

**ORIGINAL ARTICLE****Management of tuberculosis patients- A comparative study**<sup>1</sup>Ambuj Garg, <sup>2</sup>Vipin Kumar Yadav<sup>1</sup>Associate Professor, Department of General Medicine, Saraswathi Institute of Medical Sciences, Hapur, Uttar Pradesh, India;<sup>2</sup>Assistant Professor, Department of TB & Chest, Saraswathi Institute of Medical Sciences, Hapur, Uttar Pradesh, India**ABSTRACT:**

**Background:** As the top infection among HIV-positive individuals and a primary cause of hospital death, tuberculosis continues to be one of the leading causes of mortality and morbidity in the global population, accounting for over 1.3 million deaths from 8.6 million in 2012 and 91,729 cases. The present study was conducted to assess different treatment management of tuberculosis patients. **Materials & Methods:** 48 tuberculosis patients of both genders were divided into two groups of patients. For 56 doses (8 weeks), 23 patients in group I received tabs of isoniazid, rifampicin, pyrazinamide, and ethambutol seven days a week. Similarly, 23 patients in group II received tabs of isoniazid, rifampicin, and ethambutol seven days a week. Alcoholism, smoking, and other parameters were noted. The two groups' treatment outcomes were compared. Relapse, failure, and new treatment were noted. **Results:** Group I had 13 males and 11 females and group II had 11 males and 13 females. Smoking was seen in 9 and 8, alcoholism in 4 and 6 and smoking+ alcoholism in 11 and 10. New cases were seen among 10 and 11, relapse cases were 13 and 9 and failure was 1 and 3 patients in group I and II respectively. Treatment outcome was success cases 18 in group I and 13 in group II. Failed 2 in group I and 5 in group II, died 1 in group I and 2 in group II and lost follow up 3 in group I and 4 in group II. **Conclusion:** Compared to group II patients, group I patients had a higher success rate and fewer failure cases.

**Key words:** Ethambutol, Tuberculosis, HIV-positive

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**This article may be cited as:** Garg A, Yadav VK. Management of tuberculosis patients- A comparative study. J Adv Med Dent Scie Res 2017;5(2):265-268.

**INTRODUCTION**

As the top infection among HIV-positive individuals and a primary cause of hospital death, tuberculosis continues to be one of the leading causes of mortality and morbidity in the global population, accounting for over 1.3 million deaths from 8.6 million in 2012 and 91,729 cases. A significant problem in TB control is the emergence and spread of multidrug-resistant tuberculosis (MDR TB), which is highly toxic, spreads quickly, and is the leading cause of TB-related deaths in both industrialized and developing nations. MDR TB is commonly defined as resistance to at least isoniazid and rifampicin.<sup>2</sup> It happens as a result of circumstances associated with earlier therapies. The accumulation of modifications to the genome through the acquisition of resistance genes is one example of a genetic factor.

Activities to create and improve the mechanisms of cooperation and joint management between HIV and TB control programs are called for by the World Health Organization (WHO). There are different ways to interpret this: Five distinct models for providing integrated TB and HIV services were found in a comprehensive review. It's challenging to directly compare the different models because so few research has shown patient-relevant impact, such as treatment outcomes. A "one stop service" approach refers to HIV and TB services that are simultaneously offered at a single clinic by the same qualified healthcare

professional. It has been proposed that this technique is especially effective in areas where the majority of TB patients are HIV-positive. While TB is typically not contagious in other areas, it can be contagious in the lungs or throat. 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. The present study was conducted to assess different treatment management of tuberculosis patients.

**MATERIALS & METHODS**

The present study comprised of 48 tuberculosis patients of both genders. They gave their written consent to participate in the study.

Information about their demographics was documented. There were two groups of patients. For 56 doses (8 weeks), 23 patients in group I received tabs of isoniazid, rifampicin, pyrazinamide, and ethambutol seven days a week. Similarly, 23 patients in group II received tabs of isoniazid, rifampicin, and ethambutol seven days a week. Alcoholism, smoking, and other parameters were noted. The two groups'

treatment outcomes were compared. Relapse, failure, and new treatment were noted. The study's findings were contrasted and statistically inferred. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Groups	Group I (24)	Group II(24)
Male	13	14
Female	11	10

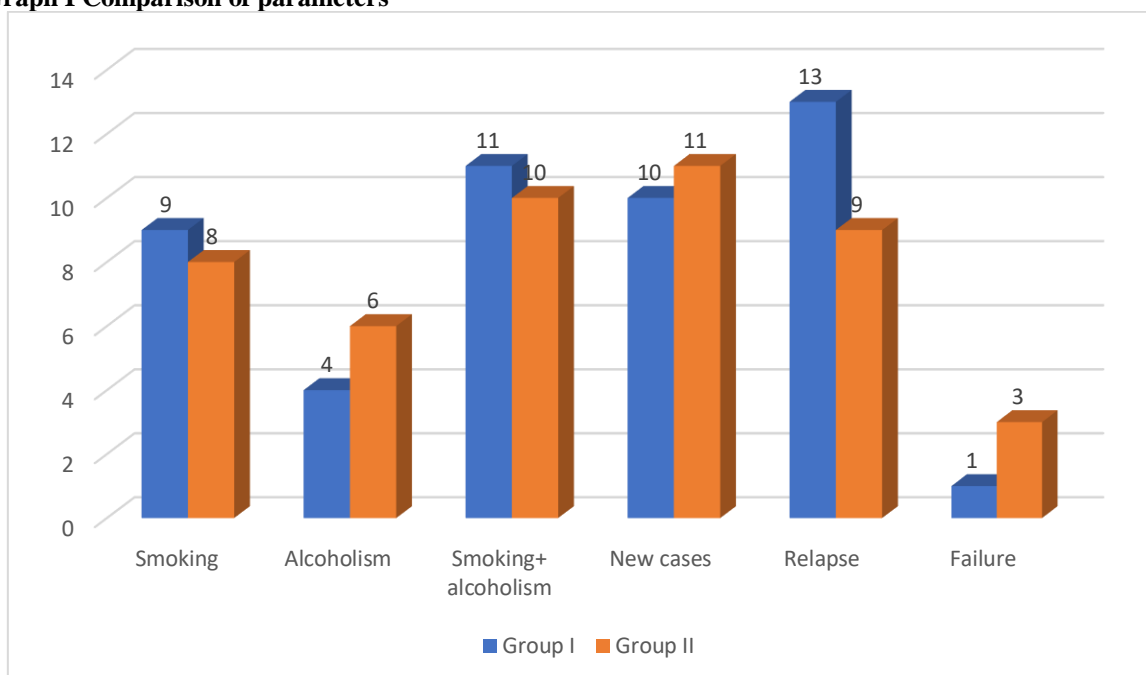
Table I shows that group I had 13 males and 11 females and group II had 14 males and 10 females.

**Table II Comparison of parameters**

Parameters	Group I	Group II	P value
Smoking	9	8	0.52
Alcoholism	4	6	0.74
Smoking+ alcoholism	11	10	0.92
New cases	10	11	0.98
Relapse	13	9	0.84
Failure	1	3	0.05

Table II, graph I shows that smoking was seen in 9 and 8, alcoholism in 4 and 6 and smoking+ alcoholism in 11 and 10. New cases were seen among 10 and 11, relapse cases were 13 and 9 and failure was 1 and 3 patients in group I and II respectively. The difference was significant (P< 0.05).

**Graph I Comparison of parameters**



**Table III Comparison of treatment outcome**

Outcome	Group I	Group II	P value
Success	18	13	0.05
Failed	2	5	0.73
Died	1	2	0.84
Lost follow up	3	4	0.89

Table III shows that treatment outcome was success cases 18 in group I and 13 in group II. Failed 2 in group I and 5 in group II, died 1 in group I and 2 in group II and lost follow up 3 in group I and 4 in group II. The difference was significant (P< 0.05).

**DISCUSSION**

Mycobacterium TB is the bacterium that causes tuberculosis (TB), which is spread through the air. It

can reach every organ in the body by way of the bloodstreams and lymph nodes. The lungs are where it is most frequently discovered. Since the bacteria live

in an inactive state and become active when the immune system deteriorates and infects the tissue of the affected organ, the majority of people who are exposed to TB never experience any symptoms. As a result, there are two types of TB: latent and active. If untreated, active TB can be lethal. TB is caused by a group of bacteria known as the M. TB complex, which includes *Mycobacterium africanum*, *Mycobacterium microti*, *Mycobacterium canetti*, and *M. TB* (the predominant causative organism). When a patient has a droplet infection, they inhale tubercle bacilli, which then lodge in their 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. The present study was conducted to assess different treatment management of tuberculosis patients.

We found that group I had 13 males and 11 females and group II had 11 males and 13 females. Jack et al. determined the feasibility and effectiveness of integrating highly active antiretroviral therapy (HAART) into existing tuberculosis directly observed therapy (TB/DOT) programs, we performed a pilot study in an urban TB clinic in South Africa. Patients with smear-positive pulmonary TB were offered HIV counseling and testing. Twenty HIV-positive patients received once-daily didanosine (400 mg) plus lamivudine (300 mg) plus efavirenz (600 mg) administered concomitantly with standard TB therapy Monday to Friday and self-administered on weekends. After completing TB therapy, patients were referred to an HIV clinic for continued treatment. At baseline, patients had a mean CD4 count of 230 cells/mm<sup>3</sup> (range: 24-499 cells/mm<sup>3</sup>) and a mean viral load of 5.75 log<sub>10</sub> (range: 3.81-7.53 log<sub>10</sub>). Seventeen completed combined standard TB and HIV therapy; 16 of 20 (80%) patients enrolled and 15 of 17 (88%) patients completing standard TB therapy achieved a viral load <50 copies/mL and mean CD4 count increase of 148 cells/mm<sup>3</sup>. TB was cured in 17 of 20 (85%) enrolled patients and 17 of 19 (89%) patients with drug-sensitive TB. Treatment was well tolerated, with minimal gastrointestinal, hepatic, skin, or neurologic toxicity.

We found that smoking was seen in 9 and 8, alcoholism in 4 and 6 and smoking+ alcoholism in 11 and 10. New cases were seen among 10 and 11, relapse cases were 13 and 9 and failure was 1 and 3 patients in group I and II respectively. In a TB hospital, Schulz et al. assessed the results of coinfecting patients beginning antiretroviral therapy (ART) who were given various forms of continuing care. The results of 271 coinfecting patients who began ART were compared in this cohort research. One set of patients received ART and anti-tuberculosis treatment from separate physicians, either in the same clinic or in other ones, after being discharged. The same service provider (integrated care) provided ART and anti-tuberculosis treatment to the other group during the same visit. Results from ART and TB were

compared with clinical and demographic information. Compared to the integrated care model, the vertical care paradigm had worse outcomes for ART (30.1% vs. 7.4%,  $P < 0.001$ ) and anti-tuberculosis treatment (28.7% vs. 5.9%,  $P < 0.001$ ). Whether two service providers were located in the same primary healthcare facility or in different locations did not affect the vertical care model.

We found that treatment outcome was success cases 18 in group I and 13 in group II. Failed 2 in group I and 5 in group II, died 1 in group I and 2 in group II and lost follow up 3 in group I and 4 in group II. Bernard et al. assessed how well TB patients responded to treatment. According to the inclusion and exclusion criteria, 101 patients in total were examined. Among 101 patients, the majority were male and between the ages of 30 and 50. Of these, 57 (56.43%) had pulmonary TB (PTB), 44 (43.57%) had extra PTB, and pleural effusion TB was prevalent (34.09%). Other types of TB included lymph node TB (15.74%), spine TB, TB meningitis (9.09% each), and bone TB (6.481%). The results of the treatment showed that 85 (84%) Ten (10%) received therapy, one (1%) passed away, four defaulted, one was not assessed, and eighty-two developed ADR. According to the causality assessment, it was both feasible and moderately severe.

## CONCLUSION

Authors found that compared to group II patients, group I patients had a higher success rate and fewer failure cases.

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