Comparison of Directly Observed Treatment and Self Adminitered Treatment for Management of Tuberculosis: A Clinical Study

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ABSTRACT

Introduction: Tuberculosis is a bacterial disease caused by the bacillus Mycobacterium tuberculosis. Pulmonary tuberculosis (PTB) is the most common form of TB in humans occurring in over 80% of population. In this study, we have compared the two treatment option for the management of TB.

Material and methods: This study included 120 patients diagnosed positive for tuberculosis. Patients were divided into 2 groups, group I and group II. Each group contained 60 patients. Antitubercular treatment (ATT) was given in both groups as per RNTCP. Group I was put on intermittent antitubercular treatment (DOT) under supervision of community health worker whereas in group II, antitubercular treatment (SAT) was given to patients for 2 months and was instructed to report every 6 weeks for smear and laboratory examination.

Results: In group I, 60 patients were put on DOT and in group II, 60 patients were put on SAT. In group I, 45 patients showed positive smear, 9 showed negative smear while 6 were found positive for extrapulmonary TB. In group II, smear positive was seen in 30patients, smear negative was seen in 13 patients and 17 patients found positive for extrapulmonary TB.

In group I, patients were cured (33), had completed treatment (10), lost follow up (11), failure (4) and died (2). In group II, patients were cured (15), had completed treatment (18), lost follow up (24), failure (1) and died (2). The difference among two groups was significant (P-0.01). In group I, the treatment outcome was 27 weeks and in group II, it was 32 weeks. The difference was non significant. 42 patients in group I and 32 patients in group II were successfully treated with DOT while 18 patients in group I and 28 patients in group II had adverse effects. The difference was significant (P-0.02).

Conclusion: Author concluded that TB can be cured with DOT successfully. However, SAT can be an alternative treatment modality for TB in area where DOT is not possible.

Keywords: Mycobacterium, Pulmonary, tuberculosis,

INTRODUCTION

Tuberculosis is a bacterial disease caused by the bacillus Mycobacterium tuberculosis. Pulmonary tuberculosis (PTB) is the most common form of TB in humans occurring in over 80% of population.[1] It is a droplet infection and spreads when a person coughs, sneezes or speaks and minute droplet nuclei each contains 1-5 TB bacilli, which are able to remain airborne in any indoor space for up to 4 hours. The tubercle bacillus can survive in the dark for several hours although it is sensitive to direct sunlight. The infectious dose of tuberculosis is between 1 and 10 bacilli. A person with active TB can infect an average of 10-15 people each year if left untreated.[2]

Of the global annual incidence of 9 million TB cases, India contributes to 2.3 million. In 2012 in Andhra Pradesh (AP), the estimated incidence of smear-positive tuberculosis cases was approximately 52 and 90 smear-positive cases per 100,000 population. Earlier this disease was considered to have high mortality and morbidity. However nowadays, different treatment modalities are available.[3]

DOTS also known as intermittent, directly observed treatment, short-course is administered to tuberculosis patients nationwide, as per the guidelines of Revised National Tuberculosis Control Program (RNTCP). A DOTS strategy is recommended as the key to successful treatment outcomes for tuberculosis patients. However, internally displaced people in conflict zones in border areas and tribal populations sometimes can access health facilities and remain deficient of these services. In such cases, DOTS is not possible. In such cases, self administered therapy (SAT) is only option.[4] In this study, we have compared the two treatment option for the management of TB.

MATERIAL AND METHODS

This is a comparative study conducted on the patients suffering from pulmonary tuberculosis. Patient information regarding name, age, sex etc was recorded. This study included 120 patients diagnosed positive for tuberculosis. The confirmation of tuberculosis was done with sputum examination and montoux test. Patients were divided into 2 groups, group I and group II. Each group contained 60 patients. Antitubercular treatment (ATT) was given in both groups as per RNTCP. Group I was put on intermittent antitubercular treatment (DOT) under supervision of community health worker whereas in group II, antitubercular treatment (SAT) was given to patients for 2 months and was instructed to report every 6 weeks for smear and laboratory examination.

STATISTICAL ANALYSIS

Results were tabulated with the help of Microsoft office 2007 and subjected to statistical analysis using descriptive statistics.

RESULTS

Table 1 shows that 2 groups were made. In group I, 60 patients were put on DOT and in group II, 60 patients were put on SAT. Category of TB was done in Figure 1. In group I, 45 patients showed positive smear, 9 showed negative smear while 6 were found positive for extrapulmonary TB. In group II, smear positive was seen in 30patients, smear negative was seen in 13 patients and 17 patients found positive for extrapulmonary TB.

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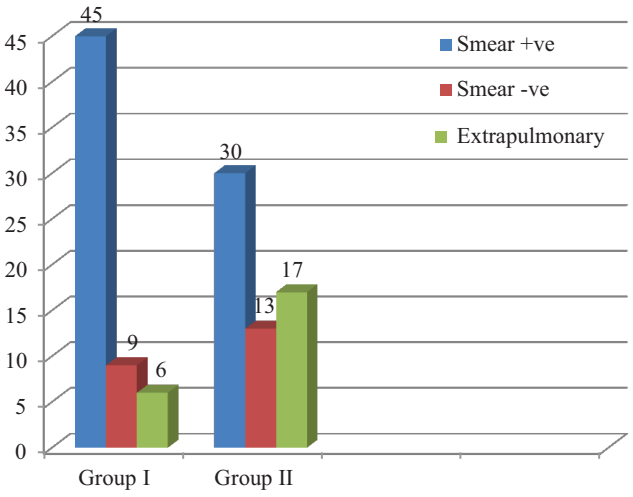

Figure-1: Category of tuberculosis

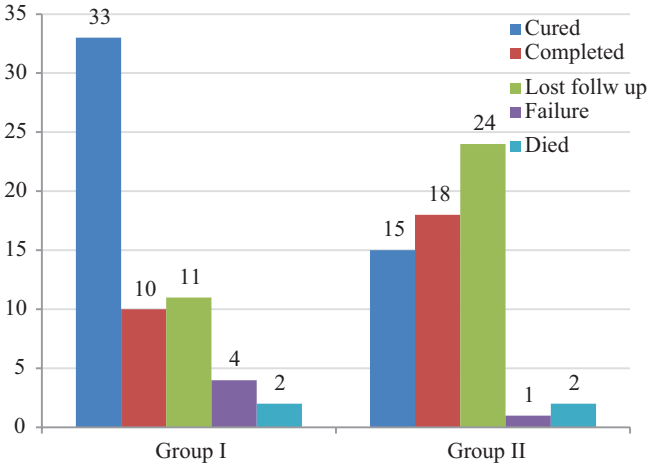

Figure-2: Treatment outcome

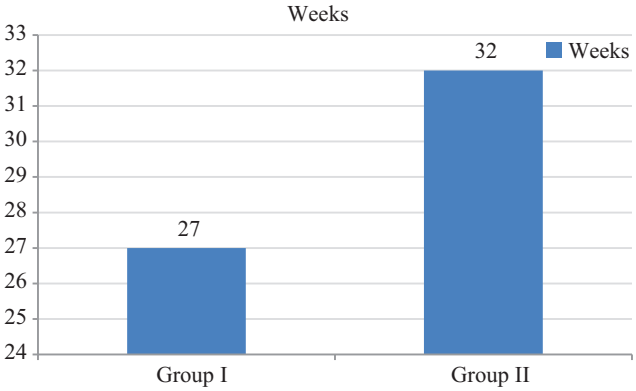

Figure-3: Duration of treatment

Figure 2 shows that in group I, patients were cured (33), had completed treatment (10), lost follow up (11), failure (4) and died (2). In group II, patients were cured (15), had completed treatment (18), lost follow up (24), failure (1) and died (2). The difference among two groups was significant (P-0.01). In group I, the treatment outcome was 27 weeks and in group II, it was 32 weeks. The difference was non significant (Figure 3). 42 patients in group I and 32 patients in group II were successfully treated with DOT while 18 patients in group I and 28 patients in group II had adverse effects. The difference was significant (P-0.02) (Table 2).

Total- 120		
Group	**Group I**	**Group II**
Treatment	DOTS	Sats
Number	60	60

Table-1: Distribution of patients

Outcome	**Group I**	**Group II**
Successful	42	32
Adverse	18	28

Table-2: Final oucome of treatment

DISCUSSION

Pulmonary tuberculosis is the most common form of TB disease in humans occurring in over 80% of cases. Tuberculosis can affect any part of the body. Involvement of pleura, spine, urogenital tract, joints, nervous system, lymph nodes or abdomen occur as a extra-pulmonary tuberculosis (EPTB) due to spread to these organs.[5] The common symptoms seen in TB are Fever >2 weeks, night sweats, unexplained weight loss (more than 1.5 kg in a month), persistent cough of 2 weeks. The cough may be productive of sputum which may be blood stained. There can be chest pain; loss of appetite and weight; tiredness; fever, particularly with a rise in temperature in the evening and night sweats; and shortness of breath.[6]

In present study, we compared the treatment outcome in TB patients given in the form of DOT and SAT in 120 patients divided equally. We found that in group I, 45 patients showed positive smear, 9 showed negative smear while 6 were found positive for extrapulmonary TB. In group II, smear positive was seen in 30patients, smear negative was seen in 13 patients and 17 patients found positive for extrapulmonary TB. Verma[7] in his study found 15/30 cases of extrapulmonary TB. Treatment outcomes in tuberculosis patients may depend on many factors like HIV-co infection, distance to health facility, literacy levels of the patients, marital status, access to self-remedies/traditional healers, mode of administration of drugs etc.[8] In group I, patients were cured (33), had completed treatment (10), lost follow up (11), failure (4) and died (2). In group II, patients were cured (15), had completed treatment (18), lost follow up (24), failure (1) and died (2). In present study we found that patients treated with DOT cured in shorter duration as compared to SAT. This is in agreement to results of Nackers et al.[9]

CONCLUSION

Author concluded that TB can be cured with DOT successfully. However, SAT can be an alternative treatment modality for TB in area where DOT is not possible.

REFERENCES

1. Murali Madhav S, Udaya Kiran N. A comparative study of DOTS and Non-DOTS interventions in tuberculosis cure, Indian J Community Med. 2004;29:1.
2. J, Garner P. Directly observed therapy for treating tuberculosis. Cochrane Database of Systematic Reviews. 2007;4:CD003343.
3. Guha R. Adivasis, naxalites and Indian democracy. Econ Polit Wkly. 2007;12:3305–3312.
4. Mandal PK, Mandal A, Bhattacharyya SK. Comparing the Daily Versus the Intermittent Regimens of the Anti-Tubercular Chemotherapy in the Initial Intensive Phase

in Non-HIV, Sputum Positive, Pulmonary Tuberculosis Patients. J Clin Diagn Res. 2013; 7: 292–295.
5. Jain Y. India should introduce daily drug treatment for tuberculosis. BMJ. 2013;4:67-69.
6. Albanna AS, Smith BM, Cowan D, Menzies D. Fixed-dose combination antituberculosis therapy: a systematic review and meta-analysis. Eur Respir J. 2013;42:721–32.
7. Verma R, Khanna P, Meena, Prinja S. A Comparative Study Between Dots and Non-Dots Patients In Two Districts Of Haryana, India. The Internet J of Epidemiology. 2009;8:1.
8. DG, Yimer S, Bjune GA. A systematic review of delay in the diagnosis and treatment of tuberculosis. BMC Public Health. 2008;8:15.
9. Nackers F, Huerga H, Espie´ E, Aloo AO, Bastard M, et al. Adherence to Self-Administered Tuberculosis Treatment in a High HIV-Prevalence Setting: A Cross-Sectional Survey in Homa. 2012;5-8.

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