

## CLINICAL STUDY OF *RASAYAN CHOORNA* AS AN ADJUVANT THERAPY FOR PULMONARY TUBERCULOSIS

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### ABSTRACT

In India, Tuberculosis is the major cause of death and it kills more adults than any other infectious disease. Patients of Pulmonary Tuberculosis represents with symptoms viz.-Cough since 3 weeks or more than it(Dry or Productive), Fever on and off, Haemoptysis, Anorexia, Weight loss, Breathlessness and selective Chest pain. The Government has developed Revised National Tuberculosis Control Programme, which includes DOTS which is the main weapon to combat TB today. However, poor drug compliance by patients being one of the foremost reasons for frequent relapses and bacterial resistance. Furthermore, due to its longer duration and many side effects, it is necessary to develop an adjuvant therapy which will minimize the hazards and help patient to improve the immune status. Pulmonary tuberculosis can be correlated with *Rajayakshma* as it has resembling symptoms like *Kasa*, *Ansaparshwabhitap*, *Jwara*, *Shonitshthiwan*, *Arochaka*, *Parshvahool*, *Shwas* etc. Thus, there is major role of *Rasayana*, *Agni Vardhan* and *Dhatuposhan chikitsa* in the management of *Rajayakshma*. Further, *Rasayana Choorna* has all such properties which provides all that is needed. Keeping this in mind herbal drug formulation known as *Rasayana Choorna (Guduchi + Gokshur + Shatavari)* was used as an adjuvant therapy to DOTS. The study showed very overwhelming results. The therapy proved effective in relieving symptoms like *Sakapha Kasa*, *Jwara*, *Ansatapa*, *Vaisvarya*, *Parshvahool*, *Shirashool*, *Shleshmavaman*, *Aruchi* etc. and significant weight gain, decrease in value of ESR was also observed.

**Key words:** Tuberculosis, DOTS Therapy, *Rajayakshma*, *Rasayana Choorna*

### INTRODUCTION

Public health is major anchor for progress of any country. It is often taken for granted and its value is not fully understood until it is lost. In India, there are many health problems which should be solved as a prime importance. Cholera, Malaria, Tuberculosis and many more disease are big issues in public health. Cholera is called as “father of public health problems” where as Tuberculosis is called as “Captain of Ship to death”.<sup>[1][2]</sup>

Special study conducted by WHO estimated that about 1/3<sup>rd</sup> world's population is infected by *Mycobacterium tuberculosis*.<sup>[3]</sup> It kills more adults in India than any other infectious dis-

ease. Hence, it's a major barrier for socio-economic development of India. Keeping all this in mind government has developed Revised National Tuberculosis Control Programme, which includes DOTS .<sup>[4]</sup> It is the main weapon to combat TB today. Poor drug compliance by patients being one of the foremost reasons for frequent relapses and bacterial resistance.<sup>[5]</sup> Also due to its longer duration and many side effects, it is necessary to develop an adjuvant therapy which will minimize the hazards and help patient to improve the immune status.<sup>[6][7]</sup> Patients of Pulmonary Tuberculosis represents symptoms such as, Cough since 3

weeks or more than it(Dry or Productive), Fever on and off, Haemoptysis, Anorexia, Weight loss, Breathlessness and Chest pain.

Pulmonary tuberculosis can be correlated with Rajayakshma as it has resembling symptoms like *Kasa, Ansaparshwabhitap, Jwara, Shonitshthiwan, Arochaka* and *Shwas*. Furthermore, there is major role of ‘Rasayana, Agni wardhan and Dhatuposhan chikitsa’ in this condition. *Rasayana Choorna* has such properties which provides all that is needed. [8][9]

Considering, all above facts,herbal drug formulation known as *Rasayana Choorna (Guduchi + Gokshur+ Shatavari)* was used as an adjuvant therapy to DOTS in Tuberculosis patients. [10] The study showed very overwhelming results.

#### HYPOTHESIS

*Rasayana Choorna* can act as an adjuvant therapy to DOTS for Pulmonary Tuberculosis.

#### AIM OF STUDY

To study the effect of *Rasayana Choorna* as adjuvant therapy to DOTS in the management of Pulmonary Tuberculosis

#### OBJECTIVES

- 1) To assess the possibility of decreasing the duration of Anti tubercular drug therapy.
- 2) To assess whether early recovery is possible or not.
- 3) To improve the immune status of the patient.

#### STUDY DESIGN –

**Place of work :** A.P.M.’s Ayurved Mahavidyalaya & Hospital, Sion, Mumbai-22

**Type of Study:** Open Controlled Randomized clinical study (Phase 2)

**Trial group –**

DOTS + *Rasayana Choorna ( 1Gm.each of Guduchi+Gokshur+Shatavari –Twice a day)*

**Control group –** DOTS only.

**Drug Administration:**

<b>Drug</b>	<i>Rasayana Choorna (Guduchi + Gokshur+ Shatavari)</i>
<b>Route of Administration</b>	Oral
<b>Dose</b>	1 Gm each (Total-3 gm. per dose) - twice a day
<b>Kala</b>	<i>Vyanoudana (After meal on morning and evening)</i>
<b>Anupana</b>	<i>Jala</i>
<b>Duration</b>	2 months
<b>Follow up</b>	Every 8 <sup>th</sup> Day

**Table 1:** Table showing drug administration in therapeutic manner

#### METHODOLOGY

##### i) Selection of Patients:-

##### a) Diagnostic Criteria:-

Newly diagnosed 60 patients of pulmonary tuberculosis who fulfill the criteria were selected randomly ,then divided into two groups, each of 30 Patients. First was treated with DOTS + *Rasayana Choorna* (Trial group), second was with plain DOTS (Control group) for 2 months.

##### b) Inclusion criteria-

1. Newly diagnosed patients of pulmonary tuberculosis
2. Age – Above 18 years and below 60 yrs.
3. DOTS criteria- DOT I and DOT III

##### c) Exclusion criteria-

1. Age- Below 18 years and above 60 years
  2. Extra pulmonary tuberculosis.
  3. DOTS criteria- DOT II.
  4. Tuberculosis along with other diseases like DM, COPD, AIDS
1. Pregnant and Lactating mother.
  2. Acute life threatening conditions.

##### d) Criteria for assessment-

**( I ) Subjective criteria-**

Most of the symptoms and signs of *Rajayakshma* described in Ayurveda are subjective in nature. To give results objectively and for statistical analysis, multidimensional scoring pattern was adopted. This score was obtained before and after the treatment through statistical analysis and percentage relief was taken out to assess the efficacy of therapy.

The details of the score adopted for the main signs and symptoms in present study were as follows:

The gradations were given to symptoms.

**Nil- 0**

**Mild- +**

**Moderate- ++**

**Severe- +++**

Sr.No	Symptoms	Mild	Moderate	Sever
1	<i>Sakaph Kasa</i> ( cough ) in a day	Coughing sub- side within 1- 2 min	Coughing Subside within 3-4min	<b>Coughing Subside after 5min.</b>
2	<i>Jwara</i> ( fever) No of episodes in a week	1 to 2 episodes	3 to 4 episodes	<b>5 to 7 Episodes</b>
3	<i>Ansatap</i> ( Pain at shoulder region)	No pain	0 to 5	<b>5 to 10 Worst Possible</b>
4	<i>Vaisvarya</i> (Hoarseness of voice)	Change in Voice	Audible voice	<b>Unable to Interpret</b>
5	<i>Parshvashool</i> ( Pain at flank region)	No pain	0 to 5	<b>5 to 10 Worst Possible</b>
6	<i>Shirshool</i> ( Headache )	Occassional sensation	Intermittent Sensation	<b>Always Sensation</b>
7	<i>Raktavaman</i> (Haemoptysis in 24 hrs)	Upto 60cc	60 to 300cc	<b>&gt; 300cc</b>
8	<i>Shleshma vaman</i> ( Vomiting of cough )	1- 2 episodes	3- 5 episodes	<b>&gt; 5 episodes</b>
9	Shvasa ( Dyspnoea on stepping)	Upto 20 steps	Between 10–20 Steps	<b>Upto 10 steps</b>
10	<i>Varchogad</i> ( Irregular bowels )	1 to 2 episodes	3 to 5 episode	<b>&gt; 5 episodes</b>
11	<i>Aroochi</i> ( % of decreased diet )	10 to 30 %	30% - 60%	<b>60% &amp; &gt; than it</b>
12	<b>Irritability &amp; Difficulty In concentration</b>	<b>Dificulty dur- ing Extra work ac- tivity</b>	<b>Dificulty in Domestic / job activity</b>	<b>Dificulty in Self regular activ- ity.</b>

**Table 2: Gradation of Sign and Symptoms for Assessment of efficacy of therapy**

**(II) Objective Criteria for Assessment:**

It was assessed on the basis of Body weight and Biochemical investigations. Chest X-ray

done before starting the treatment and after completion of treatment in terms of percentage relief and statistical evaluations.

S.No	Objectives	Before	After
1	Body weight		
2	Haemogram	Hb%	
		WBC	
		ESR	
3	Sputum for AFB		
4	Notification of Chest X-ray changes		

**Table 3: Objective Criteria for Assessment**  
**OBSERVATION AND RESULT:**

**1. Efficacy of Therapy:**

At the end of the duration of treatment total effect of the therapy was assessed on the basis of following criteria -

Cured - 100% relief in signs and symptoms

Markedly improved - more than 75% relief in signs and symptoms

Moderately improved - 50% - 75% relief in signs and symptoms

Improved - more than 25% relief in signs and symptoms

Unchanged - less than 25% relief in signs and symptoms.

The data obtained from the patients was subjected to statistical analysis. Group wise analysis of data was done using "Student's t test"

**2. Statistical Analysis of the Therapy**

During the study following observations were made:

Sr.No.	Symptom	Group A		Group B	
		% of patients affected	% of Relief	% of patients affected	% of Relief
1.	<i>Sakapha Kasa</i>	100%	86.66%	100%	<b>76.66%</b>
2	<i>Jwara</i>	100%	90.00%	100%	<b>86.66%</b>
3	<i>Ansatap</i>	50%	93.33%	66.67%	<b>100%</b>
4	<i>Vaisvaryya</i>	100%	100%	100%	<b>100%</b>
5	<i>Parshvashool</i>	96.67%	100%	80%	<b>100%</b>
6	<i>Shirashool</i>	100%	100%	96.67%	<b>86.20%</b>
7	<i>Raktvaman</i>	30%	100%	30%	<b>100%</b>
8	<i>Shleshmavaman</i>	100%	100%	96.67%	<b>96.55%</b>
9	<i>Shwasa</i>	100%	90%	100%	<b>76.67%</b>
10	<i>Varchogad</i>	80%	79.16%	76.67%	<b>82.60%</b>
11	<i>Aruchi</i>	100%	96.67%	100%	<b>73.33%</b>
12	<b>Irritability and difficulty in concentration</b>	<b>100%</b>	<b>96.67%</b>	<b>100%</b>	<b>96.67%</b>

**Table 4: Table showing statistical analysis of efficacy the therapy**

**DISCUSSION AND CONCLUSION**

In this study, *Rasayana Choorna* (*Guduchi + Gokshur+ Shatavari*) having properties such as *Vatakaphaghatwa, Kshayapahatwa, Balya, Rasayan and Atishukrala*

was used for *Samprapti Bhanga* (breaking of pathogenesis) and showed action fantastically.

In patients of Tuberculosis which can be compared with *Rajyakshma*, there are 3 major events occurring viz. *Srotorodh*, *Raktadi Dhatukshaya* and *Dhatwagnimandya*.

*Rasayana Choorna* decreased *Srotorodh* which provided proper nourishment of *Dhatus*. Thus properly nourished *Dhatus* improved *Bala* of patient also decreased *Kshaya* due to improper *Dhatu* formation. Further due to proper nourishment of all *Dhatus*, *Atyanta shaddha*- '*Shukra*' is properly formed and thus *Vyadhikshamatwa* was improved. *Rasayan* effect helped patient to combat disease and enhanced proper and early recovery.

In patients of Tuberculosis, following symptoms were decreased with *Rasayana Choorna* - Cough and fever due to *Vatkaphaghanta*, Anorexia due to *Tiktarasa* and *Ushnaveerya* and Weight loss due to *Balya* and *Rasayan* effect.

In Addition to all this *Rasayan Choorna* has shown Anti Mycobacterial activity which will enhance the activity of Antibiotic Regimen.

It is clear that the 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*.

From above study we can conclude that-

- *Rasayana Choorna* can fulfill the requirement of Adjuvant therapy in management of Pulmonary tuberculosis
- 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.
- In Haematological parameters markedly significant reduction was found in total

leukocyte count and significant reduction in ESR in all patients.

## REFERENCES:

1. Revised National Tuberculosis Control Programme (RNTCP). RNTCP at a glance. Central TB Division, Directorate General of Health Services, Ministry of Health and Family Welfare, New Delhi, Government of India. Available from: <http://uttarkashi.nic.in/Dept/Health/RNTCP/RNTCP.pdf> accessed on January 26, 2010.
2. *Anti-Tuberculosis Drug Resistance in the World*. Report No.4. Geneva, Switzerland: WHO; 2008. The WHO / IUATLD *Global Project on Anti-tuberculosis Drug Resistance Surveillance*; p. 394. WHO/HTM/TB/2008
3. Chandrasekaran S, Chauhan MM, Rajalakshmi R, Chaudhuri K, Mahadev B. Initial drug resistance to anti-tuberculosis drugs in patients attending an urban district tuberculosis centre. *Indian J Tuberc*. 1990;37:215-6.
4. Gupta PR, Singhal B, Sharma TN, Gupta RB. Prevalence of initial drug resistance in tuberculosis patients attending a chest hospital. *Indian J Med Res*. 1993;97:102-3.
5. D'souza DT, Mistry NF, Vira TS, Dholakia Y, Hoffner S, Pasvol G, et al. High levels of multidrug resistant tuberculosis in new and treatment-failure patients from the Revised National Tuberculosis Control Programme in an urban metropolis (Mumbai) in Western India. *BMC Public Health*. 2009;211:1-9.
6. Brahma SK, Debnath PK. Therapeutic importance of rasayana drugs with special reference to their multi dimensional actions. *Aryavaidyam*. 2003;16:160-3.
7. Gulati K, Roy A, Debnath PK, Bhattacharyya SK. Immunomodulatory Indian medicinal plants. *J Nat Remedies*. 2002;2:121-31.

8. Vagbhata, Ashtang Hridaya, with Vidyotini Hindi Commentary of Kaviraj Atrideva Gupta, Uttarsthan, Chapter 39, Verse no.1-2, Page no.182, Chaukhambha prakashan, Varanasi, 2009.
9. Agnivesh, Charak Samhita, with Charaka chandrika Hindi commentary, by Dr. Brahmanand Tripathi and Dr. Gangasahay Pandey, Sutrasthan, Chapter 11, Verse no.3, Page no.233, and Chikitsasthan, Chapter 1, Verse no.4-7, Page no.78, Chaukhambha Surbharati Prakashan, Varanasi, 2007.
10. Sushruta, Sushrut Samhita, edited by Kavirak Ambikadatta Shastri, Chikitsa sthan, Chapter 27, verse no.4, Page no.120, Chaukhambha Sanskrit Sansthan, Varanasi, 2007.

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