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*Original Research Article*

# Assessment of Prevalence of Pulmonary Tuberculosis among Patients of Known Population: A Retrospective Study

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## ABSTRACT

**Background:** Tuberculosis remains a worldwide problem despite well documented, well publicized methods of prevention and cure. Hence; the present study was undertaken to assess the prevalence of pulmonary tuberculosis among patients of known population.

**Materials & Methods:** A total of 1265 patients were analyzed during the study period who reported to the department of pulmonary medicine. Only those cases were categorized as pulmonary TB in which confirmed culture and clinical diagnosis was made. A master chart was prepared for recording the clinical and radiographic profile of all the patients. Exclusion criteria for the present study included: Subjects with presence of any other co-morbid condition, diabetic or hypertensive subjects. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for assessment of level of significance.

**Results:** The overall prevalence of pulmonary TB was found to be 20.47 percent. 54.05 percent of the patients were males while the remaining 45.95 percent of the patients were females.

**Conclusion:** Pulmonary tuberculosis is significantly affecting a considerable patient population. Therefore; awareness education programmes are strongly recommended in future for decreasing its prevalence and morbidity.

**Key words:** Prevalence, Pulmonary, Tuberculosis.

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## INTRODUCTION

Tuberculosis remains a worldwide problem despite well documented, well publicised methods of prevention and cure. Tuberculosis (TB) is a major killer worldwide. The World Health Organization estimates that in 2011, there were 8.7 million incident cases of TB, 1.4 million deaths from TB including 0.43 million deaths from HIV-associated TB. Poverty and HIV infection are major reasons for its persistence.[1-3] Pulmonary tuberculosis and lung cancer have common symptoms like cough, expectoration, fever, hemoptysis, weight loss, and breathlessness. Most tuberculosis programmes use direct smear examination of sputum but, if resources permit, culture is desirable. Reliable susceptibility testing is a luxury few developing countries can afford, although it is especially desirable for purposes of re-treatment.[4] Rapid methods of culture and susceptibility testing are widely available in the wealthier nations.[5- 7] Hence; the present study was undertaken to assess the prevalence of pulmonary tuberculosis among patients of known population.

## MATERIALS & METHODS

The present study was conducted in the Department of TB Chest, Rajshree Medical Research Institute & Hospital, Bareilly, Uttar Pradesh (India) and it included assessment of prevalence of pulmonary tuberculosis among patients of known population. Ethical approval was obtained from institutional ethical committee and written consent after explaining in detail the entire research protocol. A total of 1265 patients were analyzed during the study period who reported to the department of pulmonary medicine. Only those cases were categorized as pulmonary TB in which confirmed culture and clinical diagnosis was made. A master chart was prepared for recording the clinical and radiographic profile of all the patients. Exclusion criteria for the present study included: Subjects with presence of any other co-morbid condition, diabetic or hypertensive subjects. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for assessment of level of significance.

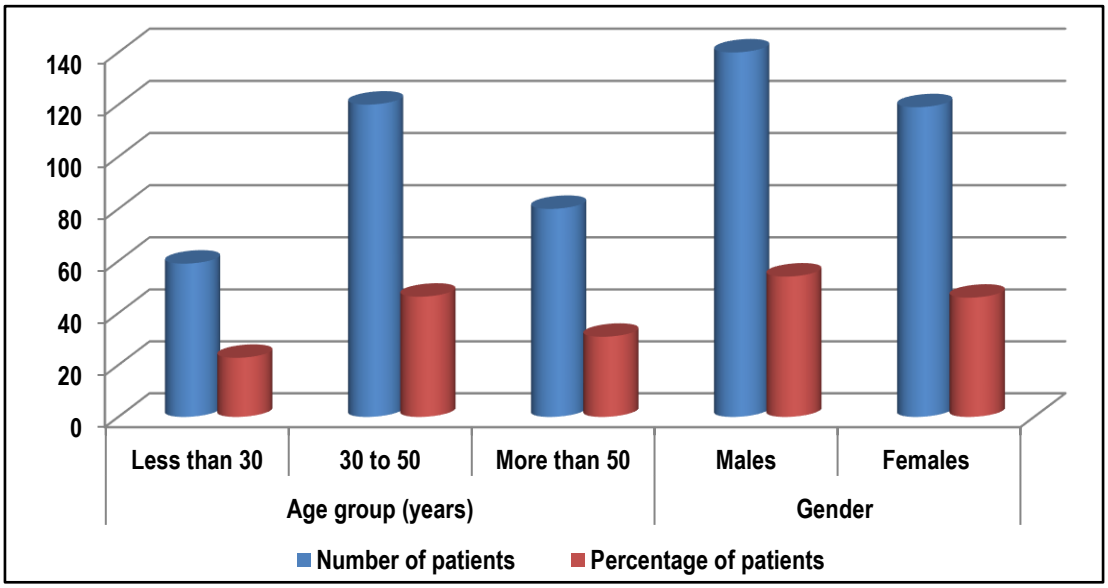
**Table 1: Prevalence of Pulmonary TB**

| Parameter | Number of patients | Percentage |
|---|---|---|
| **Prevalence of Pulmonary TB** | 259 | 20.47 |

**Table 2: Age-wise and gender-wise distribution of patients with pulmonary TB**

| Parameter | | Number of patients | Percentage |
|---|---|---|---|
| **Age group (years)** | **Less than 30** | 59 | 22.78 |
| | **30 to 50** | 120 | 46.33 |
| | **More than 50** | 80 | 30.89 |
| **Gender** | **Males** | 140 | 54.05 |
| | **Females** | 119 | 45.95 |

**Graph 1: Prevalence of pulmonary TB among subjects divided on the basis of age and gender**




## RESULTS

The present study was conducted in the Department of TB Chest, Rajshree Medical Research Institute & Hospital, Bareilly, Uttar Pradesh (India). Data records of a total of 1265 patients were analysed during the study period. A total of 259 patients were affected with pulmonary TB. The overall prevalence of pulmonary TB was found to be 20.47 percent. 46.33 percent of the patients with pulmonary TB belonged to the age group of 30 to 50 years. 30.89 percent of the patients with pulmonary TB belonged to the age group of more than 50 years. 22.78 percent of the patients with pulmonary TB belonged to the age group of less than 50 years. 54.05 percent of the patients were males while the remaining 45.95 percent of the patients were females.

## DISCUSSION

TB, one of the oldest recorded human afflictions, is still one of the biggest killers among the infectious diseases, despite the worldwide use of a live attenuated vaccine and several antibiotics. New vaccines and drugs are needed to stem the worldwide epidemic of TB that kills two million people each year. To rationally develop new antitubercular agents, it is essential to study the genetics and physiology of M. tuberculosis and related mycobacteria. It is equally important to understand the M. tuberculosis-host interaction to learn how these bacteria circumvent host defenses and cause disease.[7, 8]

Data records of a total of 1265 patients were analysed during the study period. A total of 259 patients were affected with pulmonary TB. The incidence of TBI in the United States has declined during the past decade, but this decline has been much less pronounced among foreign-born Americans. More than half of active TB cases in the United States currently occur in foreign-born individuals, and most cases result from reactivation of LTBI. The effect of global migration on TB has been seen throughout the developed world, most dramatically in London, where cases of active TB increased by 50% between 1999 and 2009, mostly among foreign-born individuals.[7-10] Patients with suspected active pulmonary TB should submit 3 sputum specimens for acid-fast bacilli smears and culture, with nucleic acid amplification testing performed on at least 1 specimen. For patients with LTBI, treatment with isoniazid for 9 months is preferred. Patients with active TB should be treated with multiple agents to achieve bacterial clearance, to reduce the risk of transmission, and to prevent the emergence of drug resistance.[10, 11]

In the present study, the overall prevalence of pulmonary TB was found to be 20.47 percent. 46.33 percent of the patients with pulmonary TB belonged to the age group of 30 to 50 years. 30.89 percent of the patients with pulmonary TB belonged to the age group of more than 50 years. Morbidity and mortality associated with TB are greater in developing nations where 95% of all cases and 98% of all deaths associated with TB were reported to occur in 1990. In Mexico, an increase of 28% in the number of cases of tuberculosis was reported from 1984 to 2001, with 14,612 in 1984 and 18,746 in 2001 notified to the General Direction of Epidemiology.[11,12]

In the present study, 22.78 percent of the patients with pulmonary TB belonged to the age group of less than 50 years. 54.05 percent of the patients were males while the remaining 45.95 percent of the patients were females. Imam T et al assessed the prevalence of Pulmonary TB amongst patients attending Infectious Diseases Hospital, Kano. Sputum samples were obtained from three thousand six hundred and seventy nine (3679) patients. Samples were smeared on glass slides, stained using Ziehl Neelsen Stain and later observed under light (oil immersion) microscopy. The results showed that were positive for tuberculosis had prevalence of 541 (14.7%) out of 3679 subjects. The age group 30-43 years had the highest prevalence of 145 (17.0%) out of 858 of PTB positive subjects. There was no significant difference between age groups and sex of subjects with PTB positivity; similarly, the difference between prevalence of PTB in male and female subjects between the three year period was not significant. It is noteworthy that PTB is still a serious disease in this part of the world, thus, there is need for stepping up TB awareness, treatment and control program.[13]

## CONCLUSION

From the above results, it can be concluded that pulmonary tuberculosis is significantly affecting a considerable patient population. Therefore; awareness education programmes are strongly recommended in future for decreasing its prevalence and morbidity.

## REFERENCES

1. Dormandy T. The white death. London: Hambledon Press, 1999.
2. Corbett EL, Watt CJ, Walker N, Maher D, Williams BG, Raviglione MC, et al. The growing burden of tuberculosis: global trends and interactions with the HIV epidemic. Arch Intern Med 2003;163: 1009-12.
3. Tackling poverty in tuberculosis control. Lancet 2005;366: 2063.
4. Dye C. Global epidemiology of tuberculosis. Lancet 2006;367: 938-40.
5. Crampin AC, Floyd S, Mwaungulu F, Black G, Ndhlovu R, Mwaiyeghele E, et al. Comparison of two versus three smears in identifying culture-positive tuberculosis patients in a rural African setting with high HIV prevalence. Int J Tuberc Lung Dis 2001;5: 994-9.
6. Schaaf HS, Beyers N, Gie RB, Schaaf HS, Beyers N, Gie RP, et al. Respiratory tuberculosis in children: the diagnostic value of clinical features and special investigations. Pediatr Infect Dis J 1995;14: 189-94.
7. Centers for Disease Control and Prevention (CDC) Reported Tuberculosis in the United States, 2009. Atlanta, GA: US Department of Health and Human Services, CDC; 2010. http://www.cdc.gov/tb/statistics/reports/2009/pdf/report2009.pdf Accessed February 22, 2011.
8. Geng E, Kreiswirth B, Driver C, et al. Changes in the transmission of tuberculosis in New York City from 1990 to 1999. N Engl J Med. 2002;346:1453-58.
9. Cain KP, Benoit SR, Winston CA, Mac Kenzie WR. Tuberculosis among foreign-born persons in the United States. JAMA. 2008;300:405-12.
10. Zumla A. The white plague returns to London–with a vengeance. Lancet. 2011;377:10-11.
11. Raviglione MC, Snider DE Jr, Kochi A. Global epidemiology of tuberculosis: morbidity and mortality of a worldwide epidemic. JAMA. 1995;273:220–26.
12. General Direction of Epidemiology. Unified information system for the epidemiological surveillance/SSA 2012. http://www.epidemiologia.salud.gob.mx/dgae/infoepid/vig_epid_manuales.html.
13. Imam TS, Oyeyi TI. A retrospective study of pulmonary tuberculosis (PTB) Prevalence amongst patients attending infectious diseases Hospital (IDH) in Kano, Nigeria. Bayero Journal of Pure and Applied Sciences, Dec 2008; 1(1):10– 15.

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