Institutional Based Study of Tuberculosis in Tehsil Khawazakhela, District Swat, Pakistan

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Abstract: Tuberculosis (TB) is the most important predominant infectious disease of the globe causing morbidity and mortality among adults. In the study, data of TB patients from 2009 to 2012 were collected from Civil Hospital Khawazakhela Swat. A total of 1275 patients were investigated, among which 701 were TB positive. Prevalence rate was 54.98%. Data analyses revealed that out of these 701 TB positive patients, 309 (44.07%) were males and 392 (55.92%) were females. Our findings showed that profession was the major factors in the prevalence of TB, for example majority of the positive patients have poor socioeconomic condition. Out of 701 TB positive patients, 209 (29.81%) were farmer, 325 (46.36%) housekeepers, 49 (6.99%) shopkeepers, 98 (13.98%) students, 16 (2.28%) teachers and 4 (0.57%) were job less. According to our analysis, majority of the TB infected patients were farmers among male and housekeepers among females.

Key words: Morbidity • Mortality • Prevalence • Tuberculosis

INTRODUCTION

In Pakistan, for tuberculosis (TB) very little authentic epidemiological data is available [1]. It has been estimated that the annual incidence rate of TB is between 85-100/100,000 persons. Each year about 120,000 new TB cases are being added to the prevailing number of infectious peoples. In some areas like, Northern Pakistan the figure is very high such as, 554/100,000 [2]. Young age groups like other developing countries are affected the most. Similarly, male patients in most age groups excluding adolescent, outnumber females. Based on burden of disease estimates, TB represents 5% of the total DALYs (disability adjusted life years): which indicates that the burden of tuberculosis in Pakistan is substantially higher than the world average of 3% [3].

In 2007, 297,108 people in Pakistan developed TB [4]. Similarly, based on TB burden, Pakistan ranks 6th in number among countries with a high TB burden. According to WHO, in Pakistan prevalence of TB is 420,000, incidence is 231/100,000 [5] and mortality from all types of TB is 29/100,000 per year [6]. Pakistan alone accounts for 44% of total TB burden in the Eastern Mediterranean Region of the WHO comprising 23 countries [7]. On the other hand, Pakistan is among 27 countries with high burden of multi drug resistance (MDR) [5]. During the year 2008, 15000 MDR cases were reported in Pakistan [5].

In Pakistan, TB is one of the major problems of public health and is responsible for the 5.1% of the total national disease burden [8]. The present study was designed to study (1) the occurrence of Tuberculosis in Tehsil Khwazakhela district swat. (2) To find out incidence of TB in Khwazakhela swat according to different age and genders. (3) To estimate the frequency of TB regarding to socio-economic status of Khwazakhela swat studied population. (4) To identify the awareness level of the general public of Khwazakhela about the causes, transmission and consequences of TB and impacts on health.

MATERIAL AND METHODS

Area Selection: For the present study, Khwazakhela was selected because, it has been ignored for research work on TB. Khwazakhela is the town in district Swat, Khyber Pakhtunkhwa province of Pakistan. It is located on the bank of river Swat about 30 to 35 kilometers away
from Saidu Sharif, the present capital of Swat. According to initial humanitarian assessment report Swat in 2010, the population of khwazakhela was about 192,219. Khwazakhela is located on main Swat-Shangla road at distance of 35 Km from Saidu Sharif. It is at a distance of 40-55 minutes from Mingora via Char Baugh. It can also be accessed via Matta in the same time brake.

**Data Collection:** Four year data (from the first of January 2009 till October 2012) of all patients were collected from the Civil Hospital Khwazakhela Swat located near Kalam road. This hospital has a separate section for the TB patients that works under the projects of world health organization.

**Study Designed:** The patients were divided into different groups on the basis of their age 0-14 years, 15-30 years, 31-45 years, 46-60 years and 61-n years. They were also classified on the basis of sex i.e. male and female, marital status and occupations.

**Data Analysis:** Collected data was analyzed in University of Malakand, using Microsoft Excel, Version 2010.

### RESULTS

#### Age and Sex Wise Comparison of Tb Infected Patients among the Years 2009 to 2012:
A total of 1275 patients were suspected during 4 years, among these 701 patients were found infected. Our results showed that a regular decrease occur in 15-30 age group in female from 2009 to 2012 but in male, the prevalence of TB in 2009 was 21.03% but suddenly the prevalence was increased in 2010 i.e 31.39% than a regular decrease occur in male in 15-30 age group as shown in Table 1.

#### Sex and Marital Status Wise Comparison of Tb Infected Patient among 2009 to 2012:
According to sex and marital wise comparison of TB infected patients during 4 years, our results point out that majority of the patients were married and mostly they were female. The ratio of married male and female was 35.84% and 45.09% as shown in Table 2.

#### Occupation wise comparison of TB infected patients among 2009 to 2012:
Occupation wise, the prevalence of TB showed an irregular pattern during 4 years. In house

### Table 1: Age and gender Wise TB occurrence among the years

<table>
<thead>
<tr>
<th>Year</th>
<th>Sex</th>
<th>0---14</th>
<th>15---30</th>
<th>31---45</th>
<th>46---60</th>
<th>61---n</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Male</td>
<td>1</td>
<td>16</td>
<td>10</td>
<td>10</td>
<td>28</td>
<td>65(21.03%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>7</td>
<td>55</td>
<td>28</td>
<td>17</td>
<td>17</td>
<td>124(31.63%)</td>
</tr>
<tr>
<td>2010</td>
<td>Male</td>
<td>1</td>
<td>37</td>
<td>13</td>
<td>19</td>
<td>27</td>
<td>97(31.39%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>6</td>
<td>43</td>
<td>14</td>
<td>18</td>
<td>23</td>
<td>104(26.53%)</td>
</tr>
<tr>
<td>2011</td>
<td>Male</td>
<td>1</td>
<td>23</td>
<td>17</td>
<td>15</td>
<td>27</td>
<td>83(26.86%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3</td>
<td>38</td>
<td>18</td>
<td>22</td>
<td>14</td>
<td>95(24.23%)</td>
</tr>
<tr>
<td>2012</td>
<td>Male</td>
<td>1</td>
<td>15</td>
<td>15</td>
<td>7</td>
<td>26</td>
<td>64(20.71%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1</td>
<td>22</td>
<td>11</td>
<td>19</td>
<td>16</td>
<td>69(17.60%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>21(2.99%)</td>
<td>249(35.52%)</td>
<td>126(17.97%)</td>
<td>127(18.11%)</td>
<td>178(25.39%)</td>
<td>701</td>
</tr>
</tbody>
</table>

### Table 2: Comparison of marital status of TB infected patient among the years 2009 to 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Married (Male)</th>
<th>Married (Female)</th>
<th>Unmarried (Male)</th>
<th>Unmarried (Female)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>55</td>
<td>94</td>
<td>10</td>
<td>30</td>
<td>189</td>
</tr>
<tr>
<td>2010</td>
<td>72</td>
<td>80</td>
<td>25</td>
<td>26</td>
<td>203</td>
</tr>
<tr>
<td>2011</td>
<td>70</td>
<td>80</td>
<td>13</td>
<td>15</td>
<td>178</td>
</tr>
<tr>
<td>2012</td>
<td>55</td>
<td>63</td>
<td>9</td>
<td>6</td>
<td>133</td>
</tr>
<tr>
<td>Total</td>
<td>252 (35.84%)</td>
<td>317 (45.09%)</td>
<td>57 (8.10%)</td>
<td>77 (10.95%)</td>
<td>703</td>
</tr>
</tbody>
</table>

### Table 3: Occupation wise occurrence of TB among years

<table>
<thead>
<tr>
<th>Years</th>
<th>Farmers</th>
<th>House keepers</th>
<th>Shopkeepers</th>
<th>Students</th>
<th>Teacher</th>
<th>Job less</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>54</td>
<td>94</td>
<td>06</td>
<td>27</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>2010</td>
<td>57</td>
<td>88</td>
<td>18</td>
<td>36</td>
<td>02</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>46</td>
<td>80</td>
<td>19</td>
<td>25</td>
<td>08</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>52</td>
<td>63</td>
<td>06</td>
<td>10</td>
<td>02</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>209 (29.81%)</td>
<td>325 (46.36%)</td>
<td>49 (6.99%)</td>
<td>98 (13.98%)</td>
<td>16 (2.28%)</td>
<td>4 (0.57%)</td>
</tr>
</tbody>
</table>
keeper women’s, the prevalence of TB from 2009 to 2012 showed a regular decrease while, in farmers and peoples with other occupations, the ratio of TB infected patients was irregular (Table 3).

DISCUSSION

Our results showed that majority of TB patients were in between the age 15-30 years. Most of them were women (55.92%) as compared to male (44.07%). This is because, cure rate is high in male as compared to female. Same results were found by Yamasaki et al., [9] who analyzed gender difference in Nepal and concluded that more females were positive for active TB than males, as men tended to visit the government hospital regularly. According to Stop TB, [10], both men and women suffering from TB are likely to be in their most productive years (15-44 years).

According to our analysis, the ratio of married male and female was 252 (35.84%) and 317 (45.09%). It was concluded that most of the TB infected patients were married women as compared to men. Same results were found by [11] who confirmed that TB can have an adverse effect on the chances to get married more often in females than in males. For women, the stigma of TB can be specifically severe. Unmarried women having TB often meet problems in finding a spouse while married women can be at risk of desertion. In Pakistan, women with TB are either separated or divorced, or married a man having already one wife as compared to women who do not have TB [11].

Occupational analysis of the study showed that females household 325 (46.36%) and males farmers 209 (29.81%) were more exposed to the disease as compared to other occupation. Students, teachers and shopkeepers were at low risk to the disease which indicates that TB is basically a disease which is prevalent in lower class society. According to [12], Studies in Pakistan revealed that women have limited health access to TB care due to legal constraints, social values for women and norms and customs of society. Moreover WHO [13], also mention that TB in the new millennium continues to maintain its tightest grip on environments and population that are over crowded, malnourished and poorly housed. About 80% cases are in 22 high burden countries, the largest number of cases being in south East Asia.

CONCLUSIONS

Our study point out that the prevalence of TB in Tehsil Khwazkhela district Swat is high. The people belonged to less socio-economic setup live in poor houses. Moreover, it is concluded that TB is highly prevalent among the adults as compared to childs and older individuals and mostly found in female as compared to male. This study also analyzed that, TB is common in household women and male farmers.

Recomendations:

- It is strictly recommended that governmental organizations should take keen preventive measures to avoid further spread of the disease.
- Improve the socioeconomic status of inhabitants.
- Provide good medical care.
- Create awareness about the epidemic diseases.

REFERENCES

