

## **Role of Ayurvedic medicines as an adjuvant in the management of Rajayakshma with special reference to Pulmonary Tuberculosis.: A Systematic Review.**

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### **Abstract-**

Tuberculosis is a global health crisis; it is estimated that 25% of the world's TB cases are found in India. DOTS strategy was launched in 1994 and became the global recommendation for TB control. Ayurveda, an ancient health science may offer some solution, several studies conducted in Ayurvedic colleges and hospitals in the management of the disease. This is the systemic review of such studies to assess the role of Ayurvedic medicine in the management of Rajayakshma (Pulmonary Tuberculosis).

**Aims and objectives-** Role of Ayurvedic medicine in the management of Rajayakshma (Pulmonary Tuberculosis). To study all the published articles in reputed journals related to Rajayakshma and its management.

**Methodology-** Systemic review was carried out using published articles. Keywords used in article search- Rajayakshma, Pulmonary Tuberculosis, Yakshma. Ayurveda.

**Results & Discussions-** A total of 9 articles were selected which were fulfilling our inclusion criteria for the study, studies were conducted using both single and compound drugs, it has been observed that Ayurvedic medicine can show efficiency in relieving Rajayakshma symptoms. Studies suggest that patients treated with Ayurvedic medicine along with Anti-Tubercular Drugs (ATD), show more improvement in relieving symptoms compared to patients treated with only ATD.

**Conclusion-** Research on the role of Ayurvedic medicine in the management of Rajayakshma is limited to only adjunct and supportive therapy, there is a need to conduct more clinical trials using the principle of Ayurveda in the management of Rajayakshma.

**Keywords-** Rajayakshama, Pulmonary Tuberculosis, Yakshma, Ayurveda.

### **Introduction-**

Tuberculosis (TB) is an infectious disease caused by Mycobacterium Tuberculosis. The WHO's 1990 global disease burden report ranked TB in the seventh position and is expected to continue the same until 2020 in terms of morbidity<sup>[1]</sup>. It is a global public health crisis. In India, TB continues to be a devastating health crisis with more than 3, 00,000 deaths, 2.2 million new cases each year<sup>[2]</sup>. In India, TB in the community is managed by a centrally sponsored TB control program known as the Revised National TB Control Programme (RNTCP).

### **Ayurvedic concept of Pulmonary Tuberculosis-**

Yakshma, a disease of ancient origin described in Ayurvedic medicine, could be correlated well with Tuberculosis. In Rajayakshma (Pulmonary Tuberculosis), Dhatukshaya (tissue emaciation or loss) is universally accepted as one of the main reasons to initiate pathogenesis. And there is inevitable metabolic dysfunction (Dhatwagni nashana), out of which Rasa (tissue

fluid), Rakta (blood), Mamsa (muscle), Meda (adipose tissue), and Sukra (generative tissue) are lost. Ultimately, deterioration of immunity (Ojokshaya) is evident. In Tuberculosis starting from Ojokshaya, Sukra, Meda Dhatus to Rasa Dhatu is lost preceding each other, which is known as Pratilomakshaya and is an unusual metabolic change<sup>[3]</sup>.

**Aims & Objectives: -**

To assess the role of Ayurvedic medicine in the management of Rajayakshma.  
To study all relevant published articles and literature.

**Methodology: -**

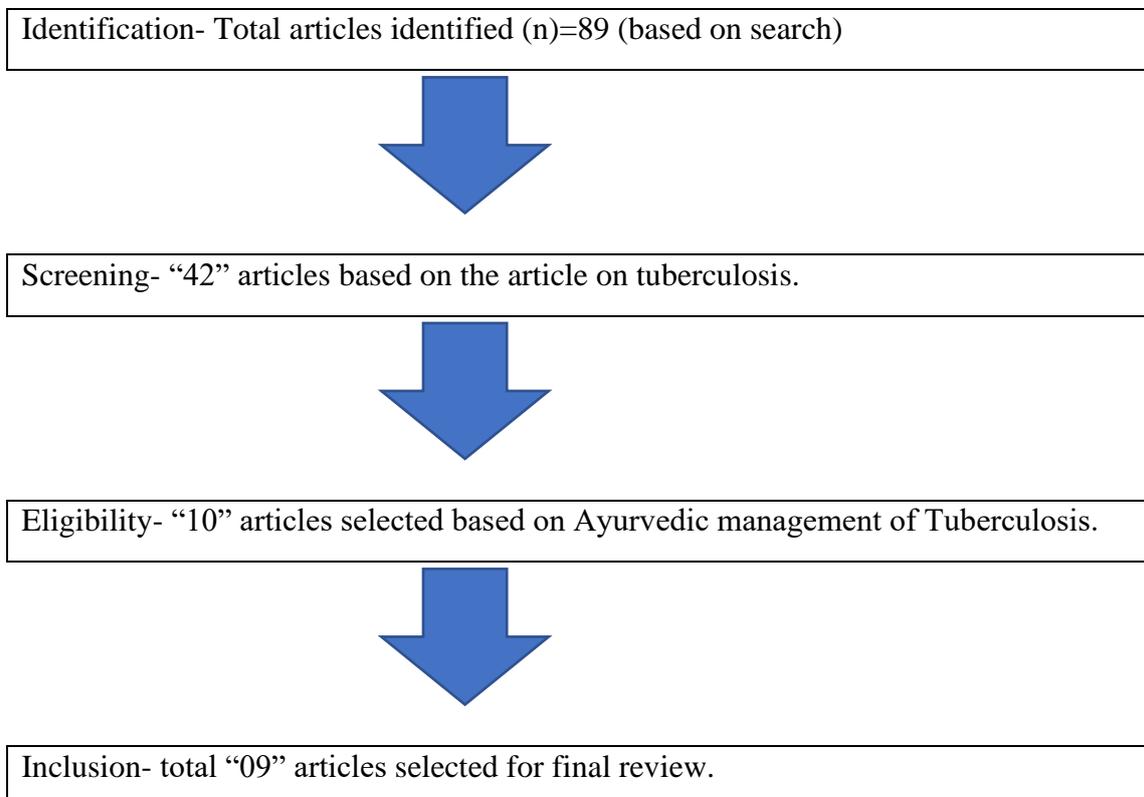
1. Search Strategy: -

The review of literature carried out using the search engine- Pubmed, Ayu journal Hand search  
Using keywords: - “Rajayakshma”, “Pulmonary Tuberculosis”, “Yakshma”, “Ayurveda”.

A systematic search strategy was adopted using “PubMed” and “Ayu Journal” for the main search process.

No limits were adopted such as; journals, years of publication, language, types of articles, or authors. This was done purposefully to obtain a comprehensive list of published articles without the above-mentioned limits. In the second stage, the total articles obtained from searching the database using the above search criteria were pooled together, and articles were initially screened by reading the “Title” and thereafter the “Abstracts.”

Studies not satisfying the inclusion criteria were excluded at these stages. The remaining articles were screened in the final stage by reading the full text and those not meeting inclusion criteria were excluded.



**Results: -**

<b>Author</b>	<b>Journal and Year of Publication</b>	<b>Study type &amp; Sample size</b>	<b>Methodology- drug used.</b>	<b>Major outcome</b>
Debnath, et al.: Ayurvedic adjunct therapy with anti-tubercular drugs in PTB	Journal of Ayurveda & Integrative Medicine   July-September 2012   Vol 3   Issue 3	An initial exploratory observational study (pilot study) and an open-labeled trial with therapeutic control add-on therapy. over 99 newly diagnosed PTB patients were selected.	Ashwagandha & Chyawanprash	The symptoms subsided, body weight showed improvement, ESR values were normal, there was an appreciable change in IgA and IgM patterns and significantly increased the bioavailability of isoniazid and pyrazinamide were recorded.
Dr. Atul Vamanrao Mule et al. The Kasaghna effect of Akshawaleha in the management of Rajayakshma	Journal of Ayurveda and Integrated Medical Sciences   Jan - Feb 2020   Vol. 5   Issue 1	A single patient with symptoms of Rajayakshma was selected from Dr. M.N. Agashe Charitable Hospital, Satara.	Akshawaleha in the management of Kasa in Rajayakshma.	Akshawaleha is effective in the management of Kasa in Rajayakshma as a Kasaghna medicine.
Rana et al. .AYURVEDIC MANAGEMENT OF MDR TUBERCULOSIS; A CASE STUDY	World Journal of Pharmaceutical Research, Vol 7, Issue 16, 2018.	A single patient case study was done with the case of MDR TB.	Aushadha chikitsa along with Panchakarma chikitsa.	All medications were given with standard allopathic medicines. After completion of anti cox treatment also these medications continued. The patient was symptomatically relieved.
Dornala and Dornala: Bhringarajasava as Naimittika Rasayana in Pulmonary Tuberculosis	AYU   Oct-Dec 2012   Vol 33   Issue 4	N controlled open trial. 60 patients with PTB were included in this study.	60 patients were divided into 2 groups. Both groups were on DOTS regime, test group was given DOTS+Bhringarajasava. Control group was only on DOTS.	There was a significant improvement in subjective and objective parameters. When Bhringarajasava was given along with DOTS.

<p>Vyas, et al.: Role of Rasayana compound as an adjuvant in Tuberculosis with AKT</p>	<p>AYU   Jan-Mar 2012   Vol 33   Issue 1</p>	<p>Single-blind controlled trial. 133 TB patients were selected.</p>	<p>Rasayana drugs in a capsule form, 133 TB patients with Cat-I, type as per RNTCP classification</p>	<p>The compound was found to decrease Cough (83%), fever (93%), Dyspnea (71.3%), Hemoptysis (87%), and increase body weight (7.7%) with high statistical significance (P&lt;0.001).</p>
<p>Pathrikar Anaya Ashish &amp; Dwivedi Amarprakash Prasadhnarayan : Clinical Study Of Rasayan Choorna As An Adjuvent Therapy For Pulmonary Tuberculosis</p>	<p>IAMJ: Volume 3; Issue 2; February- 2015</p>	<p>Open Controlled Randamized clinical study. 60 newly diagnosed PTB patients were selected.</p>	<p>60 newly diagnosed PTB pt were selected, the control group was given DOTS and the trial group was given Rasayana choorna along with DOTS.</p>	<p>use of Rasayana Choorna (Guduchi + Gokshur+ Shatavari) along with DOTS is effective to early relief in symptoms like Sakapha Kasa, Jwara, Ansatapa, Vaisvarya, Parshvahool, Shirashool, Shleshmavaman, Aruchi and on Irritability and difficulty in concentration. Significant weight gain, decrease in value of ESR, is also observed by Rasayana Choorna</p>
<p>Supriya B. Kurane et al- Rehabilitation of Pulmonary Tuberculosis</p>	<p>International Journal of Research in Health Sciences. Jul–Sept 2014 Volume-2, Issue-3</p>	<p>Clinical trial</p>	<p>Group-1 given kharjuradi ghrita, group-2 given kharjuradi ghrita with pranayam.</p>	<p>The Kharjuradi ghrita gives significant results in the period of post tuberculous treatment to increase appetite, to strenthen body and to tackle different diseases like Kasa, Jwara etc. Pranayam is a body and mind</p>

				strengthening exercise and helps to recover the damage that took place due to Pulmonary Tuberculosis.
Bisht D. et. al. Pippali Rasayana in certain respiratory disorders.	AYU-VOL. 30, NO. 3 (JULY-SEPTEMBER) 2009	Double trial groups. 32 patients with respiratory disorder were selected.	Pippali Rasayana given in group-1 along with allopathic medicine, group-2 given only allopathic medicine.	Features like appetite, digestion, weight gain improved due to improved nutrition at the cellular level by Deepan-Pachan and Agnivardhan properties of Pippali Rasayana. Improved nutrition to each and every body tissue results in improvement in features like general and mental feeling of well being, ability to work.
Lalit Nagar et.al., Rudanti as a Rasayana drug in Rajayakshma	International Journal of Ayurvedic Medicine, Vol 11 (1), 55-60	Single blind therapeutic control randomized clinical trial. Sample size-100	Sample size-100 Divided in 2 groups- test group and control group each consist 50 patient, irrespective of age, sex, religion. Drug used- Rudanti powder- 5gm bd for 6 months.	The drug Rudanti possess properties of Rasayana. It shows significant result on relieving the symptoms of Rajayakshma. Ex.- Jwara, Shwasa, Kasa, Parshwashool, Atisara, Aruchi, Daurbalya, Raktasthivana.

### Discussion-

9 different studies conducted in different clinical settings in India, evaluated the properties of some of the Ayurvedic therapeutics as an adjunct to Anti-TB treatment.

Total 9 different studies were reviewed with varies in sample size.

All studies have used different compounds to treat the disease.

### Main Findings:-

**A study on Ashwagandha & Chyawanprash on TB**, total 99 patient of freshly diagnosed PTB were enrolled in this study. They were divided in 3 groups, group 1- treated with ATD

drugs, group-2 treated with ATD + Ashwagandha Churna, group-3 were treated with ATD + Chyawanprash. Study was last for 28 days, on 29<sup>th</sup> day group-2 & 3 shown significant results compare to group-1. Bacterial load, hematological value, and other associated symptoms of PTB i.e. anorexia, cough, weakness shown markedly improvement. In this study above mentioned drugs used as an adjunct therapy.<sup>[4]</sup>

**A study on Kasaghna effect of Akshavaleha:-** this is a single case study, in which diagnosed case of PTB with symptoms of Kasa, Parshwashoola and dyspnoea. Kasa was the cardinal symptom. Patient was treated with Akshavaleha, with duration of 2 months, along with ATD drugs. After patient shows improvement in Kasa along with other symptoms i.e. anorexia, Parshwashoola. Akshavaleha shows Kasaghna effect<sup>[5]</sup>.

**A study on various medicine along with Panchakarma:-** a single case study with Multi Drug Resistant-TB(MDR-TB), was treated with Shwasa Kasa Chintamani Rasa, Rajamrugank Rasa, Swarna Sutshekhar Rasa, Shwasa Kuthar Rasa, Nagarjunabhra Rasa, along with Snehan and Urah Abhyanga, along with ATD. Result shows that before intervention of Ayurvedic drugs, patient was not getting any symptomatic relief, after starting of above mentioned treatment patient symptoms got relieved.<sup>[6]</sup>

**A study on Bhringarajasava as a Naimittika Rasayana:-** with sample size 60, PTB cases were selected, divided in 2 groups, control group and test group, and assessment was done at subjective criteria i.e. Shwas, Kasa, Jwara, weight loss and objective criteria i.e. chest x-ray and other hematological value. Both the groups were treated with ATD, test group were given additionally Bhringarajasava, which shows marked improvement in both subjective and objective criteria. There was significant improvement in symptoms.<sup>[7]</sup>

**A study of Rasayana compound as an adjuvant:-** with sample size of 133, patient diagnosed with PTB divided in 2 groups, group a- control group treated with ATD drugs, group b- study group treated with ATD drugs along with Rasayana compound which consists (Amalaki, Ashwagandha, Guduchi, Yashtimadhu, Sariva, Haridra, Pippali, Kushta, Kulinjana) for duration of 60 days. Symptoms like Raktashthivana, Swasa, Kasa, decreased appetite, fatigue were improved in group B, compare to group A.<sup>[8]</sup>

**A study on Rasayana Choorna as an adjuvant for PTB:-** newly diagnosed 60 patient of PTB were selected and divided in 2 groups. Control group were treated with DOTS (Direct observation treatment study), trial group were treated with DOTS along with Rasayana Choorna (Guduchi, Gokshur, Shatavari) for the duration of 2 months, Addition of Rasayana Choorna with DOTS provided 2 weeks early recovery in symptoms than in plain DOTS. It also showed significant decrease in cardinal symptoms.<sup>[9]</sup>

**A study on Kharjuradi Ghrita and Pranayama:-** diagnosed 60 PTB patient were divided in 2 groups, group A- given Kharjuradi Ghrita, group B- given Kharjuradi Ghrita along with Pranayama, for a month. Both groups showed significant improvement in weight gain, incidence of respiratory disease, appetite. Group B shown much better result compared to group A.<sup>[10]</sup>

**A study on Pippali Rasayana:-** 27 patient enrolled with different respiratory disorder, in which 9 patient were diagnosed with PTB, which were divided in 2 group, group A treated with ATD, group B treated with ATD along with Pippali Rasayana, for duration of 45 days. On the basis of this study it can be concluded that trial drug helps in improving weight gain, appetite, digestion, and relieving Kasa, Shwasa and other cardinal symptoms.<sup>[11]</sup>

**A study on Rudanti Churna:-** 100 newly diagnosed cases of PTB were divided in 2 groups, group A were treated with DOTS, and other group B were treated with DOTS along with Rudanti Churna for 6 months. There was no significant difference after 6 months in both groups but when we analyse percentage of relief after 3 months of treatment, there were significant difference noted. Trial group shown improvement in subjective criteria.<sup>[12]</sup>

### **Conclusion:-**

It has been observed that above mentioned all 9 studies used various compounds for treating Rajayakshma. Ayurvedic medicine can be used as an adjuvant therapy along with traditional treatment, which helps to relieve the symptoms and gives strength. In patients of Tuberculosis which can be compared with Rajyakshma, there are 3 major events occurring viz. Srotorodh, Raktadi Dhatukshaya and Dhatwagnimandya. In many of studies Rasayana drug were used as an adjuvant and it shows significant improvement in subjective parameter as well as objective parameters. In Rajayakshma patient will be having Dhatukshaya, Rasayana compound found to be very useful nourishing Rasa Dhatu and other Dhatus which helps to improve appetite, weight gain, and strength. Rasayana therapy has antioxidant effect along with nutritive value. Rasayana drugs can be use as adjuvant therapy for such diseases, this kind of study help to understand aspects of various kind of formulation on certain disease. By above mentioned study we can conclude that Rasayana drugs will be the best choice of drugs to treat such kind of disease. Still more study is required in this field.

Research in the role of Ayurvedic medicine in management of Rajayakshma is limited to only adjunct and supportive therapy, there is need to conduct more clinical trials using principle's of Ayurveda in management of Rajayakshma.

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