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A DESCRIPTIVE STUDY OF TUBERCULOSIS IN CHAKDARA TOWN, PAKISTAN

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ABSTRACT

The present investigation was carried out to evaluate the status of tuberculosis among the local population of Chakdara Town, District Dir(L), Khyber Pukhtoon Khwa(KPK), Pakistan. For the present investigation the data was collected from the local Hospital located in Chakdara, District Dir (Lower). Total 35 entries were recorded officially in which 19 are positive and 16 are negative. The registered cases for TB were categorized in age, sex and month wise. It has been found that the register cases of TB are high among the population between 41 to 60 years (75%) and >60 years (75%), whereas the sex is concern male were found comparatively highly affected than female. The high TB cases were found in the month of February (66.66%). The major contributing factors in the spread of TB are Lack of health education, poor housing, poverty, overcrowding. It was concluded that the TB is still prevalent in Chakdara Town. The result of present investigation will be very significant in epidemiological prediction for any outbreak of TB in Chakdara Town.

Keywords: Tuberculosis, Epidemiological prediction, Tuberculosis contributing factor

INTRODUCTION

In the world Tuberculosis (TB) remains one of the deadliest diseases. *Mycobacterium tuberculosis* has always been present in human populations since ancient times. The pathological and anatomical descriptions of TB disease began to appear in the seventeenth century. *Mycobacterium tuberculosis* is causative organism of TB. The main entrance gate of the *Mycobacterium tuberculosis* is the lung. After inhalation in the site where it is deposited causes a focal infection (Rich, 1994). TB is a disease with deep social and economical roots. The possible reason of highest number of TB cases might low-income with large families, living in deficient housing conditions with dense urban communities. Therefore, people have a high probability of TB infections. The elderly people with diabetes can have high risk of TB. The people that live in mal health institutions, such as prisons, schools, day nurseries, social shelters, youth correctional facilities, nursing homes for elderly people and people suffering from Acquired Immunodeficiency Syndrome (AIDS) (Dye C *et al.,* 1999. ATC, 2000. Castelo-Filho, 2004. WHO , 2006).

In human populations since ancient times *Mycobacterium tuberculosis* has existed. In Egypt, India, and China 5,000, 3,300, and 2,300 years ago, respectively TB was documented. The pathological and anatomical descriptions of TB disease began to appear in the seventeenth century (NTC, 1996. Daniel, 2006). Since the Greco-Roman and Egyptian Civilizations it has been found that TB was recorded with evidence of spinal tuberculosis being recorded as long ago as 3400 BC. This disease was also mention in the ancient Indian scriptures. In 1992 TB was declared a global health emergency by World Health Organization (WHO). In almost all

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countries of the world it was prevalent. Each year more than 8 million new cases of TB has been occur and approximately 3 million persons die from the TB according to the World Health Organization (Duraiswami & Tuli, 1991. WHO, 1989-1998. WHO, 1996).

In the developing countries 95% of TB cases occur to ensure proper treatment because where few resources are available and where the human immunodeficiency virus (HIV) infection might be common. The world's population is infected with *Mycobacterium tuberculosis* between 19 and 43%. One-third of the world's population is currently infected with TB according to the data from the World Health Organization every second one new person is infected (Sudre *et al.,* 1992. WHO, 2001. WHO, 2004. Dye C, 2006). In most European countries from 9% to 76% migrants and foreign-born comprise TB patients. In the developing world TB remains one of the most deadly, and disabling, diseases. In 2000 it was the eighth highest cause of death, and the tenth highest cause of Disability Adjusted Life Years (DALYs) according to the World Health Organization's Global Burden of Disease project. According to WHO estimated that globally 8.8 million people were infected with TB in 2005, 1.6 million people died of TB in 2007.

TB killed 1.45 million peoples in 2010 (Verver & Veen, 2006. Mathers *et al*., 2002.WHO, 2007. WHO, 2011). Pakistan ranked 6th amongst the 22 High Burden Countries (HBCs). 11.5 million Peoples have been infected with TB approximately in Pakistan and every year around 280,000 new cases of TB are being added. To control the disease efforts accelerated for decades, globally it remains the seventh leading cause of death (NTP, 2006. WHO, 2007. WHO, 2004)

Epidemiology of TB in Pakistan

Although TB is considered to be a major cause of ill health, little reliable epidemiological data is available for Pakistan. The annual incidence rate of infectious TB cases is estimated to be between 85-100/100,000 persons. The existing number of infectious individuals is annually approximately 120,000 with many new TB cases. In Pakistan some areas have much higher figures, like Northern Pakistan where the prevalence figure of 554/100,000 cases was observed (Khan, 1995. Alvi *et al.,* 1998). In the developing countries, mostly the younger ages are affected. Female ratio is high to Male which is based on Burden of Disease estimates. The 5% of the total DALYs (disability adjusted life years) is represented by TB. The burden of TB in Pakistan indicated that it is substantially higher than the world average of 3% (World Bank, 1998).

OBJECTIVES

The objective of the present investigation were to aware the people about the causes and consequences of TB. The present study included the prospect of frequency of TB in Chakdara Town. The ratio of the occurrence of TB based on parameter like sex, age and month was also considered. The result of present investigation would be very helpful to determine the important of TB among different age group and future prospect of study to control the TB in Chakdara Town with a suitable targeted achievement.

MATERIALS AND METHODS

Study area

The present investigation was carried out on TB to determine the prevalence rate in Chakdara Town Dir (L). Chakdara lies in the District Dir (L). In the east of Dir (L) is the District of Swat, in the northwest District Chitral, in the south Malakand Agency while in the west lies Afghanistan. According to 2010 census report Dir (L) with an area of 1585 kilometer square

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has the population of 1,074,401 with a population density of 679.14 people per square kilometer.

Collection of Data

The data has been collected from the Tehsil Head Quarter Hospital Chakdara located in District Dir (L) during the period of January 2012 to March 2012. For the collection of data a design proferma was include, patients address, date, sex, age, diagnosis and treatment.

Inclusion and exclusion

All the patients have the symptom coughing, sneezing, chest pain etc. For the confirmation of the TB the sputum microscopy was done.

Data analysis

The analysis of the data was done sex wise, age wise and month wise.

RESULTS

The study was approved by the ethical authority of respective hospital. In the present study 35 sample populations were analyzed from January 2012 to March 2012.

Gender wise distribution of Tuberculosis

In the present investigation it has been found that the overall tendency to get TB was higher in male population (of the area included in our study) as compared to female population and the recorded ratio of occurrence was 58.82% (10/17) and 50% (09/18) respectively (Table. 1). The comparative study of the ratio of occurrence of TB between male and female clearly indicate that male is more susceptible to TB than female.

Table 1: Gender wise distribution of Tuberculosis

Sex	*Total sample tested*	*Positive result*	*Percentage (%)*
Male	17	10	58.82
Female	18	09	50
Over all result	35	19	54.28

Age wise occurrence of Tuberculosis

Occurrence of TB among different age groups was also analyzed. Local population was divided in to four different groups as follows group 1: 0-20 years, group 2: 21-40, group 3: 41-60 and group 4: >60 (Table. 2). Maximum number of TB patient were in age group 3 (41-60), group 4 (>60) followed by group 2 (21-40), group 1 (0-20) as shown in Table 2.

Table 2: Age wise occurrence of Tuberculosis

Age (Years)	*Total sample tested*	*Positive sample*	*Percentage (%)*
0-20	16	5	31.25
21-40	7	5	71.42
41-60	8	6	75
>60	4	3	75

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Over all result	35	19	54.28

Month-Wise prevalence of Tuberculosis

In the present study, high prevalence (66.66%) was recorded in February, followed by March (50%) while lowest (46.15%) was recorded in January, 2012 as shown table 3.

Table 3: Month-wise prevalence of Tuberculosis

Month	*Total sample tested*	*Positive*	*Percentage (%)*
January	13	6	46.15
February	12	8	66.66
March	10	5	50
Over all result	35	19	54.28

DISCUSSION

During the last decade TB has re-emerged as a devastating disease with a high morbidity and mortality. Although in the industrial countries the prevalence of TB has obviously decline in the last decade. In the developing countries TB is one of the major causes of morbidity and mortality (Verver & Veen, 2006). In Pakistan, TB was very common. In Pakistan the fourth major cause of all deaths is considered to be TB. Pakistan has ranked at 5th among those nations that account for more than 50% of TB cases worldwide (WHO, 2011).

In this study majority cases were in between 41-60 years and >60 years of age. In the developed countries the TB recurrence is uncommon. The increase of TB in older peoples is due to disinformation of healthcare personnel. The lack of proper diagnostic and therapeutic approaches in nursing homes and/or support houses unavailability of laboratory facilities to diagnose TB, Ignorance, Poverty, Overcrowding, Poor hygiene, War and economic depressions (Perez-Guzman *et al.,* 1999. Zevallos & Justman, 2003).

During January 2012 to March 2012 total 35 TB patients were registered in Chakdara Town. The tendency to get TB was found to be higher in male as compared to female 58.82% of total positive cases were male and 50% were female patients. The findings of our study are in agreement with Cailhol *et al.,* (2005) who reported that the majority of cases of TB occur among males. The present study is also comparable with that of Chadha (2005). In this study different aspect like socioeconomic status, lifestyles of the TB patients were not considered. It was concluded that the possible reason for highest ratio of males may be due to the poverty, poorer nutritional status, no early medical care, lack of proper treatment protocol because the patient of TB left their treatment before the completion (Wilkinson *et al.,* 2000).

Age is an important aspect of the epidemiology of TB. The age wise distribution shows that the higher number of TB patients were found in age group 41-60, >60 years while the lowest number of TB patients were found in age group 0-20 years. Any age of group can affect with TB but is more common in older. From our finding it is clear that the TB affect the significant and productive age group in Chakdara Town which is similar to others (Shafqat and Jamail, 2012). According to Shafqat and Jamail, 84% patients belong to age group 15-64 years. According to Khan *et al.,* (2007) 84.4% TB patients belong to age group 16-60 years which is also comparable to our study. In our study, the month wise distribution of TB

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patients showed that the maximum numbers of cases were found to be in the February while the lowest cases were found in January.

CONCLUSION

It has been observed that TB has severely affected the older and economically productive age group in Chakdara Town. Poverty, lack of proper health facility and lack of knowledge regarding the treatment and precautionary measures of disease might be putting a large number of people on risk who are living with TB patients. The disease control efforts should be targeted to the areas where the rate of TB patients is higher and ideal socio-economic conditions exist for TB to grow rapidly. In this study it was found that TB is the most common prevailing disease in the rural communities in Chakdara Town and high incidence was recorded in male as compare to female.

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