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The Prevalence of smear-positive pulmonary tuberculosis in Hyderabad Sindh

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ABSTRACT

Tuberculosis (TB) is an infectious disease that is caused by a bacterium called *Mycobacterium tuberculosis*. We have studied 276 cases in Hyderabad to investigate the persistence of TB and potential threat aspects for condensing TB, within which the positive kinfolk's history of TB proves to be substantial threat factor. Previously diagnosed patients were poorly obedient to anti-TB treatment. This study focuses the exposure of convicts to TB due to the presence of highly transmittable cases. This study sturdily specified the necessity of an effective treatment program in the broad-spectrum community. This study was conducted in medical units 1of Liaquat University of Medical & Health Sciences (LUMHS) Jamshoro. Out of total, 274 patients studied, majority of the patients were from poor, deprived and lower social class. To control this infection early diagnosis of the disease and its treatment under the supervision is very important.

Introduction

TUBERCULOSIS (TB) is the leading source of death among other ailments, describing of 126% of unavoidable adult deaths in the world (1, 2). Plausibly one third of the world's population (1.86 million) is verminous by Mycobacterium tuberculosis, throughout the last decade the prevalence of TB contagion has augmented within industrialized countries either. Unpredictable levels of endemicity of TB infection have been reported over the world, among them south-east Asia tends to be the utmost aggrieved: the reported positive M. tuberculosis population reach up to 44%.

Pakistan has been graded fifth among the 22 high-incidental countries with persistence of TB (3). Pakistan is a low-income zone with a high pervasiveness of tuberculosis (TB) (4). Conferring to World Health Organization (WHO) estimates that TB identifies as smear- positive has been predicted within currently less than 20% of the roughly 8 million annually (5). Among several strategies chemoprophylaxis is recommended to battle against TB on the basis of screening of high threatened populace for M. tuberculosis infection to classify appropriate personages (6-7). Associates of TB cases establish a high-risk group for accomplishing M. tuberculosis infection (8-9) infection through close contacts have been shown around 30%, and at minimum infested contacts partially display development of the infection in the first 2 years. (10). The present study has been conducted within 276 cases in Hyderabad to investigate the prevalence and identification of the risk factors for smear-positive indicant cases of pulmonary TB in Hyderabad, Sindh, Pakistan, mainly by inheritance and close contact with the TB patients.

Material and Methods

This investigation has been conducted among three medical units of Liaquat University of Medical &Health Sciences (LUMHS) Jamshoro. The group of patients were been selected within the age range of 12-85years and above, patients having clinical features suggestive of pulmonary tuberculosis as evening pyrexia, weight loss, productive cough, haemoptysis, malaise, tiredness, anorexia, chest pain, and patients with raised ESR and chest X-ray finding abnormal shadows, cavitation, and/or abnormality in the lymph nodes relative symptoms to Pulmonary tuberculosis were included. Patients having tuberculosis other than pulmonary went thorough clinical assessment after admission with emphasis on clinical history, physical examination, and necessary investigations. A printed proforma containing a comprehensive record of all patients was completed from each patient. Blood with ESR, Urine R/E, Chest X-ray, Blood Urea, Blood Sugar, and smear examination by direct microscopy were been done for all patients.

Results

Out of total 276 patients, 78 patients (28.3%) were Pulmonary Smear Positive, 98 patients (35.5%) were Pulmonary Smear Negative and 100 patients (36.2%) were Extra Pulmonary Tuberculosis (Table-1). Among these 276 patients, 164 patients (59.4%) were females and 112 patients (40.6%) were male. 119 individuals (43.1%) were between 12– 65 years of age (Table-2). Majority of the infected persons were associates of poor and inferior local class. Common signs at presentation were anemia, had bronchial breathing. During investigation most of the patients especially female were having Hb level of 8–10 gm/dl.

Figure 1: Diagnosis of Percent distributions of smear positive pulmonary TB prevalence rate by percentage of different types

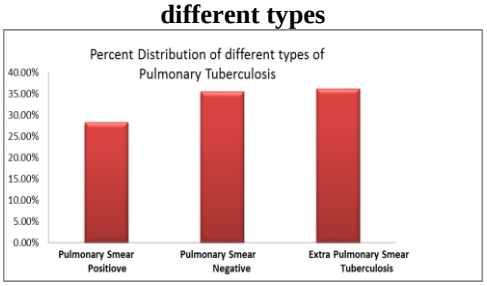

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Figure 2: Percent and frequency distributions of smear positive pulmonary TB prevalence rate by gender

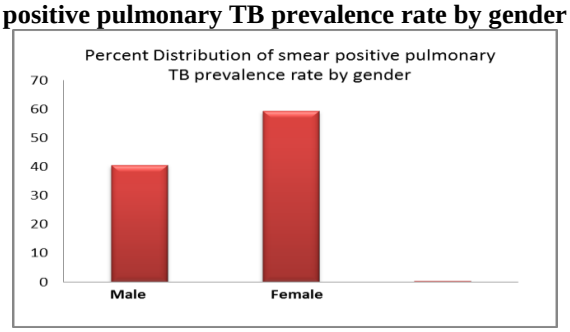


Figure 3: Percent and frequency distributions of smear positive pulmonary TB prevalence rate by age

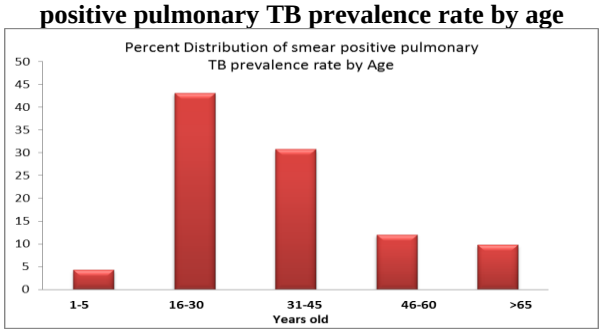


Figure 4: Percent and frequency distributions of smear positive pulmonary TB prevalence rate by relapse

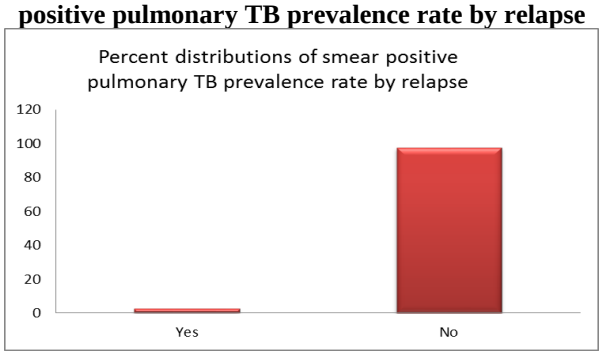


Figure 5: Percent and frequency distributions of treatment Failure within smear positive pulmonary TB

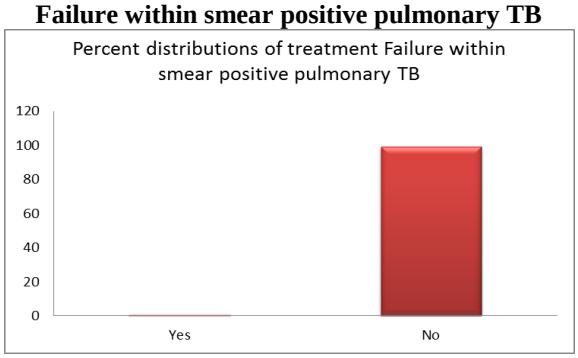


Figure 6: Percent and frequency distributions of treatment after defaults within smear positive pulmonary TB.

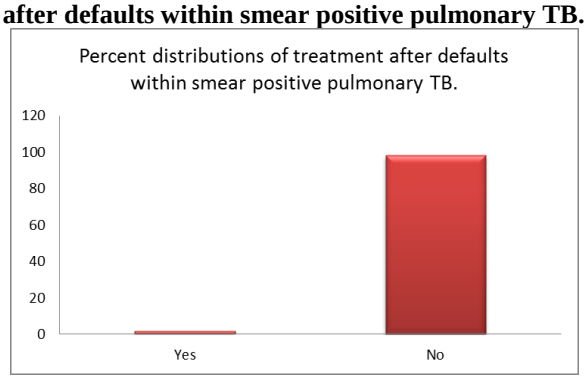
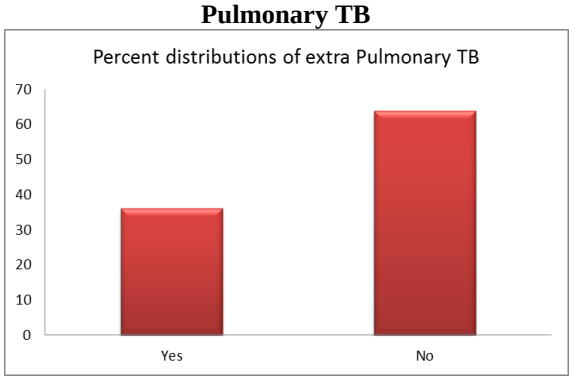


Figure 7: Percent and frequency distributions of extra Pulmonary TB



Discussion

It has been confirmed by our study that smear-positive pulmonary tuberculosis has been found on individuals of low socioeconomic group and in females. The patient's family is being always on the risk of transmit the tuberculosis infection. Tuberculosis has caused more deaths than any other infectious disease and 95% of these deaths are in the developing world. It is the fourth major cause of death in Pakistan. In 2007 there were an estimated 181/100,000 new cases and 223/100,000 prevalent cases in Pakistan. Based on the incident cases in 2007 globally, WHO ranked Pakistan eighth in the list of high burden countries. Although pulmonary TB is the most common presentation of TB disease, it can involve any organ in the body. Extrapulmonary Tuberculosis (EPTB) is defined as the isolated occurrence of TB in any part of the body other than lungs. Mycobacteria may spread to any organ of the body through lymphatic or haematogenous dissemination and lie dormant for years at a particular site before causing disease. Manifestations may relate to the system involved, or simply as prolonged fever and non-specific systemic symptoms**. (11)** Hence diagnosis may be elusive and is usually delayed. Early diagnosis and effective treatment of active cases particularly pulmonary that are infectious to the community is the best way of controlling TB in our country. The main reason of the augmented risk of the manifestation of the disease could possibly occur due to delay in diagnosis and failure to cure a great percentage of pulmonary smear positive cases, which might lead to the high death toll ratio and MDR cases in Pakistan. Currently for diagnosis, developing countries rely on AFB stains and culture and radiographic changes. In this study, Out of total 276 patients, 78 patients (28.3%) were Pulmonary Smear Positive, 98 patients (35.5%) were Pulmonary Smear Negative and 100 patients (36.2%) were Extra Pulmonary Tuberculosis (Table-1). Among these 276 patients, 164 patients (59.4%) were females and 112 patients (40.6%) were male. 119 individuals (43.1%) were between 12–65 years of age (Table-2). Majority of the infected persons were from lower class. Common signs at presentation were anemia, had bronchial breathing. During investigation most of the patients especially female were having Hb level of 8–10 gm/dl. The conclusion of this study that lockup convicts are at amplified risk for TB infection is in line with previous studies steered in the parts of the world. It has been proposed that a TB control programme should be introduced. There should be special attention for the personages showing positive family history for TB as they have already provoked a chance to gain the manifestation of the disease. Also deprived sanitation and freshening provide M. tuberculosisan, a grand opportunity to persist for extensive periods and transmit it to others.

Table 1: Diagnosis of Percent distributions of smear positive pulmonary TB prevalence rate by frequency of different types

PULMONARY SMEAR		
	Frequency	**Percentage**
Pulmonary Smear Positive	78	28.3 %
Pulmonary Smear Negative	98	35.5 %
Extra Pulmonary Tuberculosis	100	36.2 %
Total	276	100.0 %

Table 2: Percent and frequency distributions of smear positive pulmonary TB prevalence rate by gender

	Frequency	**Percentage**
Male	112	40.6
Female	164	59.4
Total	276	100.0

Table 3: Percent and frequency distributions of smear positive pulmonary TB prevalence rate by age

Age	**Frequency**	**Percentage**
1-15	12	4.3
16-30	119	43.1
31-45	85	30.8
46-60	33	12.0
>65	27	9.8
Total	276	100.0

Table 4: Percent and frequency distributions of smear positive pulmonary TB prevalence rate by relapse

	Frequency	**Percentage**
Positive	7	2.5
Negative	269	97.5
Total	276	100.0

Table 5: Percent and frequency distributions of treatment Failure within smear positive pulmonary TB

	FREQUENCY	**PERCENTAGE**
POSITIVE	2	.7
NEGATIVE	274	99.3
TOTAL	276	100.0

Table 6: Percent and frequency distributions of treatment after defaults within smear positive pulmonary TB

	Frequency	**Percentage**
Positive	5	1.8
Negative	271	98.2
Total	276	100.0

Table 7: Percent and frequency distributions of extra Pulmonary TB

	Frequency	**Percentage**
Positive	100	36.2
Negative	176	63.8
Total	276	100.0

The improvement within ventilation, sanitation and overall living conditions in the environment have been suggested thoroughly. We recommend an awareness programme for kinfolk's to acquire knowledge about the possibility of transmission of the M. tuberculosis infection from AFB sputum smear-positive pulmonary TB cases.

Conclusion

The investigation report provides vibrant statistics on the TB infection condition amid the Hyderabad Sindh population, TB vestiges a foremost public health problem midst the tribal population and there is a need of further TB Control programmes on a constant and durable basis.

Smear positive pulmonary TB is more in females, in young age individuals, and in people of low socio economic group. For the control of tuberculosis, early diagnosis of active cases and their treatment under supervision is important. Acid fast staining of sputum is the best method, if performed by experienced microbiologist, as it is reliable and economical. Its diagnostic yield can be increased by liquefaction and centrifugation of sputum and by examining more than one sample.

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