Tuberculosis in Baghdad, Iraq 2012-2016: Retrospective Study

Ali Kareem Durib[1], Ekterina Valerievna Blinova[2]

[1]Lecturer, Medical Institute Baghdad, Middle Technical University, Baghdad, Iraq, [2]Faculty Surgery Department, National Research Mordovia State University, 68 Bolshevistskaya, Saransk, Russia, 430005, Operative Surgery Department, Sechenov University, 8, Trubetzkaya Street, Moscow, Russia, 119991

Abstract

Objective (s): The present study intended at examining the prevalence of tuberculosis in Baghdad City, Iraq for the period of 2012-2016.

Methodology: A descriptive "retrospective" design was applied throughout the present study from the period of November 12th 2017 to February 13th 2018 in order to detect the tuberculosis cases with regard to patients' demographic characteristics in Baghdad City, Iraq for 2012-2016. A total of (11680) registered patients with tuberculosis are selected. An instrument was constructed for the purpose of the study. Data were collected from the health records at the National Tuberculosis Center, State TB center, and district TB center for the period of 2012 to 2016 with the use of the study instrument. Data were analyzed through the application of descriptive statistical data analysis approach of frequency, percent and total scores.

Results: The study findings revealed that there was a significant difference among them pairwise from this point of view; i.e., the number of married people is more than single, more than divorced and more than a patient with a dead spouse the literacy level of TB patients is significantly different, with (59.77%) of illiterate patients, (2.27%) of elementary education, (18.30%) of secondary education, (19.04%) of secondary education and diploma and (0.61%) university degree. Most of the patients had experienced Extra-pulmonary Tuberculosis (52.36%).

Conclusion: The study concluded that the gender ratio was accounted for the most (2.14:1) in the year of 2015. The urban zone the incidence rate was greater than that of the rural zone.

Keyword: *Tuberculosis, retrospective study, prevalence, Baghdad City, Iraq.*

Introduction

Tuberculosis, or TB, is a bacterial infection that can spread through the air. It is most often found in the lungs, but can exist in any organ in your body. When a person coughs or sneezes, they can transmit so-called "active" TB. However, many people are also infected with an inactive form of TB, known as latent TB. The bacillus that causes the disease is called Mycobacterium tuberculosis (M.tb). M.tb's unique cell wall, which has a waxy coating primarily composed of my colic acids, allows the bacillus to lie dormant for many years. The body's immune system may restrain the disease, but it does not destroy it. While some people with this latent infection will never develop active TB, five to ten percent of carriers will become sick in their lifetime(1).

The incidence of TB varies with age. In Africa, TB primarily affects adolescents and young adults (WHO, 2011a). However, in countries where TB has gone from high to low incidence, such as the United States, TB is mainly a disease of older people, or of the immuno-compromised(2,3).

The limited availability of data on health status is a major constraint in assessing the health situation in developing countries. Surveillance data are lacking for many major public health concerns. Estimates of prevalence and incidence are available for some diseases but are often unreliable and incomplete. National health authorities differ widely in capacity and willingness to collect or report information. To compensate for this and improve reliability and international comparability, the

World Health Organization (WHO) prepares estimates in accordance with epidemiological models and statistical standards[4-12].

Based on the early stated facts, the present study ought to carry out a retrospective study to investigate the detected cases of tuberculosis in Baghdad, Iraq for 2012-2016 with respect to its demography.

Method

A descriptive "retrospective" design was employed throughout the present study from the period of November 12th 2017 to February 13th 2018 in order to detect the tuberculosis cases in Baghdad City, Iraq for 2012-2016. A convenient sample of (11680) registered patients with tuberculosis in Baghdad, Iraq for the period of 2012-2016. These patients were males and females and they were one year to over than 65 year of age. An instrument was constructed for the purpose of the study. It is comprised of items that focused on patients' characteristics of age, gender and type of Tuberculosis. A pilot study was conducted for the determination of the study instrument's content validity, internal consistency reliability and adequacy. The study was carried out for the period of December 10th -20th 2017. Content validity of the instrument was determined through panel of (15) experts. These experts were (5) faculty members at the College of Nursing University of Baghdad, (5) Faculty members at the College of Medicine University of Baghdad and (5) epidemiologists at the Ministry of Health and Environment. They were presented with copy of the study instrument and asked to review it and provide comments for its modification to be more appropriate measure of the study. They had reviewed the instrument and presented their comments with an agreement that the instrument is content valid. Internal consistency reliability was determined for the study instrument through the use of split-half technique and measurement of Cronbach alpha correlation coefficient. The result indicated that Cronbach alpha correlation coefficient was r=0.85 which adequately reliable measure for the problem underlying the present study. Data were collected from the health records at the National Tuberculosis Center, State TB center, and district TB center for the period of 2012 to 2016 with the use of the study instrument. Data were analyzed through the application of descriptive statistical data analysis approach of frequency, percent and total scores.

Results

Table 1a presents that female patients were slightly larger than male ones. Relative to the living place, this table depicts that patients living in the urban area were accounted for the most (91.85%) (Table 1b).

The results in the Table 1c reveal that 41.92%, 18.53%, 31.05% and 8.50% of the patients were married, single, divorced and patients with deceased spouses, and there was a significant difference among them pairwise from this point of view; i.e., the number of married people is more than single, more than divorced and more than a patient with a dead spouse.

The data show that the literacy level of TB patients is significantly different, with 59.77% of illiterate patients, 2.27% of elementary education, 18.30% of secondary education, 19.04% of secondary education and diploma and 0.61% university degree (Table 1d).

Table 1e indicates that most of the patients had experienced Extra-pulmonary Tuberculosis (52.36%).

Table (2) reveals that reported incidence rate of TB cases according to the geographically in Baghdad during 2012-2016. The rural area incidence rate was 66/100,000 per year and Urban area 166/100,000 per year. The incidence rate of rural area was almost same since 2012 to 2016. Among the urban zone the incidence rate was slightly decreasing during 2012- 2016.

Conclusion

Based on the interpretation of the study findings, the study can conclude that:

1. Female patients were slightly larger than male ones.
2. Most of the patients were married, urban area residents, illiterate and having Extra Pulmonary Tuberculosis.
3. The gender ratio was accounted for the most (2.14:1) in the year of 2015.
4. The urban zone the incidence rate was greater than that of the rural zone.

Recommendations:

Based on the early stated conclusion, the present study can recommend that:

1. Patients who were young males and females, married, illiterates and urban area residents can be provided with all means of treatment and preventive measures.
2. Further research with a large sample size and wide range of variables can be conducted.

Table (1). Distribution of Demographic Characteristics of Tuberculosis Patients Referred to Baghdad Health Centers

a. Gender

Demographic Characteristic		Frequency	Percent
Gender	Male	5747	49.5
	Female	5933	50.5

b. Living place

Demographic Characteristic		Frequency	Percent
Living place	Urban	10729	91.85
	Rural	951	8.15

c. Marital Status

Demographic Characteristic		Frequency	Percent
Marital Status	Married	4897	41.92
	Single	2165	18.53
	Divorced	3627	31.05
	Other	991	8.50
	Total	11680	

d. Education

Demographic Characteristic		Frequency	Percent
Education	Illiterate	6980	59.77
	Primary	266	2.27
	Secondary	2137	18.30
	Diploma	2225	19.04
	University	72	0.61
	Total	11680	

e. Tuberculosis Type

Demographic Characteristic		Frequency	Percent
TB type	Exta-pulmonary TB	4539	52.36
	Pulmonary TB	4129	47.64

Table (2). IR or TB in Iraq Baghdad during (2012-2016) by Urban and Rural Areas

IR/100000/Year		
Years	**Rural**	**Urban**
2012	619	1649
2013	631	1576
2014	671	1708
2015	712	1860
2016	699	1555

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq

Conflict of Interest: The authors declare that they have no conflict of interest.

Funding: Self-funding

References

1. TB Alliance (TBA).. The Pandemic. 2018. Available at: https://www.tballiance.org/why-new-tb- drugs/ global-pandemic
2. Kumar, V.; Abbas, A.; Fausto, N. and Mitchell, R. Robbins Basic Pathology. 8th edition, Saunders Elsevier. 2007; 516-522.
3. Centers for Disease Control and Prevention (CDCP). 2005 Surveillance Slide Set. 2006.
4. World Health Organization (WHO). WHO Global Tuberculosis Report. 2016.
5. Bayer R, Castro K. Tuberculosis Elimination in the United States – The Need for Renewed Action. N Engl J Med. 2017;377;1109–1111.
6. Chakrabartty A, Basu P, Ali K, Sarkar A, Ghosh D. Tuberculosis Related Stigma and Its Effect on the Delay for Sputum Examination under the Revised National Tuberculosis Control Program in India. Indian Journal of Tuberculosis. 2018;65(2);145–151. https://www.sciencedirect.com/science/article/pii/S0019570717301476
7. Alkabab Y, Al-Abdely H, Heysell S. Diabetes-related Tuberculosis in the Middle East: An Urgent Need for Regional Research. Int J Infect Dis. 2015; 40;64–70.

8. Glaziou p, Sismanidis C, Floyd K, Raviglione M. Global Epidemiology of Tuberculosis. Cold Spring Harb Perspect Med. 2015;5(2);a017798.

9. Janmeja A, Aggarwal D, Dhillon R. Factors Predicting Treatment Success in Multi-drug Resistant Tuberculosis Patients Treated under Programmatic Conditions. Indian Journal of Tuberculosis. 2018; 65(2);135–139. Available at: https://www.sciencedirect.com/science/article/pii/S0019570717302494

10. Jiang Q, Lu L, Wu J, Yang C, Prakash R, Zuo T, Liu Q, Hong J, Guo X, Gao Q. Assessment of Tuberculosis Contact Investigation in Shanghai, China: An 8-year Cohort Study. Tuberculosis. 2018;108;10–15.

11. Karadakhy K, Othman N, Ibrahimm F, Saeed A, Amin A. Tuberculosis in Sulaimaniyah, Iraqi Kurdistan: A Detailed Analysis of Cases Registered in Treatment Centers. Journal of Respiratory Diseases, Thoracic Surgery, Intensive Care and Tuberculosis. 2016;15(4);197–204.

12. Maharjan S, Singh A, Khadka D, Aryal M. Drug Resistance Pattern in Pulmonary Tuberculosis Patients and Risk Factors Associated with Multi-Drug Resistant Tuberculosis. JTR. 2017;5(2);106–117.