

BRIEF COMMUNICATION**CLINICAL AUDIT ON THE MANAGEMENT OF EXTRA-PULMONARY TUBERCULOSIS, JIMMA HOSPITAL**

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ABSTRACT

BACKGROUND: Tuberculosis is a chronic bacterial infection that primarily attacks the lungs, which may also affect the kidneys, bones, lymph nodes, and the brain. Tuberculosis causes 2 million deaths each year. The world Health Organization (WHO) predicts that between 2000 and 2020, nearly 1 billion people will become infected with the bacterium and about 35 million people will die from the disease. In Ethiopia, tuberculosis is one of the leading causes of morbidity and mortality. The aim of the study was to review the management of extra pulmonary tuberculosis based on the National Tuberculosis and Leprosy Control Program manual

METHODS: This retrospective study was conducted on the management of extra pulmonary tuberculosis in Jimma hospital. Data was collected on prepared format from patients' records and National Tuberculosis and Leprosy Control Program manual.

RESULTS: A total of 112 extra pulmonary tuberculosis patients visited Jimma hospital TB clinic from November 22/1998 to June 24/1999, and all were included in the study. Mean age of patients was 28 years and the male to female ratio was 1:1.3. The majority (95.5%) were new cases, which have never been treated for tuberculosis previously. Among the extra pulmonary tuberculosis forms, tuberculous lymphadenitis was the commonest (41.1%) followed by tuberculous pleurisy (27.7%). Presenting complaints were recorded in 74(66.1%) of patients. Weight was recorded in 70 (62.5%) of patients with mean weight of 49.1 Kg. Erythrocyte sedimentation rate (ESR) was determined in 72(64%) patients with mean value of 66.2 mm/hr. Radiological investigation was done in 44(39.3%) patients of which 36 are chest X-rays. Fine needle aspiration cytology (FNAC) was done for 33 patients of whom 31 were consistent with tuberculosis. Long course chemotherapy (LCC), DOTS and retreatment regimens were used in 90, 7 and 1 patients respectively. Thirteen (11.6%) patients were treated by drug regimens that are not mentioned on the NTLCP manual. Forty (36%) patients were completed treatment, 35(31%) were transferred out, and 32(29%) interrupted treatment.

CONCLUSION: The study showed incomplete recordings of history and physical finding, inappropriate disease categorization and selection of treatment regimens, hence, poor compliance to the 1997 NTLCP manual. Refreshment and training workshop for health professionals on the use of NTLCP manuals and continuous clinical audit with appropriate feedback are recommended.

Key words: Clinical audit; extra pulmonary Tuberculosis; National Tuberculosis and Leprosy Control manual.

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INTRODUCTION

Tuberculosis is a major public health problem. About 33% of the world's population is estimated to be infected by *Mycobacterium tuberculosis* [1]. In Ethiopia, tuberculosis is one of the top ten diseases, the fourth commonest cause of hospital admissions and the leading cause of hospital death [2]. Pulmonary tuberculosis is the commonest form of the disease in over 80 % of the patients. Extra pulmonary tuberculosis (EPTB); tuberculosis affecting organs other than the lung parenchyma; occurs in less than 20 % of all TB patients [2]. The 1998/9 report of Jimma hospital TB clinic showed total registered patients to be 1316 for all forms of Tuberculosis [3].

Appropriate management of tuberculosis patients reduces mortality as well as morbidity. Hence, in, 1992 (which is revised in 1997) the NTLCP has developed a manual which serves as a guideline for the diagnosis, treatment, and follow-up of TB patients [2]. According to the manual, relevant positive and negative statements should be obtained from the patients, pertinent physical examinations should be conducted and salient ancillary investigations should be ordered to reach a diagnosis.

The National Tuberculosis and Leprosy Control Program (NTLCP) manual contains information regarding TB forms, category of diseases, treatment regimens, outcomes and management algorithms. Health professionals working in health centers plus hospitals are anticipated to follow the aforementioned manual. Jimma hospital being a teaching and referral hospital is expected to provide proper management for all cases including TB patients. Furthermore, the medical team which actively involved in the management of tuberculosis is expected to abide the NTLCP manual [2]. The diagnosis of

EPTB patients appear difficult compared to pulmonary tuberculosis. The national guide might reduce this gap on the one hand and improve the management of tuberculosis as a whole on the other hand. Training was given to maximize the utilization of the manual by the health professionals. The aim of the study was to assess the use of the 1997 manual as a tool in the management of EPTB patients by untrained health professionals.

PATIENTS AND METHODS

This retrospective study based on data obtained from patients' card and units TB register at Tuberculosis Clinic Jimma hospital. The Tuberculosis clinic of Jimma hospital was run by a general practitioner who worked in the clinic for more than three years. A nurse and health assistants were responsible for evaluation, registration and initiation of treatment and follow up of all patients with tuberculosis that could be treated on an outpatient basis.

All patients who visited the hospital's Tuberculosis clinic between November 22/1998 and June 24/1999 diagnosed to have EPTB were included in the study. Pulmonary tuberculosis and other lung diseases were excluded from the study. Data was collected from patients' records and units TB register by senior physician using structured questionnaire. The questionnaire was developed from the patients' card, tuberculosis unit register and the NTLCP manual. Patients history; presenting complaints, personal profiles, pertinent positive and negative statements, relevant physical findings, appropriate laboratory and radiological examination results, disease category, drug regimen at the time of diagnosis and the outcome of treatment were collected from the records.

Data was entered into a computer and analysed using SPSS 7.5 for windows. Distribution of sex, age, history, physical

findings, and investigations results, disease category, drug regimen, and treatment outcome were illustrated using descriptive statistics.

RESULTS

A total of 112 EPTB patients were registered and started on anti TB treatment between November 22 / 1998 and June 24 / 1999 at the tuberculosis clinic of Jimma hospital. The mean age of the patients was 28 (\pm 11) years. The male to female sex ratio was 1:1.3.

Presenting complaints were recorded only in 66 % (74) of the patients. Fifty four percent (40) of the patients were presented with chief complaints of neck swelling and pus drainage from the swelling, abdominal distention and swelling with bowel habit changes was reported in 13.5% (10) of the patients, painful breathing recorded in 9.5 % (7) of the patients and bone pain, joint and neck stiffness were reported in 22 % (17) of the patients (Table-1).

Table 1. Distribution of presenting complaints in EPTB patients, Jimma hospital, August 2001

Presenting complaints	No of cases	Percent
Neck swelling	33	44.5
Pus discharge from neck swelling	7	9.5
Chest pain on breathing	7	9.5
Bone or joint pain	4	5.4
Joint stiffness or paralysis	3	4.1
Abdominal swelling	8	10.8
Diarrhea or constipation	2	2.7
Headache or neck stiffness	4	5.4
Others*	6	8.1
Total	74	100

Others* = breast mass, testicular swelling, skin lesions.

Relating to constitutional symptoms, were not recorded in 67% (75), 67% (75), absence or presence of history of loss of appetite, loss of weight, and night sweating and 65 % (73) of the patients respectively (Fig.1).

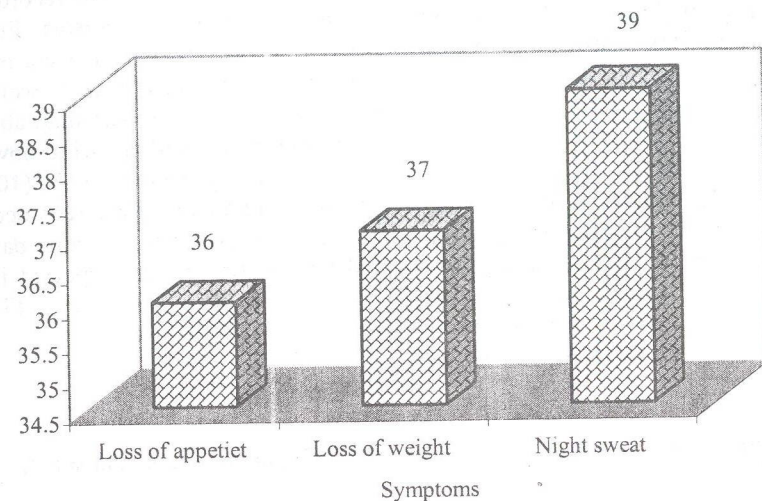


Fig 1. EPTB patients who have recorded documents about the absence or presence of constitutional symptoms during their visit to Jimma Hospital August 2001 (N=112)

History of contact with a known TB patient was obtained in only for 4.5 % (5) patients. Of the forty four women with reproductive age group, only one woman has been asked for missed period. History of antibiotic treatment prior to the initiation of anti - TB treatment was asked in 76 % (85) of the patients while, 88 % (99) of the patients did not have a record on history of previous anti-tuberculosis treatment.

At the time of diagnosis, 21 (18.7%) patients were found to be seriously

ill, 18 (16.1%) were mild to moderately sick looking, 41 (36.6%) of patients were not sick looking and, and general appearance was not specified in 32 (28.6%) of patients. Weight was taken for 70 (62.5%) of the patients with the mean weight being 49 kg.

Chest findings were recorded in 27.7 % (31) patients. Twenty six percent (29) patients had lymph node enlargements, 3.6 % (4), 3.6 % (4) had CNS and abdominal findings respectively. More than one organ was affected in 10.7 % (12) of the patients (Table-2).

Table 2. Distribution of physical findings related to tuberculosis in patients with EPTB, August 2001

Physical examination findings	Number of cases	Percent
Chest findings #	31	27.7
Lymph node enlargement	29	25.9
Abdominal findings	4	3.6
CNS findings	4	3.6
Multiple findings*	12	10.7
Others**	16	14.3
Physical findings not specified	16	14.3

Chest findings = chest findings indicating pleurisy.

*Multiple findings = Findings in more than one organ or system findings

**Others = Cardiac, skin, joint, bone, genital...

ESR was ordered for 72 of the patients, and the median values was 60mm/hr. Radiological and ultrasound examinations were done for 39 % (44), 1.7 % (2) of the patients respectively. Eighteen percent (8) patients were ordered X- ray of the bones, joints, and of the skull, 81 % (36) were ordered chest x rays of which, pleural effusion, and infiltration was reported in 72% (26), 5.5 % (2) patients respectively. Military lesion, bronchopneumonia, and hydro- pneumothorax were reported in 8 % (3) patients. In 14 % (5) of the patients there were no cardio pulmonary findings. Pericardial effusion was reported in two patients who had echocardiography. Histo-

pathological examinations were done for 33 of the patients and 31 of them had findings consistent with tuberculosis and two had findings not consistent with TB. Of the four patients who were screened for HIV infection and two turned out to be positive.

Tuberculosis lymphadenitis was the commonest form accounting for 41.1 % (46) of the cases followed by TB pleurisy that accounts for 27.7 % (31). The rest were TB of the skin, TB spondylitis, TB peritonitis, TB mastitis, TB arthritis, TB pericarditis, and TB meningitis and others in descending order (Table 3).

Table 3. Distribution of EPTB forms, Jimma Hospital, August 2001

Disease form*	Number of cases	Percent
Lymphadenitis	46	41.1
Pleurisy	31	27.7
Skin	7	6.3
Spondylitis	5	4.5
Peritonitis	4	3.6
Mastitis	3	2.7
Arthritis	2	1.8
Pericarditis	2	1.8
Meningitis	2	1.8
Others**	8	7.2
Not specified	2	1.8

* Disease form = Extra pulmonary site affected by tuberculosis.

** Others = TB of the liver, endometrium, ovary, intestine, testis, bone etc

Diseases category

New patients, patients never treated for tuberculosis or treated for less than four weeks previously, constitute 95.5 % (107) of all cases. There was one transfer in, a patient received from another reporting unit after being started on treatment; two patients classified as treatment failures, and two cases who do not fit in any of the NTLCP categories.

Regimen's of choice

Long course chemotherapy (LCC) regimen was used in 80.4 % (90) of the cases, followed by directly observed treatment (DOTS) regimen in 6.3 % (7) patients and Retreatment regimen which was used in one patient. Twelve percent (13) patients were treated by drug regimens not specified in the NTLCP manual, and one patient had no drug written on his records.

Among seriously sick cases 12, were put one LCC, 5 on DOTS and 3 on treatment regimens not included in the NTLCP manual. Two healthy looking

patients were put on DOTS regimen. Twenty four TB pleurisy, three TB spondylitis, three peritonitis, one pericarditis and two TB meningitis patients were put one LCC. Two HIV positive patients were treated with LCC, of which one was put on INH-Thiacetazone combination and the other INH - Ethambutol combination.

Regarding streptomycin dose, 51 % (36) patients received appropriate dose for weight and 44 % (31) patients received inappropriate dose for weight (above or below recommended by the NTLCP manual), data was not found for three patients and of 112 cases there was no weight record for 37.5 % (42) patients.

Treatment outcomes

Of all cases 36 % (40) completed their treatment courses, 31 % (35) were transferred out, 29 % (32) interrupted their treatment, and 4.5 % (5) were reported as treatment failure (Fig. 2).

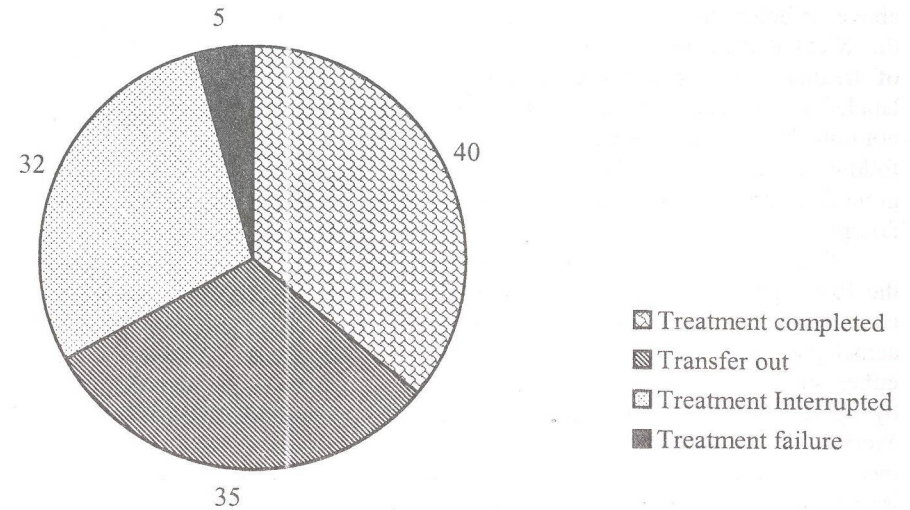


Fig 2. Outcomes of treatment in EPTB patients, Aug. 2001

DISCUSSION

Younger age groups and females are more affected than older age groups and males. Compliance to the 1997 NTLCP manual is generally poor. Seventy-four patients lack history of presenting complaints; only 25 % of the patients have record on the absence or presence of history of loss of appetite, loss of weight and night sweating. History of contact with known tuberculosis patient, menstrual history, drug history were not asked or recorded in the majority of the patients. Weight is taken just for 70 patients, although it is necessary in calculating dose. History taking is vital in the diagnosis, categorization of the diseases and selection of the drug regimen. Though, only one woman was asked concerning missed period, 34 women were prescribed streptomycin indiscriminately.

Two patients were wrongly classified as treatment failure before the initiation of

the anti tuberculosis treatment, which will intern influence drug regimen selection. Treatment failure is defined as a patient who, while on treatment, remained or became again smear positive at five months or later after commencing treatment [1]. Records on physical examinations, laboratory and radiological findings are relatively good. Tuberculosis lymphadenitis is the commonest manifestation of EPTB, followed by disseminated tuberculosis, tuberculosis affecting two or more organs, the finding was consistent with other studies [4, 7].

Drug regimens are recommended for a defined group of patients. However, 16 seriously sick patients were put other drug regimen instead of DOTS, one HIV positive patient was put on thiacetazone-INH combination. Thiacetazone - INH combinations contraindicated in

tuberculosis patients infected with HIV. Regarding streptomycin dose; 31 patients received inappropriate dose for weight i.e. above or below the recommended dose by the NTLCP manual. Concerning outcome of treatment five patients were wrongly labeled as treatment failure. Culture was not done before the commencement and on follow up basis; therefore there is no ground to label the outcomes as treatment failure.

The study clearly demonstrated that the 1997 National Manual on Tuberculosis control in Ethiopia is not utilized on the actual patient management. This could be either due to limited access to the manual by practitioners, failure to read and exercise the guideline. In a country with meager resources for complete diagnostic investigations the value of proper history and physical examination in reaching appropriate diagnosis cannot be understated. Inappropriate drug or regimen selection is not only waste of resources but also a risk of unwanted adverse drug reactions and emergence of drug resistance. The Ministry of Health should seriously consider making the national manual available for practitioners. The 1997 NTLCP manual should also be available to all health professionals involved in tuberculosis control. Refreshment and training workshops on appropriate use of new manuals should as well be given serious attention. Further study on the reasons for failure to use the manual by practitioners should be done and acted on accordingly.

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