A Comparative Study of Tuberculosis Diseases in Diyala Province in 2010 and 2015

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Abstract

Tuberculosis (TB) is one of the concern worldwide public health threats. A retrospective study conducted during the period (2016/11/14) until (2017/4/7) to comparative the incidence of tuberculosis disease in Diyala province between 2010 and 2015 years, the study included number of patients with the chest and respiratory infections visited the central treatments of tuberculosis infections in Diyala. The patients included males and females with ages from (20-90) years, they had been done X-ray chest and laboratory tests, including: examination of the septum with Ziehl–Neelsen test and (E.S.R). Examination had been identified a positive cases of tuberculosis among them, the number of patients infection with TB in (2010) were (147) cases from (1429) and (405) cases from (5772) patients in (2015). The study showed that tuberculosis infections were decline in 2015 to 7% compares with 2010 to 10.3%. The results showed that (44.89%) of male and 55.1% in female with TB infections in 2010. Also 47.90% of males and 52.09% of females infected with TB in 2015, the high rate of infection among age group (31-50) in 2010, and (51-70 years) in 2015, while the age group (71-90 years) are showed the lowest ratio were infected with TB infections for both 2010 and 2015. The results appeared urban area were high incidence of infection in both 2010 and 2015 in contrast with rural area, was 85(52.82%) in urban and 62(42.17%) in rural area in 2010, with 207 (51.1%) in urban area and 198 (48.9%) in rural areas in 2015.

Keywords: TB, Seroprevelance, Diyala province, Iraq.

Introduction

Mycobacterium Tuberculosis is a chronic bacterial disease as a result of infection with mycobacterium (TB) [1], this disease was affected various parts of the body, especially the lungs and becoming more serious by disrupting health services and spreading among people with HIV and People with AIDS are particularly susceptible to tuberculosis and can transmitted to others even with a healthy immune system [2].

Pulmonary tuberculosis is an infectious disease like cold. It spreads through the air and affects people with low immunity, such young adult under thirty years and children who have a weakly immune system, cancer patients, acute renal disease, as well as those suffering from diabetes, drug users, alcoholic drinkers and people who do not receive enough medical care because of poverty and homelessness [3]. Infected with tuberculosis was depending on three factors: duration of exposure, the environment, the person carrying the disease. In order to be infected, a healthy person needs to inhaling a small number of (1–5) microns in diameter [1]. These bacteria can pass through the bloodstream to settle in other organs of body such as urinary system, brain, lymph nodes, bones, joints, heart, Lung and larynx non-gastric. [4].

The most common symptom of pulmonary tuberculosis, fatigue, weight loss, anorexia, persistent low-grade fever, night sweats, chest pain, and bloody sputum. [5] Studies have shown that every second a person in the world suffers from a recent infection, and that approximately 1% of the world's population suffers from a recent case of tuberculosis each year and about 5%-10% of the people are infected with active lung
tuberculosis during their lifetime [6]. TB remains a major health burden around the globe. An estimated 8.6 million new cases and 1.3 million deaths occurred in 2012 [7]. Iraq is considered among eight high TB burden countries in Eastern Mediterranean Region (EMR) [8]. Tuberculosis is a common disease among humans and animals as it is the cause of many health and social problems in developing countries. [9]. Also affects most animals, such as cows and buffaloes. Cows are the main source of most human cases of bovine tuberculosis (Mycobacterium Bevis) by transmitted from infected animals to humans either through direct contact with infected cases or through air contaminated with infected spray, congestion and close contact and a contributory factor of infection are water, vegetable food, meat, milk and its derivatives) [10,11].

Amie of Study

Therefore a retrospective study conducted to comparative the incidence of tuberculosis infections in Diyala province between 2010 and 2015 years.

Materials, Method and Patients

Collection of Samples

This study was conducted in Diyala province between 14 November 2016 to 7 April 2017.

For patients with chest and respiratory infections visited the central treatments of tuberculosis infections in Diyala. This center are responsible for the diagnosis of tuberculosis infections and for the treatment and follow-up of patients at the province level. The study included both sexes and their ages from 20-90 years. The number of patients referred to the center and had symptoms of pulmonary tuberculosis were (1429) cases in (2010) and (5772) cases in (2015). The demographic information including gender, age and address

Medical Examination

Radiation X-ray and laboratory tests were performed to determine the positive from suspected infected patients. The E.S.R examination was performed and Ziehl–Neelsen test (acid fast stain) to detect the presence of bacterial, and re-examination of the patients several times to confirm the presence of TB infections.

Statistical Analysis

Was done by using SPSS (Statistical Package of social Science) version 18 computer software Frequency distribution and percentage for selected variable were done. The correlation test was used and level (<0.001) was considered significant (12).

Results and Discussion

The results in Table (1) showed the total number of people suspected with TB who have been visited the central treatments of tuberculosis infections in Diyala. The study showed that tuberculosis infections were decline in 2015 to 7% in compares with 10.3% in 2010 with high significant results for each years under (P value ≤ 0.001).

This results agreement with the results obtained from researcher was conducted at the department of Chest and Respiratory Diseases in Baghdad in (2014) from 629 suspected TB patients. The results revealed, that 56 (8.9%) of the specimens were positive by direct examination and 573 (91.1%) negative specimen.[13]

The results showed that 66(44.89%) of male and 81(55.1%) in female with TB infections in 2010, while 194(47.9%) of males and 211(52.09%) of females with TB in 2015, with no significant results appear between infection and the sex.

This results on agreement with study done in Kerbala Al Mukadssa showed high in male compared with female (55%,43%) respectively[14]. This study non agree with the same study was conducted in Samawah city in General Hospital of Samawah, showed

| Table 1: Distribution number of the infected patient's with TB |
|-------------------|-----------------|----------------|----------------|
| Years             | No. of total patients | No. of infected (%) | P value |
| 2010              | 1429             | 147(10.3%)         | Sig      |
| 2015              | 5772             | 405(7.0%)          | Sig      |

Sig= significant

| Table 2: Distribution of TB infection according to sex: |
|-------------------|-----------------|-----------------|----------------|
| years             | No. of infection | Male (%)        | Female (%)      | P value |
| 2010              | 147             | 66(44.89%)      | 81(55.1%)       | NS      |
| 2015              | 405             | 194(47.9%)      | 211(52.09%)     | NS      |

Ns: No significant,
that the infection in males was higher than in females, males (69.60%) and female (30.39%).[15], in the other hand this study agreement with a study conducted in Africa refer to females was higher than that of males[16] and agreement with study in Sulaimaniyah, Iraqi Kurdistan found from 307 patients were the female 157(51.1%) and male was150(48.9%) [17]. The difference in the rate of infection between males and females is due to a difference in the type and concentration of steroidal sexual and non-sexual hormones [18].

### Table 3: Distribution of infection with TB according to residues:

<table>
<thead>
<tr>
<th>Years</th>
<th>No. of infection</th>
<th>Urban (%)</th>
<th>Rural (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>147</td>
<td>85(57.82%)</td>
<td>62(42.17%)</td>
<td>NS</td>
</tr>
<tr>
<td>2015</td>
<td>405</td>
<td>207(51.1%)</td>
<td>198(48.9%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

Ns: No significant,

The results in Table (3) showed the rate number of infection in the urban was higher than rural in both years was 85(57.82%) in urban and 62(42.17%) in rural area in 2010, and in 2015 including 207 (51%) in urban and 198 (48.9%) in rural. This was in agreement with study in Islands, between 2000–2011 which appeared (33%) were in urban and (67%) in rural areas [19]. These results due to several factors, including social, economic, environmental and health, while the phenomenon of crowding and environmental pollution are important factors for transmission of infections [20].

### Table 4: Distribution of TB infections according to age groups

<table>
<thead>
<tr>
<th>Age groups</th>
<th>No.of infection 2010</th>
<th>No.of infection 2015</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>45(30.61%)</td>
<td>109(26.91%)</td>
<td>Sig.</td>
</tr>
<tr>
<td>31-50</td>
<td>60(40.81%)</td>
<td>127(31.35%)</td>
<td></td>
</tr>
<tr>
<td>51-70</td>
<td>24(16.32%)</td>
<td>130(33.58%)</td>
<td></td>
</tr>
<tr>
<td>71-90</td>
<td>18(12.24%)</td>
<td>33(8.10%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>147(100%)</td>
<td>405(100%)</td>
<td></td>
</tr>
</tbody>
</table>

Sig= Significant

In Table (4) the results appeared a ratio of infection according to the age group, we note that age groups (31-50 years) was the higher group infected by TB raise to (40.81%) because this age group more active and more susceptible to environmental pollution and most need to build the body, while in 2015 age group (70-51 years) the higher number by pulmonary tuberculosis 33.35% due to their weak immune system. The age group (90-71 years) is the lowest age group among the age groups with high significant results under (p≤ 0.001) when comparing our results with the results obtained by researchers in the Karbala province 2007 they founded that the highest incidence in age groups (15 -34 years) followed by the age group (5-14 years) this results non agreement with the results of researchers in the province of Karbala [14].

### References


