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Tuberculosis Cases in Mardin Between 2012 And 2018

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ABSTRACT

Tuberculosis (TB) is a respiratory-borne disease. It can hold most of the lungs and other tissues and organs. In this study, we aimed to offer the clinical and demographic data of TB patients who were followed-up in our province between 2012 and 2018.

In our province, tuberculosis dispensary records were examined retrospectively between 2012 and 2018.

Of 249 patients, 125 (50.2%) were females and 124 (49.8%) were males. The mean age of the patients was 37.5 years.

There were 132 (53%) patients with pulmonary tuberculosis, 112 (45%) with extrapulmonary tuberculosis and 5 (2%) patients with both pulmonary and extrapulmonary tuberculosis. 239 cases (96%) were new cases and 10 (4%) patients had recurrence. While 109 (43.8%) of the patients had smear positivity, 13 patients (5.4%) were diagnosed with pleural biopsy and 87 (34.6%) patients were diagnosed histopathologically with lymph and other organ biopsies.

In 13 (5.4%) patients, only ADA elevation and 27 (10.8%) patients were diagnosed clinically and radiologic. 111 (44.6%) patients had no contact and 38 (15.3%) patients had a history of in- house or out - of - home contact. In addition, 100 (40.2%) patients had no known contact. 101 of our patients have studied culture, 20 of them have culture negativity, 81 of them have culture positivity. 5 patients had rifampicin resistance, 4 had streptomycin resistance, 5 had ethambutol resistance and 11 had isoniazid resistance. While 6 (2.4%) patients were dead, 78 (31.3%) patients were cured. Treatment success was achieved in 153 (61.5%) patients and treatment was abandoned in 8 (3.2%) patients.

Tuberculosis is a disease that affects especially young people. Early diagnosis and treatment of TB patients are especially important for infectious diseases.

Key Words: Tuberculosis, Lymphadenitis, Adeno deaminase

Introduction

Tuberculosis (TB) disease is caused by Mycobacterium tuberculosis bacillus. TB is transmitted from the patient to the intact person by air. Most infectious patients; In sputum microscopy, acid-resistant bacillus (ARB) is positive, cavity lung and larynx tuberculosis. Patients with smear negative tuberculosis have less infestation. People with close and long-term contact with the patient are at increased risk of infection. These are; family members, friends of the same house, workplace friends. With effective treatment, the number of bacilli and the frequency of cough are rapidly decreasing during the days. Infection of patients ends practically in 2-3 weeks with effective treatment. (1,2)

According to the report of the World Health Organization: 10.4 million people were infected with tuberculosis in 2016 and 1.7 million people died due to tuberculosis. (2)

As in developing countries, TB still remains a major problem in our country. In particular, the insufficiency of TB diagnosis, treatment and follow-up has begun to pose a significant threat to public health. The inability to diagnose the disease causes the addition of new individuals to the infection pool, inadequate treatment, and non-compliance with the treatment, and the number of resistant cases increases in the community.

In this study; We aimed to show the course of TB in Mardin and the characteristics of the patients, treatment success and drug resistance profiles.

Materials and Methods

In this study, 249 patients with TB who were diagnosed, treated and undergoing treatment in tuberculosis dispensary (VSD) in Mardin were examined retrospectively. Clinical records of the patients were examined and the information obtained was recorded in a standard form.

All patients were recorded according to age, gender, diagnostic method, material, history of contact, smear and culture status, new case/recurrence patient status, treatment success of patients and drug resistance profiles and

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Table 1. Demographic Characteristics of Patients

Gender	Male	124(%49,8)
	Female	125(%50,2)
Age		37,5

Table 2. Location of Cases

Pulmonary	132(%53)
Extrapulmonary	112(%45)
Both Pulmonary And Extrapulmonary	5(%2)

Table 3. Case Definitions

New Definition	Recurrence Definition
239(%96)	10(%4)

cultures related to tuberculosis.

In this study, at least three bacteriological samples (sputum and/or fasting gastric juice) were taken and culture methods were used at least three times before diagnosis and treatment.

It was determined that pleural biopsy was performed in all patients with TB pleurisy and studied high ADA to the patients with pleurisy were not diagnosed with histopathological or bacteriological diagnosis.

In our study, definitions in the book titled "Tuberculosis Diagnosis and Treatment Guide" published by the Ministry of Health in 2011 were used for some definitions.(3)

New Case: Patients diagnosed with TB who had never received TB treatment or received treatment for less than a month.

Recurrence: Prevalence of sputum positivity in patients who were previously diagnosed with TB and successfully completed their treatment. Patients with recurrent smears were found to be diagnosed with TB on the basis of clinical and radiological data.

Cure: In the initial sputum smear positive patient, together with clinical and radiological improvement, one should show at least two sputum smear negativity, one at the time of treatment and one at the time of treatment completion.

Treatment Completion: In the case of the patient who completed the prescribed treatment within the duration of treatment, if the sputum examination cannot be performed during the maintenance period or at the end of the treatment, it is considered successful with the clinical and radiological findings and the termination of the treatment. If the treatment result is successful in cases of out of lung TB, this group is added.

Results

In our province, tuberculosis dispensary records were examined retrospectively between 2012-2108. Of 249 patients, 125 (50.2%) were females and 124 (49.8%) were males. The mean age of the patients was 37.5 years (Table 1). There were 132 (53%) patients with pulmonary tuberculosis, 112 (45%) with extrapulmonary tuberculosis and 5 (2%) patients with both pulmonary and extrapulmonary tuberculosis (Table 2). 239 cases (96%) were new cases and 10 (4%) patients had recurrence (Table 3). While 109 (43.8%) of the patients had smear positivity, 13 patients (5.4%) were diagnosed with pleural biopsy and 87 (34.6%) patients were diagnosed histopathologically with lymph and other organ biopsies.

In 13 (5.4%) patients, only ADA elevation and 27 (10.8%) patients were diagnosed clinically and radiologic. (Table 4). 111 (44.6%) patients had no contact and 38 (15.3%) patients had a history of in - house or out - of - home contact. In addition, 100 (40.2%) patients had no known contact. 101 of our patients have studied culture, 20 of them have culture negativity, 81 of them have culture positivity. 5 patients had rifampicin resistance, 4 had streptomycin resistance, 5 had ethambutol resistance and 11 had isoniazid resistance (Table 5). While 6 (2.4%) patients were dead, 78 (31.3%) patients were cured. Treatment success was achieved in 153 (61.5%) patients and treatment was abandoned in 8 (3.2%) patients (Table 6).

Table 4. Diagnosis of Cases

ARB (+) *		109(%43,8)
Biopsy	Pleura	13(%5,4)
	Lymph and other tissue	87(%34,6)
High of ADA**		13(%5,4)
Clinical and Radiological		27(%10,8
*: Acid Resistant Basillus		
**: Adeno Deaminase		

Table 5. Drug Resistance Status

Isoniazid	11
Rifampicin	5
Ethambutol	5
Streptomycin	4

Table 6. Treatment Status of Patients

Cure	78(%31,3)
Treatment Completion	153(%61,5)
Treatment Abandoned	8(%3,2)
Dead	6(%2,4)

Discussion

Tuberculosis dispensaries are the main elements of the TB war and the national TB control program. According to Ministry of Health data TB incidence rate in Turkey has dropped from 27 per hundred thousand in 2007 to 18 per thousand in 2014 to face. According to the report in 2017, it was reported as 18 per hundred thousand. In our study, the incidence of TB in Mardin was 12.6 per hundred thousand. If the case-finding studies in a society do not cover all individuals of the population, the bacterial and radiological diagnostic methods are not of sufficient quality, and if the registration and reporting system is insufficient, the numbers associated with the disease incidence will be insufficient to reflect the extent of the TB problem in that population. It also received a large number of immigrants because of the war in Syria. Both diagnostic methods, recording and alarm system as well as an increase in the diagnosis of immigrants than migrant population and the incidence of TB patients in our province, we believe that due to the lack of registration systems remain below the average in Turkey.

The indication that TB disease is taken under control is the shift of the age of the disease to the middle age group and then to the older age group. TB has become an advanced age disease in developed countries. (4) It is concentrated in 15-54 age group in developing world countries. In the studies performed in our country, we see that the incidence period of the disease is still 20-49 in the young age group. (5) Success in TB war depends on the reduction in the incidence of Tb primarily in the younger age group. In our study, the mean age of the patients was 37.5 and it was more frequent in the young population. The fact that the average age is low and the cases are mostly in the young population is an indicator that TB disease has not been controlled yet. In addition, the fact that TB cases are more concentrated in the young-active population, where social mobility is higher, indicates that the disease is threatening the whole population.

It is expected that 65% of all TB cases in one region would be lung Tbc (50% smear positive and 15% smear negative). (3) In a study that examined all patients registered in a province, 47.7% of patients had lung, 48.2% had extrapulmonary and 4.1% had lung and extrapulmonary involvement. (6) According to the data of a military center, 81.9% of new patients had pulmonary tuberculosis and 18.1% had extrapulmonary tuberculosis. (7) Lung TB cases were 76.6% in Elâzığ, 65% in Van, 59-67% in Zonguldak, 71.8% in Malatya and 75.9% in Ankara. (8) In our study, the pulmonary TB rate was 53% and the diagnosis of extrapulmonary TB

was higher than expected. We believe that this is due to the increase in the rate of imaging and diagnosis. Because the use of lymph nodes in the mediastinum area was frequent and the biopsy was easier to diagnose, the diagnosis rate was increased.

The diagnosis of TB should be made microbiologically. A positive finding of 70% of the bacteriological examinations shows that bacteriological examination provides a high rate of diagnosis. (3) There are significant differences in bacteriological diagnosis in different countries around the world. In 1998, 80.4% of all patients with pulmonary and non-pulmonary TB were positive for culture, 0.9% with spreading positivity, 12.0% with clinical case definition and 6.3% with physician decision has been diagnosed. (9) In a study, acid-fast bacilli was positive in 62.5% of TB patients and acid-resistant bacillus culture was positive in 79.1% of patients. In another study conducted in India, 53.4% of new lung TB cases and 46.9% of all new cases were positive for smear. (10) In the study performed by Özkara et al., 3699 (40.2%) of 9179 TB patients were positive. (11) Kocabaş in 1990 for his work in Turkey, where bacteriological examination performed 41.3% of patients with respiratory TB were reported to be positive in general and 34%. (12) In a study in which all the data of a province were examined, 42.2% of tuberculosis patients did not undergo bacteriological examination, 21.7% of them had smear and culture positive, 26.8% of them had smear and culture negative, 8.7% had while the smear was negative, it was determined that the culture was positive and the contribution of culture to bacteriological diagnosis was 8.7%. (6) In our study, 43.8% bacilli positivity was found and similar results were obtained. However, histopathological diagnosis and ADA elevation in 45.4% is due to the high rate of extrapulmonary TB and high biopsy rate.

Minimization of relapse rate depends on regular and adequate treatment of patients. In a study conducted in the province of Sanliurfa in our region, were evaluated as new cases 89.8% and 7.5% as recurrent cases of tuberculosis patients treated between 2001 and 2006. (5) Recurrence rates in Ankara, Malatya, VSD, Elazığ and Bingöl were found as 5.9%, 15.1% and 9%, respectively. The number of relapses is greater in areas that are not directly supervised. (13) In our study, recurrence rate decreased to 4% of the rate. Because of the increase in patient follow-up and information about the disease, treatment abandons decreased and the number of recurrent cases decreased.

Mortality rates are particularly high in countries where AIDS is prevalent and in countries where there are no TB drugs. Turkey was determined to be 3.8% in 1988. Özkara et al of a comprehensive study on the mortality rate, were found to be 5% for older patients 2.3% for new cases in 1999. (11) was found to be 3.3% in Elazığ, 6% in Isparta and 5.8% in Eskişehir. (14) In our study, 2.4% was similar to other studies.

Previously, TB patients had a history of contact with a patient with TB in the studies conducted in Turkey between 5.1% and 34%. The history of contact of the cases was 8.4% in Isparta-Burdur, 24.8% in Eskişehir, 8.9% in Afyon and 27% in İzmir. In a study by Özkara et al., A total of 9179 patients had 32,479 contacts; an average of 3.54 contacts per patient. (11) was at the lowest level with 2.85 in Trakya and the highest in the Western Karadeniz with 3.89. In our study, it was determined as 15.3%. All these data emphasize the importance of contact examination in terms of finding new cases. Dispensaries also play an important role here.

The most important issue in the TB control program, especially smear positive cases, is that the diagnosis and treatment of the cases are completed and the cure rate is at least 85%. In a study performed by Özkara, 82.4% of 9179 patients had treatment success (cure + treatment success) and 36.8% cure rate. (11) In the two studies conducted in Elazığ and Bingöl, it was stated that the cure rate was not determined at all. 50.3% cure rate was found in Ankara Central VSDs. In our study, 31.3% of the patients were cured and 61.5% of the patients completed the treatment. The reason for this is that we do not want arb to control sputum.

Drug resistance in the global epidemiology of tuberculosis cases; The rate of resistance to any drug in the case of new tuberculosis cases is 0-56%, while this rate is between 0-86% in patients who were treated previously, and the rate of resistant strains is higher in patients receiving treatment. (15) In a study conducted by Alişkan et al., The rate of any drug resistant strain was 14%. (16) In our study, the most common drug resistance is against isoniazide and the rate of resistance to any drug is 10.4%. Resistance studies have increased in recent years due to the fact that resistance has not been studied in our old cases. In addition, we think that resistance to medicines may be decreased in recent years, as treatment abandonments are further reduced. For this

reason, in order to prevent the development of drug resistance, both health and tuberculosis dispensary workers should be informed about the abandonment and resistance development until the end of the treatment.

As a result, it was observed that new cases were seen in young age group in our region, and the cure rate was low in patients diagnosed with high inclusion rate. In our study, the incidence of TB in Mardin was 12.6 per hundred thousand. With the increase in the rate of diagnosis and imaging, TB lymphadenitis cases were observed to be increased. Especially in the recent years with increasing drug resistance studies, treatment abandonments should be reduced in order not to develop resistance to the drug in tuberculosis. It should also be considered that the likelihood of recurrence may be higher in resistant cases. For our province, TB remains a major health problem.

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