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Prevalence of Tuberculosis Patients Treated in Ba'qhuba Primary Health Care Centers (PHCCs)

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Abstract

Background: Tuberculosis (TB), an infectious disease caused by Mycobacterium tuberculosis, is the leading cause of death worldwide. It can be both prevented and treated. There are two types of tuberculosis (pulmonary TB and extrapulmonary TB).

Objective: To describe the prevalence of TB cases in PHCCs that covers health services in Ba'qhuba second health sector.

Patients and Methods: A cross sectional study was conducted in Ba'qhuba second health sector by using Data of all patients (61 cases) registered in the tuberculosis unit from 1st of Jan 2021 to 1st of Jan 2023, regarding their prevalence and relapse status. The data has been analyzed using Microsoft Excel version 2019.

Results: The findings revealed 57% of patients lived in urban areas, the gender ratio was 1:2 male to female, and 26% of cases were among the 45–54 age group. The Incidence of the disease during the two years was 16.1 cases per 100,000 persons while the prevalence was 18.2 cases per 100,000 person-year, TB prevalence regarding the PHHCs was (AL-Yarmouk, Al-Gatton, Bani Saad, and Hay Al-Mustafa) was (5, 4, 2.4, and 0.32 cases per 10,000 person-year, respectively). In terms of TB type, 51% were pulmonary TB (PTB). Regarding EPTB patients 67% had symptoms. According to the sites of infection of EPTB (bones and vertebrae, other, lymph node, pleural effusion, meningitis), they were 33%, 30%, 20%, 13%, and 3%, respectively. And 85% of all patients were in category I of treatment and 15% were in category II due to relapses and 44%of them were laboratory- confirmed and 66% of relapses were pulmonary TB.

Conclusion: The prevalence of Al-Yarmouk PHCCs was the highest, almost half of the patients were suffering from Extra-pulmonary TB, while according to relapsed cases pulmonary TB cases were two time more than extra-pulmonary.

Keywords: TB, Prevalence, Diyala, Mycobacterium

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Introduction

Tuberculosis is an infectious disease caused by a bacteria called Mycobacterium tuberculosis [1]. Although M. Tuberculosis is a pulmonary microbe, it can spread disease throughout the body. TB can also manifest itself in a variety of ways, from asymptomatic infection to a fatal illness [2,3]. From a clinical and public health point of view, patients with TB are pragmatically categorized as having either active TB disease, which is transmissible (in active pulmonary TB), and for which culture-based or molecular diagnostics can be used, or latent TB infection (LTBI), which is an asymptomatic and non-transmissible state. Patients with active TB disease experience widespread symptoms like fever, exhaustion, a lack of appetite, and weight loss, while those with pulmonary disease can experience a persistent cough and hemoptysis (coughing up blood) in more severe cases [2,3]. In Iraq, the health system has undergone notable change over the past 20 years as a result of 13 years of severe economic sanctions [4], followed by 10 years of recovery from the years of war, sanctions, the loss of health workers, and political interference. During those two periods, the detection rates for tuberculosis (TB) fluctuated between rising and falling. A total of 9,248 cases of TB were reported in 2011, placing Iraq in eighth place among the EMRO* member nations with an incidence of forty-five cases per 100,000 people and a prevalence of 74 cases per 100,000 people [5]. WHO had recommended the DOTS** strategy for tuberculosis control, with the goal of detecting 70% of newly discovered PTB cases with positive smear tests and curing 85% of those cases by the year 2005. After being implemented as a pilot project in Al-Saader city and being deemed successful by a WHO expert, DOTS adoption in Iraq, with 100% population coverage (apart from 3 Northern Governorates), began in October 2000. District TB Coordinator (DTC) units had been established across the nation in accordance with the implementation plan, and they are in charge of overseeing patient care in primary healthcare facilities (PHCCs). In order to rehabilitate and accelerate the progress of tuberculosis controlling the nation, the Ministry of Health designated tuberculosis as a health priority in 2004. The Deputy of Health Minister currently serves as chair of the higher TB Supervisory committee [6].

According to the 2015 WHO definitions, "presumptive TB" has a new definition. They are patients who present with TB-like symptoms or signs. TB Suspense was their previous name. Furthermore, the 2013 classification recognizes that there are two possible definitions of tuberculosis [7]:

1-A bacteriologically confirmed tuberculosis case is one in which a biological specimen is found to be positive by smear microscopy, culture, or WHO-approved rapid diagnostics (such as Xpert MTB/RIF). All such cases should be reported, regardless of whether or not TB treatment has begun.

2. A clinically diagnosed TB case is one that does not meet the bacteriological confirmation criteria.

However, the patient has been diagnosed with active tuberculosis by a clinician who has decided to give the patient a full course of TB treatment. This definition includes

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extrapulmonary cases without laboratory confirmation and cases diagnosed based on X-ray abnormalities or suggestive histology. Clinically diagnosed cases that are later discovered to be bacteriologically positive (either before or after treatment) should be reclassified as bacteriologically confirmed.

-- Bacteriologically confirmed or clinically diagnosed cases of TB are also classified according to: Anatomical site of disease; history of previous treatment; drug resistance; and HIV status.

This study aims to describe the prevalence of TB cases in PHCCs that covers health services in Ba'qhuba second health sector geographical area.

Patients and Methods

Data collection

After obtaining official approvals, the study was conducted by reviewing the data (61 cases) registered in the database of the tuberculosis control and treatment unit /Ba'qhuba second sector (including the data of the four PHCCs) from 1st of January 2021 to 1st of January 2023 have been included.

Study Design

A Descriptive cross-sectional study was conducted to describe the frequency of cases distribution in second Ba'qhuba sector according to the primary health care centers that covers the health services in the area (AL-Yarmouk, Al-Gatton, Bani Saad, and Hay Al-Mustafa) and the analysis was done according to the demographical information, type of TB, symptoms, treatment procedure, Date of infection and type of TB patients.

Statistical Analysis

The data has been managed and analyzed using Microsoft Excel version 2019 and presented as numbers, percentage, ratio, proportion and reinforced with tables and charts.

Results

The findings revealed that 57% of patients lived in urban areas, the gender ratio was 1:2 male to female, and 26% of cases were among the 45–54 age group as shown in Table (1).

Table (1): Demographic and clinical characteristics of TB patients

Characteristics	(NO.)	(%)
1-Gender		
* Male	20	33%
* Female	41	67%
2- Address		
***** Rural	26	43%
* Urban	35	57%
2-Age Group		
5-14	3	5%
15-24	11	18%
25-34	7	11%
35-44	5	8%
45-54	16	26%
54-64	10	16%
65+	9	15%

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Table (2): Frequency and prevalence of cases according to the Treatment Facilities

Treatment facility (PHCCs)	(NO.)	(%)	Prevalence
AL-Yarmouk	24	39%	5
Al-Gatton	15	34%	4
Bani Saad	21	25%	2.4
Hay Al-Mustafa	1	2%	0.32
Total	61	100%	

Malignant The overall The Incidence of the disease during the two years was 16.1 cases per 100,000 persons and TB prevalence in the sector was 18.2 cases per 100,000 person-year, while the TB prevalence in the PHHCs (AL-Yarmouk, Al-Gatton, Bani Saad, and Hay Al-Mustafa) was (5, 4, 2.4, and 0.32 cases per 10,000 person-year, respectively) as shown in Table (3).

Table (3): Frequency of cases according to site of infection and symptoms

Symptoms	Extrapulmonary TB		Pulmonary TB	
	NO.	%	NO.	%
Yes	20	67%	31	100%
No	10	33%	0	0%
Total	30	100%	31	100%

In terms of TB type, 51% were pulmonary TB (PTB). All the PTB cases had symptoms, and 52% of them were laboratory diagnosed. Regarding EPTB patients 67% had symptoms as shown in Table (3). 85% of all patients were in category I of treatment and 15% were in category II due to relapses and 44%of them were laboratory- confirmed and 78% of relapses were pulmonary TB.

According to the sites of infection of EPTB (bones and vertebrae, other, lymph node, pleural effusion, meningitis), they were 33%, 30%, 20%, 13%, and 3%, respectively as seen in Figure (1).

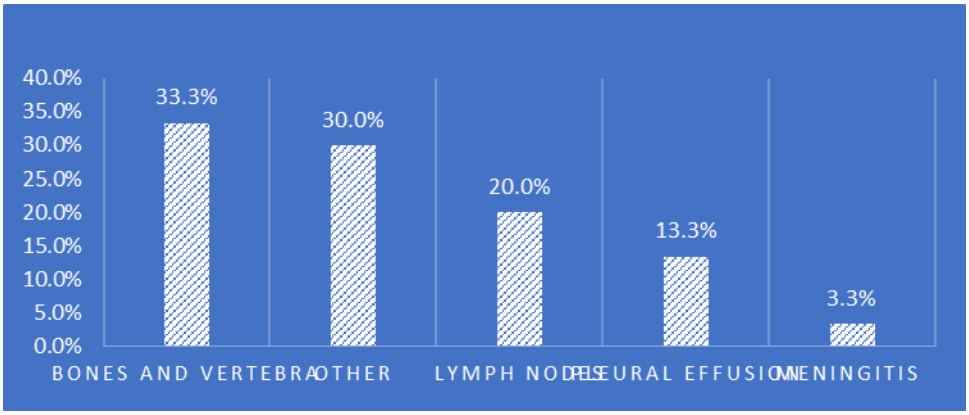

Figure (1): Distribution of extrapulmonary TB cases according to site of infection

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The Frequency of cases percentage during years 2020-2022 shows the highest reporting was seen in May 2022 as shown in Figure (2).

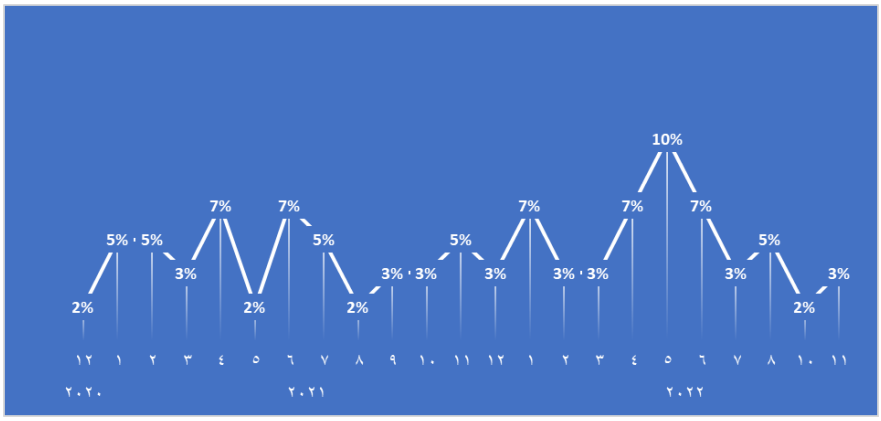

Figure (2): Distribution of cases according to year of infection reporting

Discussion

Tuberculosis was and still is a serious disease that causes many deaths in the world. This study showed that 57% of the registered patients were living in urban areas and that most of the patients were female; this result is consistent with another study in Iraq [7], where the ratio was 1:2 men to women. Half of the patients registered in this study are in the first phase of treatment. As this result was like another study in Sulaymaniyah, that study showed that most of the patients are in the first phase as well [8].

The current study also showed that the most affected age group was 45–55, and this result also agreed with another study in Iraq [9].

The current study showed that more than half of the recorded infections were PTB, and this result agrees with a study conducted in Saudi Arabia [10], [18] where that study showed that 51% of the infections were PTB, but with regard to the other half (EPTB), most of the infections were in the pleura. This result agreed with several other studies conducted in Iraq [11,12] and Iran [13] and differed with other studies conducted in Nepal [14] and Turkey [15], where these studies showed that most of the infections were in the lymph nodes.

The current study also showed that the number of laboratory-diagnosed patients was higher than the number of clinically diagnosed patients, and this result differed from another study conducted in Baghdad [9], where that study showed that only 21% of patients were laboratory-diagnosed.

As for the survival rate, this study showed that it was extremely high and was like another study conducted in Sulaymaniyah [17].

Also, this study showed that the Incidence rate was 16.1 per 100,000, and this rate is consistent with another study conducted in Iran [19], where it showed that it was 16 per 100,000.

This study also showed that the prevalence rate was higher in women compared to men, and this result is consistent with another study conducted in Iran [16] where that study showed that 20–30% of cases were higher in women than men.

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Conclusions

The prevalence of Al-Yarmouk PHCCs was the highest, almost half of the patients were suffering from Extra-pulmonary TB, while according to relapsed cases pulmonary TB cases were two time more than extra-pulmonary.

Reported cases were highest among middle aged patients specially the residents of urban areas. Females' cases were twice higher than males.

Recommendations

Based on the results of the study we hope and recommend that:

Increase workshop to health care workers on communication skills to improve the ability of communicating with patients consequently improve follow up and minimize relapses.

-Increase health promotion campaigns for the community.

-Conducting additional studies to include all primary health centers of the province.

Source of funding: The current study was funded by our charges with no any other funding sources elsewhere.

Ethical clearance: The official approvals were obtained from the Ba'qhuba second sector management to acquire the data without names to protect patient confidentiality.

Conflict of interest: Nil

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توزيع مرضى السل الذين يتلقون العلاج في مراكز الرعاية الصحية الأولية في بعقوبة

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الملخص

خلفية الدراسة: السل (TB) ، وهو مرض معد تسببه المتفطرة السلية ، هو السبب الرئيسي للوفاة في جميع أنحاء العالم. يمكن الوقاية منه وعلاجه. هناك نوعان من السل (السل الرئوي والسل خارج الرئة).

اهداف الدراسة: لوصف مدى انتشار حالات السل في مراكز الرعاية الصحية الأولية التي تغطي الخدمات الصحية في القطاع الصحي الثاني في بعقوبة.

المرضى والطرائق: أجريت دراسة مقطعية مستعرضة في القطاع الصحي الثاني في بفوقة باستخدام بيانات جميع المرضى (61 حالة) المسجلين في وحدة السل من 1 يناير 2021 إلى 1 يناير 2023 ، فيما يتعلق بحالة انتشارهم وانتكاسهم. تم تحليل البيانات باستخدام إصدار Microsoft Excel 2019.

النتائج: كشفت النتائج أن 57٪ من المرضى يعيشون في المناطق الحضرية ، وكانت نسبة الجنس 1: 2 من الذكور إلى الإناث ، و 26٪ من الحالات كانت بين الفئة العمرية 45-54. بلغ معدل الإصابة بالمرض خلال العامين 16.1 حالة لكل 100,000 شخص بينما كان معدل الانتشار 18.2 حالة لكل 100,000 شخص في السنة ، كان معدل انتشار السل فيما يتعلق بمراكز الرعاية الصحية الأولية (اليرموك والكاطون وبني سعد وحي المصطفى) (5 و 4 و 2.4 و 0.32 حالة لكل 10000 شخص في السنة على التوالي). من حيث نوع السل ، كان 51 ٪ من السل الرئوي (PTB). فيما يتعلق بمرضى EPTB ، كان لدى 67٪ منهم أعراض. وفقا لمواقع الإصابة ب EPTB (العظام والفقرات ، وغيرها ، العقدة الليمفاوية ، الانصباب الجنبي ، التهاب السحايا) ، كانت 33 ٪ ، 30 ٪ ، 20 ٪ ، 13 ٪ ، و 3 ٪ ، على التوالي. وكان 85٪ من المرضى في الفئة الأولى من العلاج و 15٪ في الفئة الثانية بسبب الانتكاسات. منهم 44٪ مؤكدون مختبريا و 66٪ من الانتكاسات كانت من السل الرئوي.

الاستنتاجات: كان معدل انتشار المرض حسب مراكز رعاية الرعاية الصحية الأولية في اليرموك هو الأعلى، حيث كان ما يقرب من نصف المرضى يعانون من السل خارج الرئة، في حين أنه وفقا لحالات الانتكاس كانت حالات السل الرئوي أكثر مرتين من حالات السل خارج الرئة.

الكلمات المفتاحية: السل، الانتشار، ديالى، المتفطرة

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