

A case study of pulmonary tuberculosis in district Lower Dir, Pakistan

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Abstract:

Tuberculosis (TB) is infectious disease caused by, Mycobacterium tuberculosis which is responsible for mortality and morbidity mostly in Pakistan. In current study, 187 suspected people were studied during year 2011 to 2012. The suspects belonged to district Lower Dir and were diagnosed according to World Health Organization guidelines. Out of 187 suspects, 138 were positive for TB. The present study also showed that, TB ratio was high in females as compared to males. Similarly most of the TB positive patients were from poor socioeconomic status.

Key words: Dir, Mortality, Morbidity, Mycobacterium, Tuberculosis.

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Introduction

Tuberculosis (TB) is one of the most infectious disease which is responsible for mortality and morbidity mostly in third world countries like Pakistan. Drugs for treatment of TB are available since 1940s. Around 2 million death occur due to TB and ranked this disease as second most threatening after HIV (World Health, 2008). The causative agent of TB is *Mycobacterium tuberculosis*. Each year approximately 2 million of death occur due to primary infection, endogenous reactivation of primary infection, or the death may be due to exogenous re-infection with new strain (Balasubramanian et al., 1994). *Mycobacterium tuberculosis* has infected up to one-third of the world's population. Majority of the cases has been controlled but, up to 10 % of the infected adults have active TB and can transmit to others causing, significant mortality and morbidity each year (World Health, 2005). The annual incidence rate of TB in Pakistan range from 85-100/100,000. Each year around 120,000 new TB cases are added to the existing number. In some area the incidence rate are too high i.e. 554/100,000 such as Northern Pakistan (Alvi et al., 1998).

The purpose of this study was to estimate the prevalence and to identify risk factors for pulmonary TB in district Lower Dir.

Methods and Materials

The patients included in this study were diagnosed as, pulmonary tuberculosis on the basis of sputum smear microscopy. Highly suspected TB patients were also included on the basis of clinical and radiological findings. Study population consisted of suspected TB patients. The patients were asked for the relevant details such as history of fever, cough, weight loss, duration of TB, smoking, diabetes, HIV and other conditions such as immune-deficiencies, immune-proliferative and

autoimmune or allergic diseases. A standard questionnaire was filled in from the suspected TB patients regarding their names, sex, age, profession, village, medical history and chest X-rays. The standard techniques recommended by WHO were followed. Three consecutive sputum samples were collected from the daily outdoor suspected tuberculosis patients with positive chest X-rays. All the sputum samples were processed accordingly with preparation of sputum smear, Ziehl Neelsen staining and microscopic examination with most necessary precautionary measures as per standard guideline (Enarson et al., 2005). Sputum smear slides were examined microscopically after ZN staining. First used the 40x objectives to see how the smear was distributed. Then systematically examined the slides at 100x oil immersion objective to look for Acid Fast Bacilli (red bacilli). The smear slides were examined from end to end in steps until whole smears were covered. The numbers of Acid Fast Bacilli were counted per high power microscopic fields according to National TB Control Program.

Results

A total number of 187 patients were studied from January 2011 to May 2012 in different Tehsils of district Lower Dir such as Timergara, Balambat, Lal Qilla, Samar Bagh and Adenzai. Out of 187 patients 138 were TB positive. Distribution breakup of TB positive patients in district Lower Dir were 53, 25, 17, 26 and 17 from Tehsils Timergarra, Balambat, Lal Qilla, Samarbagh and Adenzai respectively. In this study 59 were male and 79 were female. The prevalence rate was higher in females than in males as shown in Figure. 1. The patients were divided into three socioeconomic status observed from their occupation and status of living. In 138 TB infected patients 11, 41 and 86 belonged to upper, middle and lower class families respectively as shown in Figure. 2.

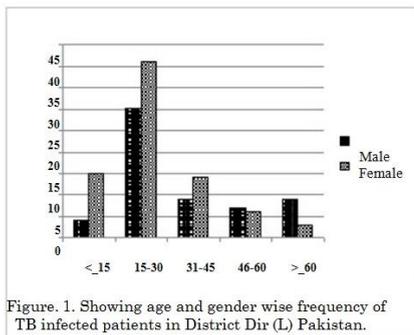


Figure. 1. Showing age and gender wise frequency of TB infected patients in District Dir (L) Pakistan.

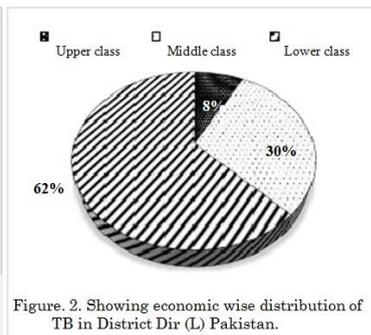


Figure. 2. Showing economic wise distribution of TB in District Dir (L) Pakistan.

Discussion

In Pakistan tuberculosis (TB) is a major public health problem. The prevalence rate of TB in Pakistan is very high and unfortunately it happened due to neglected health areas in the past. On prevalence rate, Pakistan ranked on 8th among most burdened TB countries. About 44 % of the Eastern Mediterranean Region burden area is being contributed by Pakistan. According to the World Health Organization (WHO), the incidence of sputum positive TB cases in Pakistan is 80/100,000 per year and for all types it is 177/100,000. About 5.1 % of the total national disease burden is TB in Pakistan. In our findings sputum positive smears with over all prevalence of TB in our infected population was 73.79% is totally contradict with some other studies that the result of overall prevalence was (17.3%) (Harries et al., 2001, Katamba et al., 2007, Muvunyi and Masaisa, 2010).

Analysis of the results showed that the prevalence of TB was greater in female (57.25%) as compared to male (42.75%). This is because of lady health workers trained in National TB Control Program, who do not perform their responsibilities through sophisticated way in the community and specially not familiar that how to cure and control transmission of this life killer, as part of their job in primary health care motivation. But cure rate and awareness was slightly higher in male as

compared to female. Same result were found by (Yamasaki-Nakagawa et al., 2001) who analyzed gender difference at Nepal and concluded that more female were positive for active TB than male, as men tended to visit the government hospital regularly. Results of the study showed that majority of the positive patients have poor socioeconomic condition. Out of 138 positive patients, 86 (62.32%) belonged to lower class families, while 41 (29.71%) patients belonged to middle class and 11 (7.97%) belonged to upper class. Our observations were parallel to Husain and Kunwal that majority of the patients were from lower socioeconomic group (Hussain and Kunwal, 2000).

Conclusion

Our present results showed that the incidence of active TB in Lower Dir is high in those people who live in poor house, malnourished and crowded conditions. Respiratory droplets generated through cough and sputum of smear positive peoples transmit tuberculosis. Pakistan face TB problem seriously because Pakistan spend 0.8 % of Gross Domestic Product (GDP) on health which is very less than other advance country which spend 7-10 % of its GDP on health.

Recommendation

A collaboration is needs to be established between National TB Control Program and private medical practitioners. People should be aware of the symptoms of this life threatening disease. Patient should take their medicine on time and complete their treatment course.

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