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A comparative evaluation of management of tuberculosis patients

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Abstract
Background: Tuberculosis is still one of the major causes of mortality and morbidity in the world population. The present study was conducted to evaluate different treatment management of tuberculosis patients. **Materials & Methods:** 46 tuberculosis patients of both genders were divided into 2 groups. Group I comprised of 23 patients who received tab. Isoniazid, rifampicin, pyrazinamide and ethambutol 7 days/ week for 56 doses (8 weeks) and group II also comprised of 23 patients who received tab. Isoniazid, rifampicin and ethambutol 7 days/ week for 56 doses (8 weeks). Treatment outcome in both groups was compared. **Results:** Group I had 15 males and 8 females and group II had 16 males and 7 females. Smoking was seen in 12 and 10, alcoholism in 4 and 6 and smoking+ alcoholismin 7 and 8. New cases were seen among 10 and 9, relapse cases were 12 and 10 and failure was 1 and 4 in group I and II respectively. Treatment outcome was success cases 17 in group I and 15 in group II. Failed 3 in group I and 5 in group II, died 1 in group I and 2 in group II and lost follow up 2 in group I and 1 in group II. The difference was significant (P< 0.05). **Conclusion:** Group I patients had less failure cases and high success rate than group II patients.
Key words: Tuberculosis, Success, Failure.

Introduction

Tuberculosis is still one of the major causes of mortality and morbidity in the world population with nearly 1.3 million deaths recorded from 8.6 million in 2012 and 91,729 cases which makes it the leading infection in HIV positive person and cause of hospital death[1]. The emergence and dissemination of multi drug resistant tuberculosis (MDR TB), a highly toxic, rapidly spreading and main cause of TB related death in developed and developing countries often defined as resistance to at least isoniazid and rifampicin, is a new challenge in TB control[2]. It occurs due to factors related to previous treatments. Genetic factors include accumulation of changes in the genomic content via acquisition of resistant genes. Incomplete (inadequate) treatment, lack of adherence and factors related to previous TB treatments[3].

The World Health Organization (WHO) calls for activities to establish and strengthen the mechanisms of collaboration and joint management between HIV and TB control programmes. Interpretations of this vary: a systematic review identified five different models for delivering integrated TB and HIV services. Only a few studies have reported on patient-relevant impact such as treatment outcomes, making direct comparisons of the various models difficult[4].

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A 'one stop service' model describes TB and HIV services provided at a single clinic, by the same trained health care provider at the same time. This model has been suggested to be particularly efficient in settings with high HIV prevalence where most TB patients[5]. TB in lungs or throat is infectious while in other parts are not usually TB can be classified based on anatomical site as pulmonary, extrapulmonary, miliary TB and on the previous history as new, previously treated, relapse, failure, default and based on drug resistance as mono, polydrug, multidrug, extensive drug, and rifampicin-resistant TB. Diagnosis is done by tuberculin skin test[6]. The present study was conducted to evaluate different treatment management of tuberculosis patients.

Materials & methods

The present study comprised of 46 tuberculosis patients of both genders. They were included in the study with their written consent. Data pertaining to their demography was recorded. Patients were divided into 2 groups. Group I comprised of 23 patients who received tab. Isoniazid, rifampicin, pyrazinamide and ethambutol 7 days/ week for 56 doses (8 weeks) and group II also comprised of 23 patients who received tab. Isoniazid, rifampicin and ethambutol 7 days/ week for 56 doses (8 weeks). Parameters such as smoking, alcoholism etc. was recorded. Treatment outcome in both groups was compared. Treatment was recorded as new, relapse and failure. Results of the study were compared and subjected for statistical inference. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

Groups	Group I	Group II
M:F	15:8	16:7

Table 1 shows that group I had 15 males and 8 females and group II had 16 males and 7 females.

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Table 2: Comparison of parameters

Parameters	Group I	Group II	P value
Smoking	12	10	0.91
Alcoholism	4	6	0.80
Smoking+ alcoholism	7	8	0.94
New cases	10	9	0.95
Relapse	12	10	0.92
Failure	1	4	0.01

Table 2, Fig.1 shows that smoking was seen in 12and 10, alcoholism in 4 and 6 and smoking+ alcoholism in 7 and 8. New cases were seen among 10 and 9, relapse cases were 12 and 10 and failure was 1 and 4 in group I and II respectively. The difference was significant (P< 0.05).
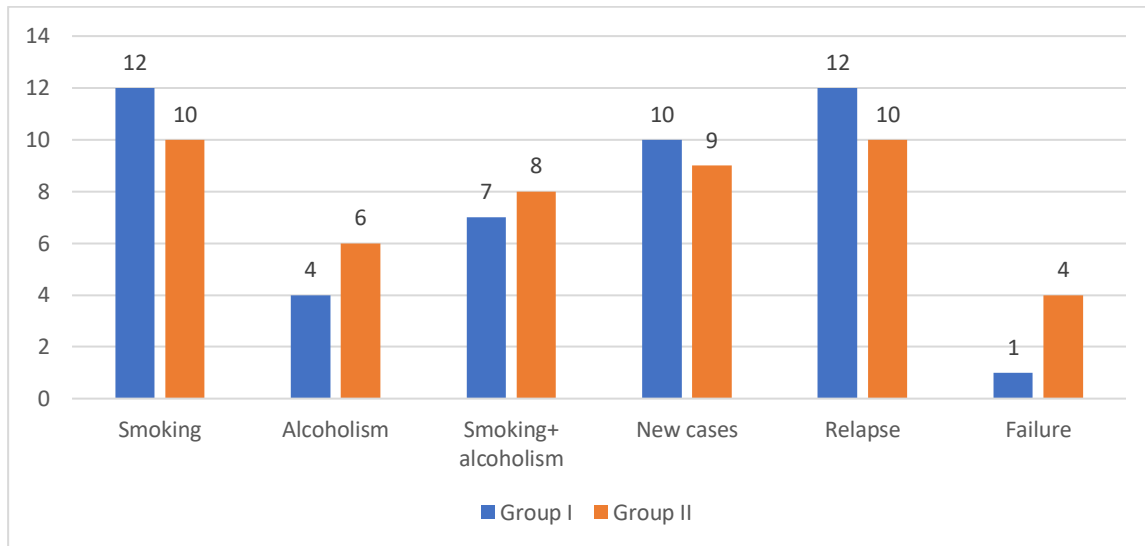

Fig 1: Comparison of parameters

Table 3: Treatment outcome

Outcome	Group I	Group II	P value
Success	17	15	0.80
Failed	3	5	0.15
Died	1	2	0.05
Lost follow up	2	1	0.05

Table 3 shows that treatment outcome was success cases 17 in group I and 15 in group II. Failed 3 in group I and 5 in group II, died 1 in group I and 2 in group II and lost follow up 2 in group I and 1 in group II. The difference was significant (P< 0.05).

Discussion

Tuberculosis (TB) is a bacterial infection caused by Mycobacterium TB transmitted through the air. It can spread through the lymph nodes and bloodstreams to any organ in the body[7]. It is most often found in the lungs[8]. Most people who are exposed to TB never develop symptoms as bacteria live in an inactive form and become active when immune system weakens and infect the tissue of the infected organ[9]. Hence, the two types are latent and active TB, the latter can be fatal if left untreated. TB is caused by group of bacteria called M. TB complex they are M. TB (major causative organism), Mycobacterium africanum, Mycobacterium microti, and Mycobacterium canetti. In droplet infection, the patient breathes in tubercle bacilli, it settles in lungs and begins to grow, and from there, it migrates to different organs. TB in lungs or throat is infectious while in other parts are not usually[10]. The present study was conducted to evaluate different treatment modality of tuberculosis patients.

In present study, group I had 15 males and 8 females and group II had 16 males and 7 females. Bernard et al[11] evaluated the treatment outcome in TB patients. A total of 101patients were studied as per the inclusion and exclusion criteria. A total of 101 patients mostly in the age group of 30–50 years were male population dominates pulmonary TB (PTB) was seen in 57 (56.43%) extra PTB in 44 (43.57%) in which pleural effusion TB was common (34.09%) other types

were lymph node TB (15.74%), spine TB, TB meningitis (9.09% each), bone TB (6.481%) treatment outcome found to be success in 85 (84%) 10 (10%) treatment completed 1 (1%) died 4 were defaulters, 1 not evaluated, 82 developed ADR. On causality assessment it was possible and severity of moderate level.

We found that smoking was seen in 12 and 10, alcoholism in 4 and 6 and smoking+ alcoholism in 7 and 8. New cases were seen among 10 and 9, relapse cases were 12 and 10 and failure was 1 and 4 in group I and II respectively. We found that treatment outcome was success cases 17 in group I and 15 in group II. Failed 3 in group I and 5 in group II, died 1 in group I and 2 in group II and lost follow up 2 in group I and 1 in group II. Schulz et al[12] evaluated the outcomes of coinfected patients starting antiretroviral treatment (ART) in a tuberculosis (TB) hospital who received different models of ongoing care. This cohort study compared outcomes for 271 coinfected patients who started ART. After discharge, one group of patients received anti-tuberculosis treatment and ART from different providers, in the same or in different clinics. The other group received anti-tuberculosis treatment and ART at the same visit from the same service provider (integrated care). Demographic and clinical data and TB and ART outcomes were compared. The vertical care model had more unfavourable outcomes for anti-tuberculosis treatment (28.7% vs. 5.9%, P < 0.001) and ART (30.1% vs. 7.4%, P < 0.001) than the integrated care model. The vertical care model showed no difference

whether services were provided by two service providers in the same or in geographically separate primary health care.

Conclusion
Authors found that group I patients had less failure cases and high success rate than group II patients.

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