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Evaluation of Yoga and Breathing Techniques in PTB and EPTB

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ABSTRACT

BACKGROUND

As known, pulmonary tuberculosis caused by *Mycobacterium tuberculosis* infects lungs and extra-pulmonary nothing, but the infection is outside the lungs.

AIM

To evaluating of yoga and breathing techniques in pulmonary tuberculosis (PTB) compared to extra-pulmonary tuberculosis (EPTB).

MATERIAL AND METHODS

Selected patients here who newly diagnosed with PTB, and some patients selected here who introduced with EPTB, those are visited our hospital outpatient's department.

Patients' complaints of sever cough with expectoration; evening raise of temperature; gradual loss of appetite and weight since 2-weeks. We check these patients with clinical grounds by doing sputum fluorescence microscopic examination (FME). FME report suggested the new smear positive. Only those patients we are selected in this study. Patient's complaints with severe pain in Bone and after taking so much medicine the patients still have the pain. The patients confirmed on clinical grounds of ELISA antigen positive, these patients were selected here.

OBSERVATION

The selected patient (both PTB and EPTB) followed by yogic breathing techniques (YBT) 30-minutes daily two times in morning and evening. With anti-tuberculosis treatment up to 60 days.

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CONCLUSION

Breathing technique gives excellent result in PTB as compared to EPTB, it shows better improvement in weight gain, symptoms, breathing function, with showing negative in clinical background. It showed yoga breathing technique with ATT are treating PTB faster as compared to EPTB. But further studies are required to confirmed clinical changes on Antigen and Antibody grounds.

KEYWORDS

Pulmonary tuberculosis; Extra-pulmonary tuberculosis; Anti-tuberculosis treatment; Antigen; Antibody; Yoga; Breathing technique

INTRODUCTION

Tuberculosis is infectious disease caused by bacteria (*Mycobacterium tuberculosis*) that most often affect the lungs and prevalence in India. A total of 1.5 million people died from TB in Worldwide, most leading cause of death TB because of single infectious agent i.e., *Mycobacterium tuberculosis* [1,2]. Tuberculosis is one of the major causes of morbidity and mortality throughout the world, especially in developing country like India [3,4]. In 2018, there are 87% new TB case found as a burden and major threat to society.

As known TB is infectious disease which spread from person to person through the air. When people with PTB that's cough, sneeze, they spread the TB infection into the air. If the person breathes in infected area, then it causes tuberculosis with the patients have impaired immune system [5].

The patients have active TB disease, the symptoms (such as cough, fever, night sweats and weight loss) may be peruse for many months. Moreover, it can lead to transmission of disease to the other people. The patients who have the active TB infection, have the capacity to infect other people through the air contact only [6]. In a one year of approximate 515 other people get infected because of the active tuberculosis infection of one person only. Because of without proper treatment the people with active tuberculosis going to be increased day by day [7].

There are some common symptoms of active pulmonary tuberculosis are cough with sputum and sometimes blood at times of coughing, chest pains, weakness, weight loss, fever, and night sweats, many more [8].

There are so many techniques of diagnosis available like ELISA, sputum smear microscopy, rapid molecular tests and culture-based methods [9,10]. Here, we are evaluating yoga breathing technique in pulmonary tuberculosis and in extra-pulmonary tuberculosis.

MATERIAL AND METHODS

Here in this study, patients followed by anti-tuberculosis treatment with yoga breathing technique followed by 60 days. Patient advice to follow breathing technique 45 min two times per day. Weight of the patient was measured per week Using standard weighing machine, weight in kilogram was measured. Everything keeps in record as cough, weight, fever, chest, weakness. Each symptom measured by the percentage.

Ethics Committee and Consent

Institutional ethics committee of our college of medical sciences and hospital approved the study protocol and written informed consent form was obtained from the patient.

Study

Randomize case control study.

Sample Size

3 patients of PTB and 3 patients of EPTB.

Inclusion Criteria

1. Both male and female were included in this study.
2. The pulmonary and the extra-pulmonary tuberculosis cases viz. Tubercular lymphadenitis, Bone & joint TB, Abdominal TB, Pleurisy with effusion, Genito-urinary TB, etc. were included in this study.
3. All the cases were confirmed on clinical grounds and relevant gold standard diagnostic criteria.

Exclusion Criteria

Other than TB disease excluded here.

RESULT

The improvement of PTB patients was excellent as compared to EPTB patients. On every week we check the patient weight with the record of the cough, weight, fever, chest, weakness. Each symptom measured by the percentage.

As shown in the Figure 1 the PTB patients weight increase up to 80% in the 6th week that is nothing but great achievement.

Breathing yoga practice with anti-tuberculosis treatment give excellent result in PTB patients.

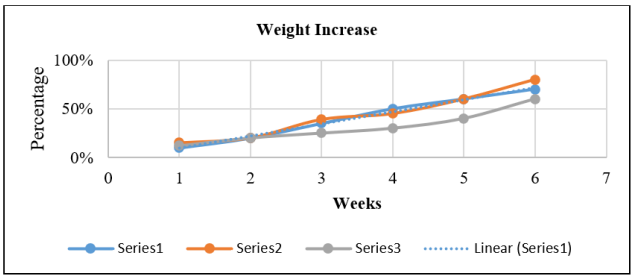

Figure 1: Increase of weight week by week in PTB patients.

Here in this Figure 2, the weight of the patients' increases up to only 25% at 6th week. That increase in weight of the patients is very low as compared to PTB patients. Yoga breathing practice work here, but it required more time to cover up the type of chronic disease. It required more study on the basis of the antigen and antibody profile check-up.

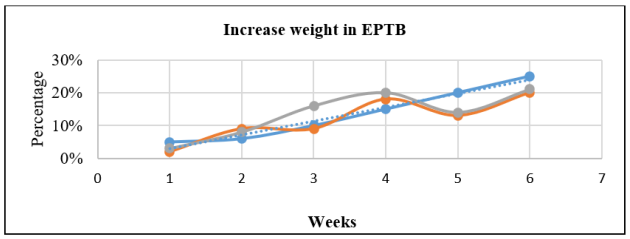

Figure 2: Increase weight in the EPTB patients.

As shown in Table 1, cough decrease by 70% at 6th week. Fever also decreases by 80% at 6th week. Chest and weakness have improvement by 20% and 70% respectively.

Symptoms	1st week	2nd week	3rd week	4th week	5th week	6th week
Cough	Improvement by 15%	20%	35%	40%	50%	70%
Weight	20%	30%	40%	60%	70%	80%
Fever	5%	6%	10%	30%	20%	50%
Chest	2%	4%	6%	10%	15%	20%
Weakness	10%	25%	30%	28%	60%	70%

Table 1: Symptoms wise improvement.

DISCUSSION

Breathing technique improve health and cure upper respiratory tract infection. This shown more improvement in lungs. ATT and Yoga breathing practice is well-being improvement in the PTB because extensive parenchymal and pleural involvement in PTB leads to residual fibrotic changes with reduced vital capacity and other lung volumes are known to reduce stress, which can reduce vulnerability to infections.

Previous study on yoga for PTB showed better weight gain, symptomatic relief, increased lung capacity and better sputum conversion during the intensive phase of ATT supporting our study. The study duration restricted to the intensive phase of ATT is limiting the scope but better improvement in disease prognosis within the same duration will give hope for the patient undergoing ATT, which may be useful for the better control of PTB.

CONCLUSION

Here, in this study the PTB patients have more improvement because of the yoga breathing technique with ATT treatment gives better effect in every symptom as compared to EPTB patients The result of our study suggest it can cure PTB as compared to EPTB.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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