

## ***Frequency of Genitourinary Tuberculosis in patients with Pulmonary Tuberculosis (Sputum AFB Positive)***

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**Objective:** This study was carried out to determine the frequency of Genitourinary Tuberculosis in patients with active Pulmonary Tuberculosis.

**Design of study:** Cross sectional descriptive.

**Place and Duration:** T.B outdoor of Gulab Devi Hospital and Urology outdoor of Jinnah Hospital, Lahore during the period Oct, 2002 to Oct, 2004.

**Materials and Methods:** Two hundred patients with pulmonary tuberculosis, 117 males and 83 females, ranging from 17 to 80 years of age (mean 37.9 years) were included in the study. Hundred patients were freshly diagnosed cases (group - 1) while the remaining hundred patients were already diagnosed cases of pulmonary tuberculosis and had received anti-tuberculous treatment for at least three months (group - 2). Diagnosis of pulmonary tuberculosis was based on sputum smear positive for acid fast bacilli (AFB) by Ziehl Neelsen (ZN) staining technique. 24 hours urine was collected from each patient. Each specimen was examined for presence of mycobacterium tuberculosis by ZN staining and culture on Lowenstein Jensen (LJ) medium. Positive for one or both of these procedures was taken as positive for genitourinary tuberculosis.

**Results:** Eighteen patients (18%) in group-1 and twenty three patients (23%) in group-2 were found positive for genitourinary tuberculosis.

**Conclusion:** Genitourinary tuberculosis is not uncommon in patients with pulmonary tuberculosis. Therefore, urine samples of patients with pulmonary tuberculosis should be examined for presence of mycobacterium tuberculosis.

**Keywords:** Frequency; genitourinary tuberculosis; pulmonary tuberculosis.

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### **Introduction**

Tuberculosis is one of the oldest diseases known to mankind. In developing countries Tuberculosis is a major problem. Since 1981, AIDS has increased the mortality from mycobacterium infections with a high incidence of extra pulmonary involvement.<sup>1</sup> Genitourinary tuberculosis is not a primary manifestation of the disease but is often secondary to the presence of a primary lesion elsewhere. The spread to kidneys is usually haematogenous from the lungs, bone or gastrointestinal tract.<sup>2</sup> In Pakistan, more than 0.3 million new cases of tuberculosis are added each year.<sup>3</sup> The number of admissions of cases for the extra pulmonary tuberculosis has increased 2-3 folds in recent years. Present study was planned to determine the frequency of genitourinary tuberculosis in patients with active pulmonary tuberculosis.

### **Materials and Methods**

Two hundred patients with pulmonary tuberculosis, 117 males and 83 females ranging from 17 to 80 years of age (mean 37.9 years) from October 2002 to October 2004, selected from urology outdoor of Jinnah hospital and T.B outdoor of Gulab Devi hospital, Lahore were included in the study. Out of these 200 patients, 100 were freshly diagnosed cases, placed in group-1. They had either not received anti-tuberculous treatment or were on treatment for less than one week. The remaining 100 patients were already diagnosed

cases of pulmonary tuberculosis, placed in group-2. They had been on antituberculous treatment for at least three months. Clinical history and relevant information was collected in a proforma. Diagnosis of pulmonary tuberculosis was based on sputum smear positive for AFB by ZN staining technique. 24 hours urine was collected in a sterilized jar, centrifuged and sediment was used for ZN staining and AFB culture on LJ medium slants which were incubated at 37°C, examined weekly up to six weeks before declaring negative and was observed for dry, rough, cream (buff) coloured colonies which were further identified by biochemical reactions.<sup>4</sup> Positive for one or both of these procedures was taken as positive for genitourinary tuberculosis.

### **Results**

Eighteen patients (18%) in group-1, whereas twenty three patients (23%) in group-2 were found positive for genitourinary tuberculosis. Table 1 shows frequency of genitourinary tuberculosis in patients with pulmonary tuberculosis.

### **Discussion**

Tuberculosis is one of the leading fatal diseases in the world. The true incidence of genitourinary tuberculosis may be under-estimated. Since its diagnosis is challenging as laboratory, radiological and ultrasound findings may be

absent. Exact incidence of genitourinary tuberculosis all over the world is unknown. Dealing with Genitourinary Tuberculosis a very few number of studies are available. 8-10% of the patients with pulmonary tuberculosis have genitourinary tuberculosis in developed countries, where as in the developing countries 15-20% patients are found to have mycobacterium tuberculosis in their urine.<sup>5</sup> Kaswan HS et al from India reported that urine of 6% of cases of pulmonary tuberculosis was positive for AFB on culture.<sup>6</sup> In another study carried out in United States, 217 patients (6.31%) out of 3438 patients of pulmonary Tuberculosis were positive for genitourinary tuberculosis.<sup>5</sup>

**Table 1:** Frequency of Genitourinary Tuberculosis in Patients with Pulmonary Tuberculosis.

Group	Genitourinary Tuberculosis	
	Positive* (%)	Negative (%)
Freshly diagnosed Patients (n=100)	18 (18%)	82 (82%)
Patients already on Anti-tuberculosis treatment (n=100)	23 (23%)	77 (77%)
Total (n=200)	41 (20.5%)	159 (79.5%)

\*Positivity based on results of Ziehl-Neelsen smear and AFB culture.

Positive for one or more of these was taken as positive for Genitourinary Tuberculosis.

In the present study the overall frequency of genitourinary tuberculosis was found 20.5%. The prevalence of 24.8% was found by Iqbal R et al, Mayo hospital Lahore.<sup>7</sup> Another study from Lahore reported genitourinary tuberculosis 28.8% with urine AFB culture positivity 13.6%.<sup>8</sup> Our findings are more close to Iqbal R et al<sup>7</sup> as compared to a study from PMRC TB Research Centre Lahore.<sup>8</sup>

It is evident from the results of present and other available studies that genitourinary tuberculosis is one of the most frequent types of extra pulmonary tuberculosis. The frequency of infection with mycobacterium tuberculosis is also increasing all over the world. World Health Organiza-

tion in 1993 declared tuberculosis a global emergency but it still continues to account for burden of mortality all over the world. Our health planners should give full attention to decrease the increasing incidence of the disease. This can be achieved by improving awareness in general public about the disease, BCG vaccination, early diagnosis and proper management.

## Conclusion

Genitourinary tuberculosis is not uncommon in patients with pulmonary tuberculosis. Therefore, urine samples of patients with pulmonary tuberculosis should be examined for the presence of mycobacterium tuberculosis.

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