

## PREVALENCE OF PULMONARY TUBERCULOSIS AMONGST THE BAIGAS - A PRIMITIVE TRIBE OF MADHYA PRADESH, CENTRAL INDIA

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### Summary

**Background:** A community-based cross-sectional tuberculosis (TB) disease prevalence survey was undertaken amongst the Baiga primitive tribal community of Baiga Chak in central India.

**Material and Methods:** A population of 2,359 was covered under the study. Sputum samples were collected from chest symptomatics and examined for smear microscopy and culture.

**Results:** Overall prevalence of PTB was 146 (95% C.I: 0 - 318) per 100,000 population.

**Conclusion:** The findings suggest that TB is not a major public health problem amongst this tribal group. However, there is still the need to maintain and further strengthen TB control measures on a sustained and long term basis in the area.

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**Key words:** Pulmonary Tuberculosis, Tribal, Baiga, Central India

## INTRODUCTION

Tuberculosis (TB) remains a major global public health problem and its control a challenge in developing countries like India. Baseline data on the tuberculosis (TB) situation is essential to know the extent of the problem and also to know the impact of the control programme in the population. A nationwide disease survey conducted by the Indian Council of Medical Research (ICMR) during 1955-58 provided, for the first time, information on the TB disease situation in the general population of the country.<sup>1</sup> The survey, however, did not assess the TB disease situation among tribal population in the country. Few studies have been conducted in tribal populations since the ICMR survey.

Tribal populations are groups of people sharing common cultural and socio-religious beliefs, residing in a particular geographic area and often practising endogamy. They are an underprivileged group usually having poor access to health delivery systems. Among the tribal groups in the state of Madhya Pradesh, three groups have been identified

as "primitive" based on their low levels of education, socio-economic backwardness and stagnant or low level of population growth.<sup>2</sup> The Baiga are one of the oldest aboriginal tribes of central India and are one of the primitive tribes in Madhya Pradesh. Information on the TB situation in this tribal community is not available. Hence, the present survey was undertaken to estimate the prevalence of pulmonary tuberculosis (PTB) amongst them.

## MATERIAL AND METHODS

In 1890, an area (Baigachak) in the Dindori district of Madhya Pradesh was officially notified by the British Administration as the land for Baigas.<sup>3</sup> Due to the undulating terrain, physical barriers like thick forest patches, rivulets and hillocks, the Baiga villages are generally isolated from all other communities.

Of the total 8,400 Baiga population in Baigachak, it was decided to cover a 25% random sample of the population keeping in view the limited resources and difficult terrain. Villages in the area

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were selected randomly in order to cover the sample size of 2,100 with the study carried out in five villages during January to March 2008. A complete census of the villages was done by house-to-house visits to register all the individuals. From all the individuals aged 15 years and above, information on the symptoms suggestive of PTB was elicited by health workers and recorded on an individual card in a pre-coded form. Two sputum samples - one spot and one overnight - were collected and examined for AFB by smear microscopy and culture. A person with bacteriologically positive result by either smear and / or culture was considered a case of PTB. All cases were referred to the concerned health authorities for treatment by the RNTCP. The data was analyzed using SPSS package (13.0 version). The study was approved by the Ethics Committee of RMRCT. Informed written consent was obtained from all the individuals.

## RESULTS

A total of 2,359 population was covered under the study. Of the 1,410 individuals eligible for screening, 1,374 (97.4%) individuals were screened for symptoms. Of these, 115 (8.4%) individuals were found eligible for sputum collection and the sputum was collected from all of them (Table). Thus, the coverage of above 95% was achieved for both symptom elicitation and sputum collection. The

overall prevalence of PTB was found to be 146 (95% C.I: 0 - 318) per 100,000 population.

## DISCUSSION

The present study is the first reported community-based TB prevalence study among the Baigas of Baigachak in Dindori district. As no baseline data is available, the findings of the present study form the basis for future work in this area. The prevalence of PTB in the present study was 146 per 100,000 population. TB prevalence surveys carried out in different parts of the country both in the general population<sup>1,4</sup> and in isolated tribal communities<sup>5-8</sup> show wide variation in prevalence rates. A comparable prevalence of 133 was reported amongst the tribal population from Wardha district, Maharashtra.<sup>4</sup> A recently conducted study among tribal population of Madhya Pradesh reported a higher prevalence of 387.<sup>7</sup> Studies in other parts of the country, however, have reported much higher prevalence rates of PTB amongst tribal communities. A very high prevalence of 1,270 has been reported in the Saharia primitive tribal community of Madhya Pradesh, and of 740 in the tribal community of the Car Nicobar of the Andaman & Nicobar islands.<sup>5,6</sup> Reported prevalence in the general population ranges from 144 in Wardha district, Maharashtra State to 1,070 in Raichur district, Karnataka State.<sup>4,8</sup>

**Table:** Village -wise coverage and sputum positive cases detected amongst Baigas of Baiga Chak

S. No	Village	Total Population Covered	No. eligible for screening	Population screened	No. sputum eligible	No. sputum collected	No. sputum Positives
1.	Khamera	331	186	180 (96.7)	19	19	0
2.	Khaparipani	321	188	182 (96.8)	14	14	0
3.	Dhurkuta	636	345	336 (97.4)	39	39	1
4.	Shital pani	362	226	216 (95.6)	17	17	1
5.	Jaldha	709	465	460 (98.9)	26	26	0
<b>Total</b>		<b>2359</b>	<b>1410</b>	<b>1374 (97.4)</b>	<b>115</b>	<b>115 (100)</b>	<b>2</b>

\* Figures in the parentheses indicate percentage

**The results of the present study suggest that PTB is not a major health problem amongst this primitive tribal community at the present time. However, the situation may change if appropriate TB control measures are not taken.**

At present, this population generally lives in inaccessible forest areas, with poor access to health delivery systems. With the developmental activities in the area, they are now in a phase of transition with major changes in their life-style occurring. If this change does not go hand-in-hand with improved health care delivery, diseases such as TB could increase due to various factors such as increased migration to other areas, etc. The Revised National Tuberculosis Control Programme (RNTCP) has been in operation in the district from 2003–04. With effective implementation of RNTCP over a number of years, a significant decrease in the prevalence of TB disease has been demonstrated in Thiruvallur district, south India.<sup>9</sup> But the performance of RNTCP in Dindori district, as seen from the 2008 annual data is not impressive with a case detection and success rate of 41% and 79% respectively amongst the new smear positive cases.<sup>10</sup> **Effective and strengthened implementation of quality services under RNTCP need to be ensured on a sustained and long term basis in the area.**

The limitations of the study, however, need to be considered while interpreting the results. These are - small population of the tribal group and incredibly small number of cases detected in the survey. Despite this, the study provides important information on tuberculosis in this primitive ethnic group of central India.

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