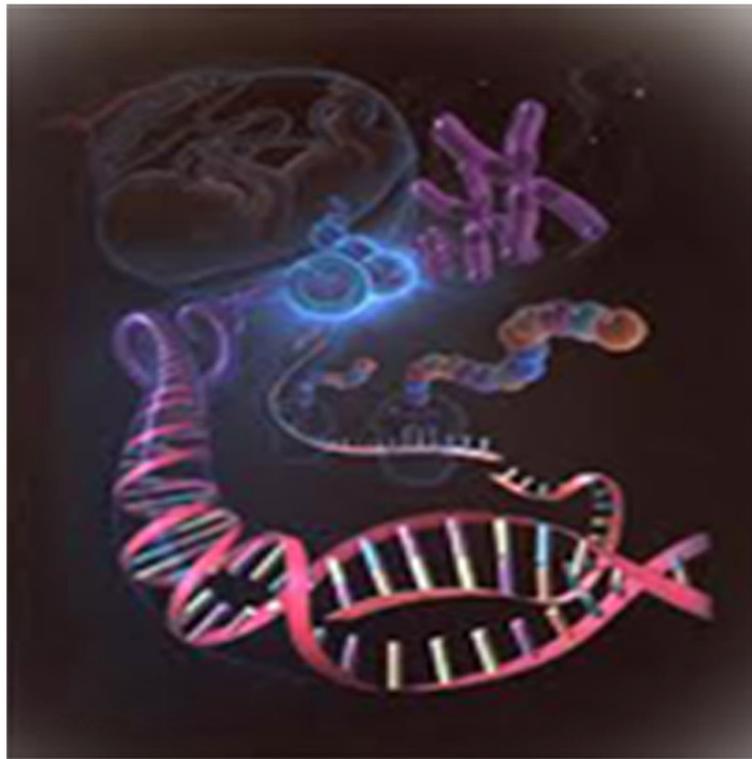




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Research Paper

DEMOGRAPHIC ANALYSIS OF EXTRA PULMONARY TUBERCULOSIS AT A TERTIARY CARE HOSPITAL IN NORTH INDIA

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Background and Objectives: Tuberculosis continues to be an important public health problem in India and globally. Differences in the likelihood of extra pulmonary tuberculosis have been observed in various studies among tuberculosis patients by demographic characteristic. This study aimed to find out the socio-demographic determinants of patients with extra pulmonary tuberculosis in Mullana, Ambala (India). **Methods:** A total of 100 confirmed cases of extra pulmonary tuberculosis attending the OPDs and IPD of medicine, pediatrics, obstetrics and gynecology, orthopedics and surgery department were included. A pre tested, semi structured questionnaire was administered to all the cases or their attendants to assess the social determinants of EPTB. The Statistical package for the Social Sciences (SPSS), version 12, was employed for data analysis. Chi Square test and percentages were employed. **Results:** The analysis showed higher prevalence among women (66%). The maximum percentage of positivity was found among the patients of age group 20-40 years and reducing thereafter. 65% were between 20- 40 years, 25% were in the range of 40-60 years and only 8% were 60 years onwards $p = 0.905$. **Conclusion:** Lymph nodes are the most common EPTB. The proportion of EPTB among females was found to be higher than males.

Keywords: Tuberculosis, Socio-Demographic Determinants, Extra Pulmonary Tuberculosis (EPTB), Analysis

INTRODUCTION

Tuberculosis is an airborne infectious disease caused by *Mycobacterium tuberculosis*. In the last 100 years, 200 million people have died of TB. The propagation of tuberculosis is directly related

to the socioeconomic and hygienic conditions of human populations. Tuberculosis can involve any organ system in the body. While pulmonary tuberculosis is the most common presentation, Extra Pulmonary Tuberculosis (EPTB) is also an important clinical problem. (Dutt, 1999)

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The term EPTB has been used to describe isolated occurrence of tuberculosis at body sites other than the lung. However, when an extra pulmonary focus is evident in a patient with pulmonary tuberculosis, such patients have been categorized under pulmonary tuberculosis as per the guidelines of the World Health Organization (WHO). (Maher, 1997)

The common organs involved with EPTB include lymph nodes, pleura, bones and joints, brain, meninges, gastrointestinal organs, liver, genitourinary organs, peritoneum, and pericardium. EPTB infection with mycobacterium remains a diagnosis that is often difficult to establish. In patients with active mycobacterium tuberculosis infection, it is often initially misdiagnosed as cancer. (Aisenberg, 2005) The fatal synergy of HIV and tuberculosis, and the emergence of multidrug resistant have further contributed to the re-emergence of TB in many parts of the world (Chaisson, 2008). The proportion of patients with EPTB relative to Pulmonary TB (PTB) varies and depends on associated diseases, ethnicity and countries (Ilgazli, 2004). EPTB is on the increase world over. However, very limited data is available about the situation of EPTB in the developing countries in general. Keeping in view the lack of information about EPTB, the present study was conducted to find out the socio-demographic determinants of patients with extra pulmonary tuberculosis .

MATERIALS AND METHODS

Study Population and Design

This descriptive study was conducted to find out the socio-demographic determinants with EPTB in confirmed cases of EPTB at M.M. Institute of Medical Sciences and Research, Mullana;

Ambala (India). This study was conducted during January 2010 to December 2011 at Mycobacteriology division of Department of Microbiology.

A total of 500 samples of suspected patients of extra pulmonary tuberculosis attending the OPD and IPD of Medicine, Pediatrics, Obstetrics and Gynecology, Surgery and Orthopedics Departments were investigated. Confirmation of diagnosis of EPTB was done by microscopy and culture positivity (LJ Medium). Out of these samples, 100 confirmed cases of EPTB were included who were found to be positive by either of the two methods.

Data Collection

The relevant clinical history was collected via structured questionnaire which included patient's name, age, gender, residential areas and education. Cases which were having inadequate demographic information or those who were unwilling to participate were excluded from the study. Ethical clearance was taken from the institutional ethical committee. An informed consent was taken from all the patients enrolled in the study.

Data Analysis

The Statistical package for the Social Sciences (SPSS), version 12, was employed for data analysis. Chi Square test and percentages were employed. A statistical significance level of 0.05 was used in all analyses.

RESULTS

Out of 100 cases of EPTB, 42% were of the tuberculosis of the lymph nodes and 30% were patients of endometrial tuberculosis (Table 1).

Table 1: Sample Wise Distribution of Extrapulmonary Tuberculosis

Location	Percentage (%)
Ascitic fluid	2
Bone scrapings	1
Bone marrow	1
CSF	4
Cyst wall	1
Endometrial biopsy	30
Gastric aspirate	1
Lymph node aspirate	42
Menstrual blood	2
Ovarian cyst fluid	2
Pericardial fluid	1
Pleural fluid	4
Pus	7
Synovial fluid	1
Urine	1
Total	100

The females constituted the majority of the patients (66%) in present study (Table 2). The analysis shows important differences, by age in the patient presenting with extra pulmonary tuberculosis. A strong association found was between EPTB and young age in our study. 65% was between 20- 40 years of age, 25% were in the range of 40-60 years and only 8% were 60 years onwards $p = 0.905$ (Table 3).

Table 2: Sex-wise Distribution of Patients

Sex	% Of Extra Pulmonary Tuberculosis
Male	34
Female	66

DISCUSSION

Out of 100 cases of EPTB, 42% were of the tuberculosis of the lymph nodes and 30% were

Table 3: Age-wise Distribution of Patients

Age	Male	Female	Total
1-20	1	1	2%
20-40	22	43	65%
40-60	9	16	25%
Above 60	2	6	8%

CHI SQUARE 0.56 D.F= 3 $p= 0.905$.

patients of endometrial tuberculosis (Table 1). It is the most common site of extra pulmonary tuberculosis in developing countries. Our result was comparable with that of the other studies from Nepal and Thailand (Sreeramareddy, 2008; Wiwatworapan, 2008).

An important finding in this investigation was the predominance of EPTB among the young age group (20-40 years). These results are consistent with the studies (Makaju *et al.*, 2010) which showed that the frequency of EPTB was more in age >25 years (60.2%).

(Karim *et al.*, 2006) showed that the majority (40%) of the patients were between 21-30 years age group followed by 31.2% in 12-20 years age groups. The reasons that make this age group vulnerable to tuberculosis are many. They are socially more active and are exposed to an open case of tuberculosis more than any others.

In this study although not statistically significant, the proportion of EPTB among females is higher than males. As observed in other studies, female tuberculosis patients were considerably more likely to present with an extra pulmonary manifestations than male patients. (Othman, 2011; Ullah, 2008; Lilly, 2001). The possible reason could be high female illiteracy,

poverty, and little access to health care. Pregnancies and lactation stress can also weaken their immunity.

The findings of this study were however different from other studies which indicated that the majority of the patients were male. (Faiz *et al.*, 1990) showed 62% were male and remaining were females. (Farer *et al.*, 1979) reported the prevalence in male (55%) and female (45%). Higher positivity could be due to the fact that all these studies were from developed countries.

Main limitation of this study was lack of the assessment of other risk factors of EPTB. Therefore, further study has to be done in order to identify various risk factors of EPTB.

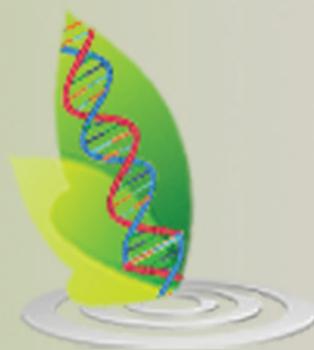
CONCLUSION

Lymph nodes are the most common form of EPTB found in the study. Although not statistically significant, the proportion of EPTB among females was found to be higher than males. Further study to identify risk factors is necessary for prevention and proper management of EPTB.

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