

Vol 3 Issue 5 Nov 2013

Impact Factor : 1.9508 (UIF)

ISSN No :2231-5063

Monthly Multidisciplinary
Research Journal

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RNI MAHMUL/2011/38595

ISSN No.2230-7850

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GRT PREVALENCE OF TUBERCULOSIS IN DIR LOWER: AN EPIDEMIOLOGICAL DESCRIPTIVE STUDY



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Abstract: The aim of the present study is to evaluate the status of Tuberculosis (TB) among the local population of district Dir (Lower). Khyber Pakhtunkhwa, Pakistan visited to health care center. An epidemiological descriptive study was designed. The study was carried out during the period of January 2010 to December 2010. The data was collected from the local TB center and Hospitals located in different areas of district Dir (L). Total 1385 entries were recorded officially in which 510 (36.82%) are positive and 875 (63.18%) are negative. The registered cases for TB were categorized by sex wise, age wise and area wise. Where the area is concerned the high TB patients were reported from Shamshi Khan (56.25%) while the lowest cases of TB were recorded in Chakdara (22.56%). The occurrence of TB is high in female population 280 (54.9%) as compared to male population 230 (45.1%) of district Dir (L). It has been found that the registered cases of TB are high among the population between >10 to 30 years 237 (46.47%). From the present study it was concluded that TB is still prevalent in district Dir (L) and affects the most productive and economically active age group of district Dir (L). For the control of TB the case detection, treatment and proper management is essential. In case of any outbreak of TB in district Dir (L) the present study will be of great epidemiological significance.

Key words: Tuberculosis, Epidemiological descriptive study, TB center, Hospitals, Outbreak.

1. INTRODUCTION:

Tuberculosis (TB) is still one of the major causes of morbidity and mortality especially in developing countries. TB is a disease of poverty. The Mycobacterium tuberculosis is the causative agent of TB. The TB infection is of two types, Latent TB infection and Active TB. The person with latent TB does not exhibit symptoms, does not feel sick and cannot spread the infection, whereas the person with active TB exhibits a range of symptoms and spreads the infection to others (CDC, 2007a). The common symptoms of TB are coughing, blood in sputum, chest pain, breathlessness and night sweats. M. tuberculosis is an airborne disease. It can remain airborne for several hours, transmitted by coughing, sneezing, speaking, close contact etc. mostly affects the lungs, but it can also affect the brain, kidneys, or spine. According to the World Health Organization (WHO) someone in the world is infected with TB every second. Worldwide more than 2 billion people are infected with TB (CDC, 2007b; WHO, 2009).

In 2010, an estimated 12 million people were living with active TB disease, among 1.4 million TB-related deaths. TB is a curable disease, for the treatment of active TB the combination of drugs were used, taken over the course of 6-12 months. For the detection and treatment of TB the WHO developed an internationally recommended strategy called

“Directly Observed Treatment, Short-course” (DOTS). The treatment success rate of DOTS is 87% in 2009 (WHO, 2011).

MATERIALS AND METHODS

The aim of the present investigation was to aware the people about the causes and consequences of tuberculosis. The ratio of the occurrence of TB based on parameters like sex, age and area was also considered. The present study included the prospect of frequency of TB in district Dir (L). The result of the present investigation would be very helpful to determine the importance of TB among different age groups and future prospects of study to control TB in district Dir (L) with a suitable targeted achievement.

Study area and duration: The present investigation was carried out in the district Dir (L). Dir (L) lies in the Khyber Pakhtunkhwa of Pakistan. 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 the 2010 report Dir (L) has an area of 1585 square kilometers with a population of 1,074,401 and a population density of 679.14 people per square kilometer. The data has been collected from different centers and hospitals located in different areas of Dir (L). The present

study was carried out during the period of January 2010 to December 2010.

Study design: An epidemiological descriptive study was design.

Data collection: The data collected from hospitals and TB centers working under the governance of government of Pakistan. The data collected during the time 9:00 AM to 2:00 PM. For the collection of data a standard performa was used including, date of entry, sex, age, area, diagnosis, treatment and patients address.

Data analysis: The descriptive analysis has been done. It was studied that all the cases of tuberculosis were infectious (pulmonary, sputum-smear positive) or non-infectious (pulmonary but sputum-smear negative, or extra pulmonary). The patients were classified in to various groups according to sex, age and area.

RESULTS

The study was approved by the ethical authority of respective hospitals and TB center. In the present study 1385 sample population were analyzed from January 2010 to December 2010.

Region wise distribution of TB patients

The region wise distribution of the present study shows that the maximum number of cases were recorded in Shamshi Khan 63/112 (56.25%) followed by Lal Qilla 83/172 (48.26%), Ouch 43/95 (45.26%), Gul Abad 17/41 (41.46%), Munda 56/137 (40.88%), Smar Bagh 77/195 (39.49%), Timergara 104/336 (31%) and Chakdara 67/297 (22.56%) as shown in figure 1.

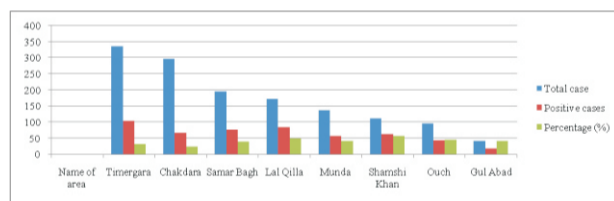


Figure 1: Region wise distribution of TB patients in different area of district Dir (L)

Sex wise distribution of TB patients

The data was analyzed for the sex wise distribution. Out of total 1385 samples 510 (36.82%) cases were positive. When the positive cases analyzed further it was found that the female population have high TB patients as compared to male population. The ratio of occurrence of male and female is 230 (45.1%) and 280 (54.9%) as shown in figure 2.

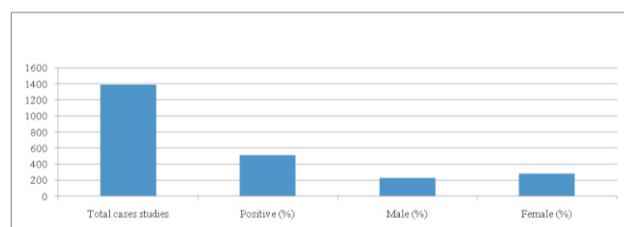


Figure 2: Sex wise distribution of TB patients in district Dir (L)

Sex wise comparison of TB patients

When the sex wise comparison of different area of district Dir (L) were done it was found that the tendency to get TB is high in female population as compare to male population of Gul Abad 13/17 (76.47%) followed by Munda 41/56 (73.21%), Chakdara 42/67 (62.68%), Shamshi Khan 35/63 (55.56%) and Lal Qilla 44/83 (53%). While in Ouch the high cases of TB were recorded in male population as compare to female population 25/43 (58.14%) followed by Samar Bagh 40/77 (51.95) and Timergara 54/104 (51.93%) as shown in figure 3.

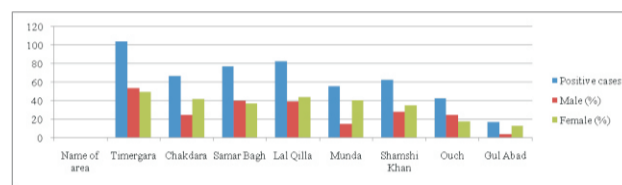


Figure 3: Sex wise comparison of TB patients in different area of district Dir (L)

Age wise distribution of TB patients

For the age wise distribution the local population were divided in to seven different age groups, age group 1: 0-10 years, age group 2: >10-20 years, age group 3: >20-30 years, age group 4: >30-40 years, age group 5: >40-50, age group 6: >50-60 and age group 7: >60. The study shows that the maximum number of TB patient 119/510 (23.33%) were in age group >20-30 years followed by age group >10-20 years 118/510 (23.14%), age group >30-40 years 73/510 (14.31%), age group >60 years 57/510 (11.18%), age group >40-50 years 56/510 (10.98%), age group >50-60 years 45/510 (8.82%) and age group 0-10 years 42/510 (8.24%) as shown in figure 4.

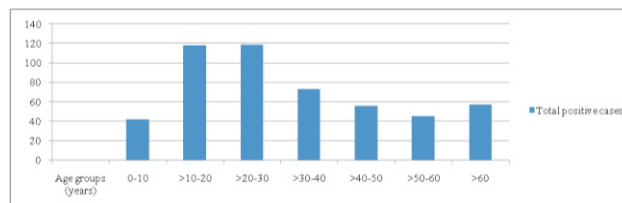


Figure 4: Age wise distribution of positive cases in district Dir (L)

Age wise comparison of TB patients

The present data were analyzed for the age wise comparison of different area of district Dir (L). It was found that the TB affects different age groups in different area of district Dir (L). In Timergara the maximum number of cases were recorded in age group >20-30 years, while in Chakdara in age group >20-30 years, in Samar Bagh in age group >40-50 years, in Lal Qilla in age group >20-30 years, in Munda in age group >10-20 years, in Shamshi Khan in age group >10-20 years, in Ouch in age group >10-20 years, in Gul Abad the

maximum number of TB patients were recorded in age group >10-20, >40-50 years as shown in figure 5.

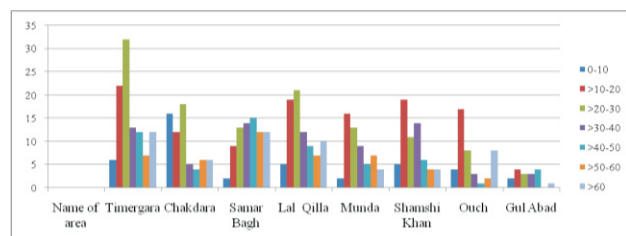


Figure 4: Age wise comparison of positive cases in different area of district Dir (L)

DISCUSSION

From January 2010 to December 2010 total 1385 samples were analyzed. Out of which 510 (36.82%) were positive. The finding is in line with Sultan et al., (2012) reported 32.02% cases of TB among the local population of Peshawar, Pakistan. The high cases of TB were reported from Shamshi Khan (56.25%) while the lowest recorded in Chakdara (22.56%). The result is comparable with Tauseef et al., (2013) reported (54.28%) cases of TB in Chakdara Town, Pakistan. The ratio of occurrence of TB is high in female population (54.9%) as compare to male population (45.1%). The finding is similar with others (Sultan et al., 2012; Muhammad and Saba, 2012; Ullah et al., 2008). The possible reason for highest ratio of females may be due to the social exclusion, poorer nutritional status than their male counterparts no early medical care, no proper treatment protocol because the patient of TB left their treatment before the completion. In some area of district Dir (L) i.e. Ouch, Samar Bagh and Timergara the high TB patients were recorded in male population. The finding of our study is comparable with Tauseef et al., 2013; Muhammad et al., 2007; Cailhol et al., 2005; Chadha, 2005. In this study the majority of cases were recorded in age group 10-20 years (23.33%) and age group >20-30 years (23.14%). The percentage of positive cases between >10-30 years was 46.47% and between >10-40 years is 60.78%. The result of the present study is comparable with Tauseef et al., (2013) reported 71.42% TB cases in age group 21-40 years, while Muhammad et al., (2007) shown that the maximum incidence of TB cases 46.2% were found between the age of 16-30 years. According to Sultan et al., (2012) 47.5% cases of TB occurred age group 10-40 years. In this investigation different aspect like socioeconomic status, lifestyles of the TB patients were not considered.

CONCLUSION

The present study identified some specific areas of increased TB risk in district Dir (L), which were Shamshi Khan, Lal Qilla, Ouch, Gul Abad, Munda, Samar Bagh with the high incidence rate of TB patients. From the current study it was concluded that the TB affected the adults and economically productive age group of district Dir (L). For the control of TB the disease control efforts should be targeted to the areas where the concentration of TB patients is higher.

Competing interests

The authors declare that they have no competing interests.

ACKNOWLEDGEMENT

This work is a part of BS. (Hons) thesis of Tauseef Ahmad. All the Data were provided by local TB center and Hospitals. The diagnosis was done at these Centre and hospital. The authors are thankful to Dr. Fiada Muhammad and Mr. Rasool Muhammad for their contribution in this study. Also thanks to all the clinicians and patients for their cooperation in the study.

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