (years)	Intake No.	Primary treatment							
			Completed				Lost			
			Males		Females		Males		Females	
			Cont-acted	Not Cont-acted	Cont-acted	Not cont-acted	Cont-acted	Not cont-acted	Cont-acted	Not cont-acted
SR	5-14	22	1	1	4	2	2	5	4	3
	15-24	198	14	10	7	7	29	60	17	54
	25-34	232	10	9	6	5	48	97	14	43
	35-54	379	18	23	7	10	119	152	18	32
	55+	134	6	7	3	–	35	59	8	16
	Total	965#	49	50	27	24	233	373	61	148
SCC	5-14	3	–	1	1	–	–	–	1	–
	15-24	79	14	14	13	19	3	11	3	2
	25-34	96	19	14	15	16	11	13	4	4
	35-54	64	15	16	5	5	13	9	1	–
	55+	19	9	2	1	1	3	2	1	–
	Total	261	57	47	35	41	30	35	10	6
Total		1226#	106	97	62	65	263	408	71	154

One excluded for want of identification particulars

HORMONE PROFILE OF FEMALES CASES OF PULMONARY TUBERCULOSIS*

Mrs. S.N. Tripathy[1] and S.N. Tripathy[1]

Summary. The hormone profile (prolactin, follicular stimulating hormone and luteinizing hormone levels) was studied in 31 bacteriologically positive, previously untreated cases of pulmonary tuberculosis having amenorrhoea (including 23 cases of secondary amenorrhoea and 5 of irregular menstruation) to find out the reason for these mostly reversible menstrual irregularity conditions met with in cases of pulmonary tuberculosis. The study showed that this mostly functional disorder could be ascribed to hypothalamus in 31%, pituitary in 41% and premature ovarian failure in 25% of cases, while the rest were due to organic lesions in the uterine cervix or endometrium.

Introduction

We have undertaken a series of studies to investigate the involvement of the genital system in female cases of pulmonary tuberculosis since 1980. In our first study[1], it was observed that only 19% of cases had normal menstrual cycle while the remaining 81% had some form or other of menstrual irregularity. In our second study[2], while looking for the reasons of menstrual irregularities, we observed that organic lesion accounted for the menstrual irregularities in 12% of cases and in the rest there was a hypo-function of the ovary. Thus, when these patients were put on effective chemotherapy and followed up for two years, it was noticed that of the 35 cases followed up completely out of 50 cases put on treatment, 72% had become normal both functionally and organically. Only 15% cases continued to have persistent amenorrhoea out of the 20 amenorrhoric patients successfully followed up[3]. The question remained whether the 3 cases who remained amenorrhoric were cases of premature ovarian failure.

To substantiate the above observations, we carried out a study on bacteriologically proved pulmonary tuberculosis cases[4]. There was organic involvement in 24% cases. Of the rest, 84% had functional involvement, namely hypoestrogenism with no clue as to the site of involvement in the hypothalamus-pituitary-ovarian axis. This study was undertaken in the Department of Chest & Tuberculosis and Department of Obstetrics & Gynaecology of S.C.B. Medical College, Cuttack, from April 1992 to January 1993 to provide the answer.

Material and Methods

A total of 35 bacteriologically positive and previously untreated cases of pulmonary tuberculosis, belonging to 19 to 35 years age, having parity between 0 to 3 were taken into the study. Apart from detailed history taking and routine gynaecologic and chest examination, chest X-ray, endometrial biopsy, endometrial aspiration cytology, vaginal cytology and cervical scoring were done. In all cases, follicular stimulating hormone (F.S.H.) and luteinizing hormone (L.H.), prolactin and oestradiol (E2) levels were estimated by radio-immuno-assay technique. Out of the 35 cases, 31 were having menstrual irregularities and hypoestrogenism.

Results

A very large proportion of the cases (48%) belonged to 21-30 years age group and were nulliparous (32%). Secondary amenorrhoea was the commonest menstrual disorder met

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1. S.C.B. Medical College, Cuttack-753 007

Correspondence :Dr (Mrs.) S.N. Tripathy, S.C.B. Medical College, Cuttack-753 007

CURRENT TOPIC

Tuberculosis Hospital Admission System and National Tuberculosis Programme

K. S. ANEJA*, P. JAGOTA**
G. E. RUPERT SAMUEL***

Today, majority of the tuberculosis patients can be treated effectively without admitting them in hospitals. Consequently, the WHO Expert Committee on Tuberculosis (1974), recommended that financial resources and manpower available for tuberculosis control are to be used to organise efficient and widespread ambulatory programmes rather than to support hospitals. Nevertheless, in the situations stated below, hospitalisation becomes essential : (a) Patients requiring surgery, (b) medical emergencies, e.g., severe haemoptysis, spontaneous pneumothorax, etc., (c) miliary/meningeal tuberculosis, (d) patients with severe toxaemic symptoms or those having complications like diabetes mellitus, the control of which requires intensive supervision which is not possible in a domiciliary service, (e) social emergencies where the patient has no home or there is no one in the home to look after him, (f) patients excreting drug resistant bacilli, and (g) diagnostic problems.

A tuberculosis hospital therefore, continues to be an important component of tuberculosis services within the co-ordinated framework of National Tuberculosis Programme (NTP). Tuberculosis beds however, cost a good deal to the nation, and their optimal utilisation should be the logical aim. There is therefore, a need to understand the existing situation in terms of the facilities provided, the types of cases admitted, the policies adopted for admission and the expenses involved in order to give direction to the discussions for re-orientation of hospital admission system, *vis-a-vis* NTP. The present study was an attempt in that direction.

Study—A questionnaire was designed to elicit the information on : (1) The average annual expenditure per bed. (2) Facilities available, viz., the provision of drugs other than streptomycin, INH, PAS and thiacetazone, sputum culture, sensitivity tests, major surgery, etc. (3) Category-wise admission as per the specified indications. (4) Distribution of admissions from rural and urban areas. (5) The admission policies adopted.

It was addressed to all the 123 Government Tuberculosis Institutions in the country, catering to general public as per the Directory of Hospitals in India (1978). For the purpose of analysis, the hospitals were categorised as small, medium and large according to their bed strength. A hospital was considered to be small if its bed strength was 100, medium one with a range of 101 to 300 and large one with a bed strength more than 300. Of the 123 institutions, 26 (21.1%) responded with varying degree of completeness of the information. The bed strength for 9 hospitals was not available in the Directory of Hospitals in India (*loc. cit.*). Out of these 9 hispitals, 4 responded to the questionnaire, of which the bed strength of 3 hospitals was collected from the information received through the questionnaire. However, for one hospital bed strength was not availaible. Actual analysis is thus based on the information collected from 25 hospitals. Of 68 small hospitals, 13 (19.1%) responded, of 33 medium hospitals, 9 (27.3%) responded and of 16 large hospitals, 3 (18.7%) responded to the questionnaire. Out of 6 hospitals where bed strength was not available either from Directory or from the information through questionnaire, one hospital responded. But this was not included as stated earlier. The annual expenditure per bed was calculated from the total budget of the hospital after dividing it by the number of beds.

Facilities available—Of the 25 hospitals 18 had the provision of drugs other than INH, PAS, streptomycin and thiacetazone. Facilities of culture and sensitivity tests were available in 4 and for major surgery in 6 only. An analysis of the relationship of the category of the hospitals to the facilities provided reveals that all the 3 large hospitals had all the major facilities except that in one of the 3 where the facility of the culture and sensitivity tests were not available. Fifteen of the 22 medium and small hospitals had the facilities of drugs other than INH, PAS, streptomycin and thiacetazone, but the facilities for culture and sensitivity tests were provided in 2 hospitals and major surgery in 3 hospitals only. However, of the 13 small hospitals only 8 had the provision of drugs other than INH, PAS, streptomycin and thiacetazone and none had the facility of culture and sensitivity tests or surgery (Table 1).

Expenditure—Of the 20 hospitals from which information of expenditure was available, 11 were spending Rs. 7,000/- or more per bed, and 9 less than Rs. 7,000/- per bed annually. Of these later 9 hospitals, 6 were spending more than Rs. 5,000/- per bed per year. A pertinent finding however, was that, 5 of the 8 small hospitals were also spending Rs. 7,000/- and above per bed per year. The average expenditure incurred by the large proportion of small hospitals was therefore, almost the same as that of medium and large hospitals.

Types of patients admitted—(1) The proper utilisation of a tuberculosis hospital is directly reflected in the proportion of patients who are admitted as per laid down specific indications. From 17 hospitals, information regarding the pattern of admission according to indication was available. The discrepancy of admission without specific indication was more evident in cases of small and medium hospitals, where out of 14 small and medium hospitals only 3 were admitting 80% or more of their patients as per indications and in as many as 6, such admissions were less than 40% (Table 2).

(2) The analysis of the percentage of admission in relation to emergencies revealed that in 10 of the 17 hospitals, admission for emergencies was less than 25% (Table 3). Further, in 6 of these 10 hospitals, it was even less than 10%. The discrepancy was again more in small and medium hospitals.

(3) Excepting emergencies, in a vast majority of the patients, the sputum should be positive for AFB at the time of admission. However, it was only 3 of the 15 hospitals in which 80% or more of the patients were sputum positive on admission and in 3, they were even less than 40%. The findings were similar in all categories of hospitals (Table 4).

(4) Number of cases in rural areas is nearly 4 times to that of urban areas. There should therefore approximately be a similar ratio of the admissions in the hospitals. In 14 of the 20 small and medium hospitals who responded

National Tuberculosis Institute, Bangalore
* M.B.B.S., D.T.D., D.P.H., Tuberculosis Specialist
** M.B.B.S., Senior Medical Officer
*** B.A., Diploma in Statistics, Statistical Assistant

TABLE 1—SHOWING AVAILABILITY OF SPECIALISED FACILITIES BY DIFFERENT CATEGORY OF HOSPITALS IN RELATION TO THEIR ANNUAL EXPENDITURE PER BED

Category of hospital	No. of hospitals			Facilities available											
				Drugs other than INH, PAS, streptomycin and thiacetazone			Culture and sensitivity tests			Major surgery			None		
	Annual expenditure per bed (Rupees)			Annual expenditure per bed (Rupees)			Annual expenditure per bed (Rupees)			Annual expenditure per bed (Rupees)			Annual expenditure per bed (Rupees)		
	<7000	≥7000	NA	<7000	≥7000	NA	<7000	≥7000	NA	<7000	≥7000	NA	<7000	≥7000	NA
Small	3	5	5	1	4	3	—	—	—	—	—	—	2	1	2
Medium	5*	4	—	4	3	—	—	2	—	1	2	—	—	—	—
Large	1	2	—	1	2	—	—	2	—	1	2	—	—	—	—
Total	9	11	5	6	9	3	—	4	—	2	4	—	2	1	2

* For one hospital, facilities provided were not stated; NA = Information not available

TABLE 2—SHOWING DISTRIBUTION BY PERCENTAGE OF ADMISSIONS AS PER SPECIFIC INDICATIONS

Category of hospital	Percentage of admissions as per indications					Total
	<40	40—59	60—79	80 and above	NA	
Small	3	3	—	2	5	13
Medium	3	1	1	1	3	9
Large	—	1	—	2	—	3
Total	6	5	1	5	8	25

NA = Information not available

TABLE 3—SHOWING DISTRIBUTION BY PERCENTAGE OF ADMISSIONS FOR EMERGENCIES

Category of hospital	Percentage of admissions for emergencies				Total
	<25	25—49	50 and above	NA	
Small	5	3	—	5	13
Medium	5	1	—	3	9
Large	—	1	2	—	3
Total	10	5	2	8	25

NA = Information not available

TABLE 4—SHOWING DISTRIBUTION BY PERCENTAGE OF ADMISSIONS FOR SPUTUM POSITIVE CASES

Category of hospital	Percentage of admissions of sputum positive cases					Total
	<40	40—59	60—79	80 and above	NA	
Small	2	1	2	1	7	13
Medium	1	1	3	1	3	9
Large	—	1	1	1	—	3
Total	3	3	6	3	10	25

NA = Information not available

TABLE 5—SHOWING DISTRIBUTION BY PERCENTAGE OF ADMISSION FROM RURAL AREAS

Category of hospital	Percentage of admissions from rural areas					Total
	<30	30—49	50—74	75 and above	NA	
Small	1	—	3	7	2	13
Medium	—	1	1	7	—	9
Large	1	1	1	—	—	3
Total	2	2	5	14	2	25

NA = Information not available

to this question, admission of 75% patients or more were for patients from rural areas. In fact, in 18 of 20 hospitals, the patients from the rural areas were more than 50%. However, of the 3 large hospitals, in 2, the admission from rural areas was less than 50% and in 1, even less than 30% (Table 5).

(5) Admission for non-tuberculous conditions was negligible. In 17 of the 18 hospitals who responded to this question, admission on this account was less than 5%.

Policy of admission—Of the 24 hospitals who reported on this question, 12 had the policy of admitting the patients strictly by the waiting list kept for this purpose and the other 12 were having varied system of admissions. All the 3 reporting large hospitals were admitting their patients according to their turn on the waiting list.

DISCUSSION

In view of the uniform success of the domiciliary treatment, the need for hospital admissions has been minimised. A small portion of the patients however, do need institutional care. The admission of such patients will not only lead to better patient acceptance, but will also create an atmosphere of confidence in the community towards NTP. Tuberculosis beds are very expensive. More than 50% of the reporting hospitals were incurring Rs. 7,000/- or more annually per bed and this proportion of the expenditure was maintained by medium and even by the small hospitals. Further, there was poor relationship between the budget provision and the facilities provided. Very little specialised facilities were available in the small hospitals. Yet, a large proportion of these hospitals were incurring more than Rs. 7,000/- per bed annually for rendering just

the routine treatment service. Fifty-five of the tuberculosis institutions in the country are such small hospitals, which have neither the facility nor the expertise to perform the specialised functions. It would be fruitful to probe deeper into the details of their expenditure and rearrange their functions within the existing budget by providing more facilities and appropriate staff.

Surprisingly, in the hospitals spending between Rs. 5,000/- and Rs. 7,000/- per bed per year, the proportion of the facilities was also the same as those spending Rs. 7,000/- and above per bed annually. There is, thus, a need to rationalise the expenditure *vis-a-vis* the facilities provided.

The indications for the hospital admissions are clear and specific. But these were adhered to by one-third of the hospitals and in another one-third, the admission as per indications was as low as 40% and less. The major imbalance was again in small and medium hospitals.

In normal situation, 25% of the admissions in tuberculosis hospital are usually meant for emergency cases In one-third of the hospitals, such admissions were less than 10%. Whether the emergency cases did not reach hospitals in time or they were not admitted, is a moot question, but the utilisation of the hospitals on this account was much less than expected. This underutilisation was again on the part of small and medium hospitals.

Apart from the emergencies and admission due to toxicity of the drugs, which form a comparatively small group, the patients admitted in the tuberculosis hospitals should initially be sputum positive but in 25% of the hospitals of all categories, 60% of the patients were sputum negative at the time of admission. The bed occupancy in most of the hospitals was thus uncalled for and amounted to wasteful expenditure.

Routine admissions according to seniority of registration in the waiting lists are out of place with current concept of case management, yet, half of the hospitals were admitting their patients strictly on waiting list basis and not on the urgency of the indications for admission. Admissions should be regulated in an effective manner through co-ordination committee consisting of the senior members of the staff of the hospitals concerned and referring tuberculosis centres, offering domiciliary treatment so as to co-ordinate domiciliary and hospital services under NTP.

A redeeming feature was that the distribution of services rendering to the rural and urban patients was equitable in small and medium hospitals, but the larger hospitals in which the facilities were concentrated, catered to lesser proportion of patients from the rural areas probably due to their location in bigger cities.

There are always inherent limitations in such a kind of enquiry based on questionnaire which prevents drawing of firm conclusions but still it does indicate the existing trend on the utilisation of the tuberculosis beds requiring indepth thinking for reorientation of the hospital admission systems within the framework of NTP.

Summary and Conclusion

Tuberculosis hospital is an important component of tuberculosis services within the framework of National Tuberculosis Programme. In order to understand the situation, information on facilities provided, the types of cases admitted, the policies adopted for admission and the expenses involved was collected through a questionnaire addressed to various Government Tuberculosis Institutions in the country catering to general public.

The major discrepancies in source allocation *vis-a-vis* facilities available and right type of admissions, relate to small and medium hospitals and it is here that there is bulk of the resource input on account of their sheer numbers. Instead of increasing the number of beds in the form of such small and medium hospitals, it would be more relevant to ensure the provision of facilities, appropriate staff and adherence to the right type of admission policies in these categories of hospitals, to derive the optimum benefit of the resource input.

Acknowledgment

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NOTES AND NEWS

12th International Leprosy Congress

The 12th International Leprosy Congress will be held at Vigyan Bhawan in New Delhi, on February 20-25 1984. The President of India, Sri Zail Singh, will inaugurate the Congress and the Prime Minister of India, Smt. Indira Gandhi will deliver the keynote address. Detailed information may be had from Dr. R. H. Thangaraj, Organising Secretary, 12th International Leprosy Congress, 1 Red Cross Road, New Delhi-110 001.

Dr. S. S. Verma Memorial Award

The Indian Public Health Association, Delhi Branch, has invited entries for the above award, which has been instituted for an original work based on research studies/article in the field of Community Medicine by scientists below 35 years of age. The award carries a scroll and a cash award of Rs. 500/-. Five copies of the entries have to be sent by *31st March, 1984* to Dr. Sarojini Dewan, Preventive and Social Medicine Department, Moulana Azad Medical College, New Delhi-110 002.

Diploma Course in Physiotherapy and Occupational Therapy

A 3-year Diploma Course in Physiotherapy and Occupational Therapy has been introduced at the Institute of Engineering and Rural Technology. The minimum qualification for admission is Intermediate in Science with biology or equivalent with a minimum of 50% marks in the aggregate. Further information may be had from Dr. V. K. Kansal, Head of the Physio-occupation Therapy, IERT, Allahabad-211 002 U.P.

Advanced Course in Diabetes Mellitus

An advanced course in Diabetes Mellitus will be held in the Department of Medicine of the All-India Institute of Medical Sciences on March 12-17, 1984 with Prof. M.M.S. Ahuja as the course director. The last date for application is *January 31, 1984*. Detailed information may be had from the Organising Secretary, Dr. K. Khatarpal, Department of Medicine, AIIMS, New Delhi-110 029.

West Bengal Chapter of ASI

The 5th Annual Conference of the West Bengal Chapter of the Association of Surgeons of India will be held at Krishnagar, Nadia, on February 12, 1984. Dr. H. C. Majumdar, Organising Secretary, has invited all members to attend the conference at Rabindra Bhawan at Krishnagar, Nadia.