Short Communication

Prevalence of Sputum Smear Positive Pulmonary Tuberculosis among the suspected visited patients in Selected Area of District Malakand, Pakistan

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Abstract	Article Information
To control and stopped the progression of Tuberculosis (TB) epidemiological data as well as effective treatment are very necessary. This study was design to determine the prevalence of pulmonary tuberculosis sputum smear positive (PTB-SS+ve) cases among the total registered suspected cases of TB at different treatment center of district Malakand. This retrospective was carried out between 1st Janaury-25th June 2015. Overall prevalence of PTB-SS+ve in the district was 43.56%. The ratio of the disease was found slightly high 51.02% among the male patients while 48.98% in female. On the basis of age wise distribution the maximum amount cases 37.76% were recorded in age 16-30 years while the lowest No. of cases 8.16% were recorded in age 0-15 years. In conclusion, the PTB-SS+ve was prevalent disease in district Malakand mostly infected the individuals having age between 16-30 years. Early diagnosis and proper treatment are necessary to control the disease.	 ***Corresponding Author:** **Tauseef Ahmad** **E-mail:** tauseef.ahmad@hu.edu.pk hamdardmicrobiologist@gmail.com

INTRODUCTION

Tuberculosis (TB) is second leading cause of death from an infectious disease worldwide, after the human immunodeficiency virus. It remains one of the world's deadliest communicable diseases and in 2013 alone, out of the estimated 9.0 million people developed TB disease, 1.5 million died (WHO, 2014). After the declaration in 1993 that tuberculosis was a global emergency, WHO launched the directly observed treatment, short-course (DOTS) strategy, which was successfully expanded as the principal tuberculosis control strategy, focusing primarily on detection and effective treatment of infectious cases (Raviglione and Uplekar, 2006). After a decade of implementation DOTS strategy, the new STOP TB Strategy and the Global Plan to Stop TB (2006–2015) were launched in 2006 to address important challenges that included the HIV-associated tuberculosis epidemic, the emergence of the MDR tuberculosis epidemic, weak health systems, and insufficient engagement with private healthcare providers and with communities (WHO, 2006). With these strategies, TB is slowly declining each year

and it was estimated that 56 million patients were cured, 22 million lives were saved, and mortality rate was reduced with 45% from 1990 to 2012 (WHO, 2014). However, given that most deaths from TB are preventable, the death toll from the disease is still unacceptably high and efforts to combat it must be accelerated and the WHO currently implementing the new strategies call Post 2015 strategies which have a vision to eliminate TB epidemic at 3035 (WHO, 2014).

Pakistan is among the top 14 TB and 4 MDR high TB burden countries in the world and the trend of the burden of the problem is did show any improvement from 1990 to 2013 (WHO, 2014). However, it has shown progressive improvement in treatment success rate (>70%) among high burden countries. According to WHO estimation, the prevalence and incidences of TB is 342 (284–406) and 275 (205–357) in 2013 per 100,000 (WHO, 2014).

Identifying the prevalence of this public health problem will provide very important information in establishing feasible strategic plan in high TB countries like Pakistan. However, this information is lack in our study area. Therefore, this study was done to determine the Prevalence of sputum smear positive Pulmonary Tuberculosis in selected area of District Malakand in Pakistan.

MATERIALS AND METHODS

A six months (January-June 2015) hospital based retrospective study was conducted to find out the prevalence of sputum smear positive cases among the suspected visited patients. Study subject were all TB patients attending the treatment in January-June 2015. The purposively selected hospitals were District Head Quarter Hospital Batkhela, Tehsil Head Quarter Hospital Dargai and Civil Hospital Thana. The data were collected from the TB patients register. A total of 225 patients were

registered and further process either for PTB or extra-pulmonary TB. The patients have EPTB or sputum smear negative were excluded from the current study. The ethical approval was taken from the higher authority of the hospitals. The data was described using descriptive statically tool and presented using table.

RESULTS

In the present study a total of 225 suspected individuals was screen for TB infection (Table 1). The high No. of patients was registered in THQ Hospital Dargai followed by DHQ Hospital Batkhela and Civil Hospital Thana as shown in table 2. Of the total cases, 98 (43.56%) was PTB-SS+ve with 50 (51.02%) male and 48 (48.98%) female as shown in table 2. In area wise distribution the high prevalence of PTB-SS+ve was recorded in Thana followed by Batkhela and Dargai as describe in table 2. The disease was prevailing in the age group between 16-30 years (Table 3).

Table 1: Scio-demographic status of the registered TB patients

	Variable (N=225)	Frequency	Percentage
Sex	Male	108	48
	Female	117	52
Treatment center name	THQ Hospital, Dargai	121	53.78
	DHQ Hospital, Batkhela	81	36
	Civil Hospital, Thana	23	10.22

Table 2: Gender wise distribution of Pulmonary TB sputum smear positive cases at different treatment center

Treatment center name	Total cases	PTB-SS+ve (%)	Male (%)	Female (%)
THQ Hospital, Dargai	121	42 (34.71)	19 (45.24)	23 (54.76)
DHQ Hospital, Batkhela	81	41 (50.62)	23 (56.1)	18 (43.9)
Civil Hospital, Thana	23	15 (65.22)	8 (53.33)	7 (46.67)
Total	**225**	**98 (43.56)**	**50 (51.02)**	**48 (48.98)**

Table 3: Overall age wise distribution of pulmonary TB sputum smear positive cases (N=98)

Age groups	Frequency	Percentage
0-15	8	8.16
16-30	37	37.76
31-45	18	18.37
46-60	16	16.33
Above 60	19	19.39

DISCUSSION

Every year millions of people were infected with TB. Majority of the TB cases are occurred in the developing countries. In our study the overall prevalence of PTB-SS+ve was corroborate with other studies carried out by Saleem *et al.* (2013) at Kotli Azad Kashmir notified 44.73% cases of PTB-SS+ve.

In 2011, 270,394 cases of TB were reported from Pakistan (WHO, 2012). Overall results show that male is more infected rather than female. Our finding is similar with Saleem et al. (2013) reported high prevalence in male patients. Many region of the world have high male to female ratio i.e. Europe 2.16-1.00, South-east Asia 2.03-

1.00, Americas 1.49-1.00 and 1.35-1.00 in Africa (Dogar *et al.*, 2012, Anderson and Menzies, 1995, Conde *et al.*, 2000, Al-Zahrani *et al.*, 2001)

There is large difference in smear positivity in the study institution which can partly reflect the tuberculosis prevalence difference in the community served at the study facilities. The presence of high prevalence of TB between 16-30 age groups could indicate the economic impact of TB in developing countries like the study area. These studies consist with other studies (Wood *et al.*, 2010, Ejeta *et al.*, 2012). This observed difference could be because of high prevalence of HIV in the age group in the area.

Apart from such important findings, this study is not without limitations. As common for secondary-data studies, some variables had not been recorded in registration book used in the study like socio-demographic data, anti HIV drug status, nutritional data, and presence of other chronic diseases which are potential factors for the development of TB diseases.

CONCLUSIONS

It was concluded that, smear positive pulmonary tuberculosis is prevalent in district Malakand. High ratio of cases was recorded in age between 16-30 years and female. Early diagnosis, proper treatment, awareness regarding the disease and good medical facility are necessary to decrease the burden of disease in district Malakand.

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Conflict of Interest

Conflict of interest declared none

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