

Time To Beginning Therapy And Affecting Factors In Turkish Soldiers With Pulmonary Tuberculosis. An Analysis Of A Turkish Military Chest Diseases Hospital

O OKUTAN

Citation

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Abstract

Objectives: This study was designed to assess the time between first appearance of symptoms and the start of treatment of tuberculosis patients.

Design: Ninety-seven patients with pulmonary tuberculosis were enrolled in the study. We surveyed their complaints and education levels, opportunity to visit a healthcare facility and periods elapsed until diagnosis and treatment.

Results: The mean age was 21.86 ± 2.11 years. Of these, 63.7% claimed that they had visited an infirmary as soon as their complaints had started. We determined that even patients with a high education level had also neglected their complaints. The time until initiation of therapy was 23.56 ± 17.46 days in patients who visited an infirmary immediately, and 31.17 ± 19.24 days in the other group ($p < 0.05$). Time to initiation of therapy was 26.3 ± 18.4 days for all cases.

Conclusion: The causes of delay of treatment were; due to either late admission to health facilities (because of factors depending on patients themselves) or due to the inexperience of the practitioner in the infirmary.

We conclude that both patients and physicians should be more alerted about tuberculosis and its major effect on the community.

INTRODUCTION

Socio-economic and cultural structures of societies are the most important factors for fighting against tuberculosis. For that reason, in developed societies, tuberculosis is not anymore an important health problem. But it's becoming more important because of AIDS and migration. In developing and underdeveloped countries, there are still problems in fighting tuberculosis.

A characteristic of tuberculosis is that the disease progresses insidiously until the symptoms are seen. During this period, the patient is not aware of the disease. Meanwhile he spreads the disease because of the reproduction characteristic of tuberculosis bacillus, especially in cases where microscopic sputum search reveals no bacillus. This situation is also a major cause of late diagnosis, so that new cases cannot be diagnosed and treated on time. Delay in diagnosis and treatment becomes much more important in public places such as dorm schools, prisons and military units.

In our research we aimed to investigate the time period passing until the treatment starts and the factors affecting

this period in our study group.

MATERIAL AND METHOD

Ninety-seven patients with pulmonary tuberculosis who admitted to Gulhane Military Medical Academia Camlica Chest Diseases Hospital June-1999 to October-1999 were enrolled in the study. All patients were subjected to history, physical examination, hemogram, postero-anterior and lateral chest X-ray, sputum acid-fast bacillus (AFB) smear and culture. None of the patients had pulmonary tuberculosis disease before. The patients were bacteriologically and histopathologically examined and history of pulmonary tuberculosis was surveyed by 17 questions. Questionnaire forms were included that their complaints and education levels, opportunity to visit and periods elapsed till diagnosis and treatment was started. And we evaluated the factors effecting this period.

Statistical analysis was made by the computer and used student-t test and Pearson bi-variate correlation test.

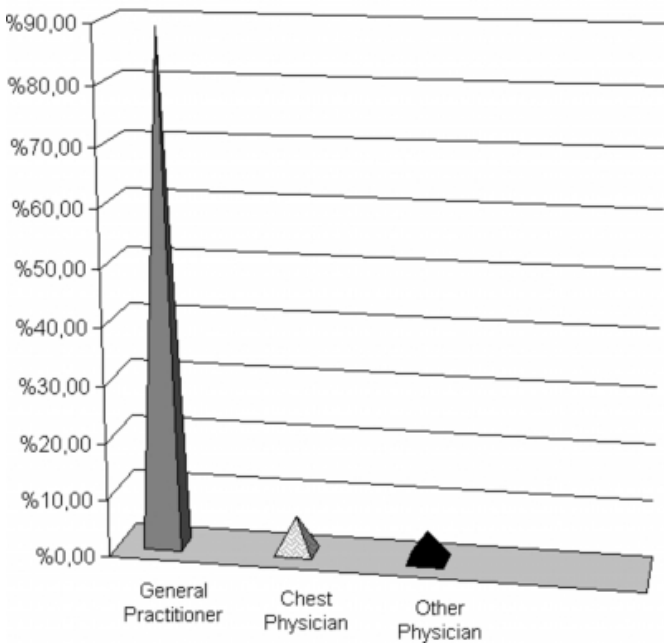
RESULTS

The patients average age was 21.9 ± 2.1 (20-29) and period of duty was 8.9 ± 5.2 (1-18) months. Of patients, 7 were uneducated, 42 were primary school graduates, 44 were high school graduates, and 4 were university graduates.

After the onset of complaints, 63.9% (62/97) of the patients visited the doctor immediately, and 36.1% (35/97) of the patients were delayed in admission to a physician. We found that first complaints leded the patients to a general practitioner in 88.7% (86/97), a chest physician in 6.2% (6/97), and other physician in 5.1% (5/97) respectively. More than half of the cases (56.7%) were give medications other than anti-tuberculous treatment. We found that percentage of inappropriate treatment was 62% (53/86) among general practitioner, 0% for chest physicians and 40% (2/5) for other physicians (Figure 1).

Figure 1

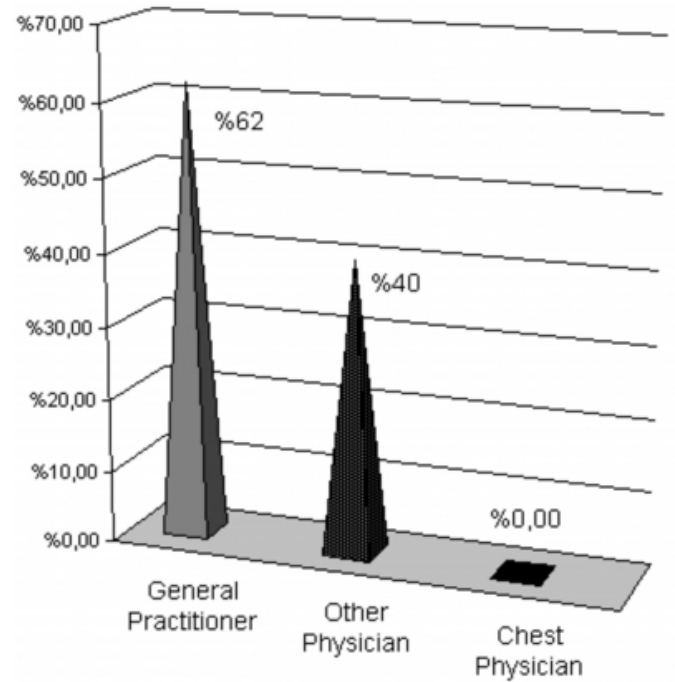
Figure 1: Distributions of first evaluating doctor



The duration of inappropriate treatment was 1-6 days for 38.2% (37/97) of the patients, 7-14 days for 30.9% (30/97) of the patients, and more than 15 days for 30.9% (30/97) of the patients (Figure 2).

Figure 2

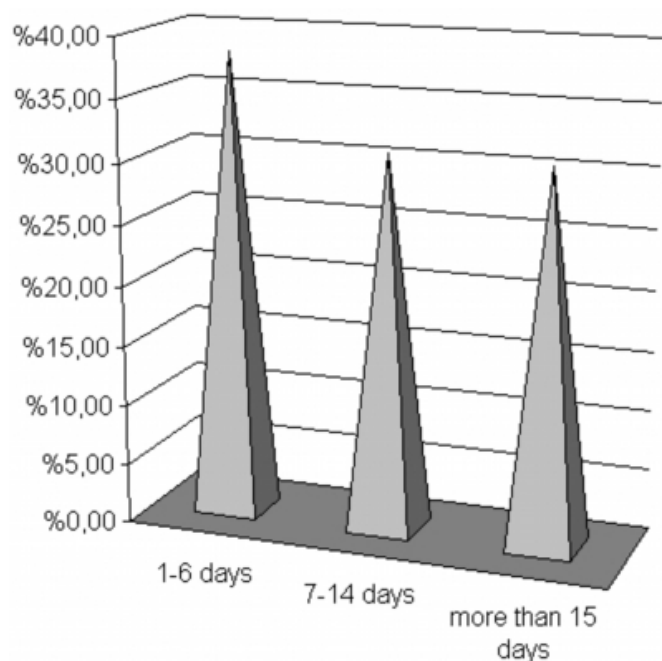
Figure 2: Disribution of miss treatment



We found that average time of admission to the first primary doctor was 15.60 ± 13.71 (2-60) days. The time period to the admission into a hospital was 21.9 ± 19.4 (0-75). Period from hospitalization to beginning of treatment was 4.2 ± 4.0 (1-20) days. Total period from starting of symptoms to initiation of anti-tuberculous treatment was 26.3 ± 18.4 (2-78) days. In the 33.47% (32/97) of the cases treatment was delayed more than 30 days. Distribution of treatment periods are shown on Figure 3.

Figure 3

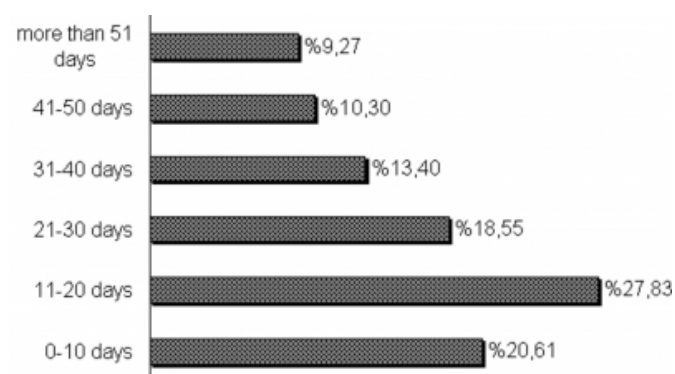
Figure 3: Distribution of Miss Treatment Times



When we evaluated the factors effecting starting times of treatment, we found a negative correlation between level of education and time to visit a doctor ($p=0.04$). The delay was significantly important in those patients ($r=0.409$ $p=0.01$). The time to initiation of therapy was $23.56 \pm 17.47(2-75)$ days in patients who visited an infirmary immediately, and $31.17 \pm 19.24(9-78)$ days in the others ($p<0.05$).

Figure 4

Figure 4: Distribution of total delay



DISCUSSION

It's possible to treat tuberculosis but due to delays in diagnosis and treatment, there are still some problems to control the disease. Patients with positive sputum AFB (+) can quickly infect several people in developing countries due to dangerous delays of treatment (1). Tuberculosis progresses

insidiously during the initiation period. It takes time to see the first symptoms of the disease. Cough is a basic symptom and at the same time it's the most important way of contamination. Patients who are sputum AFB (+) dispense an average of 3500 bacillus with each cough.

In a study with 100 patients it was found that at the time of diagnosis, 95.4% of the patients had medium and advanced level radiological symptoms (2). The delay in diagnosis and treatment also causes disease progression. Delay in diagnosis and treatment also affects patient responses to the treatment in a study conducted in former Yugoslavia (3).

Senyigit et al. (4) found that the missed treatment rate was 39.7% in 354 active pulmonary tuberculosis patients (total number of patients was 441). In this study, they found that the distribution of miss treatment was caused in 66.9% by general practitioner, and 39.1% by different specialist (91% of them internal medicine specialist).

Our study shows that after the beginning of complaints, 63.9% (53/86) of the patients visited the doctor immediately. Other patients could not visit a physician because of factors depending on the patients themselves or other conditions. Most of the patients (88.7%) visited general practitioners and 62% of them were given medicine different from tuberculosis treatment. The miss treatment rate was 40% among specialist excepts pulmonologists.

Many studies about delay in diagnosis have been done. In a study performed in Spain, it was reported that in 664 sputum AFB (+) patients 66.4% were diagnosed with delays of more than one month (5). In Bavaria (Germany) and in Holland, in 11% of all sputum AFB (+) patients, it was found that total delays caused by both patient and doctor were more than 6 months (6). Von Dijk et al (7) found that mean time in new cases was 3.5 weeks (25 days). Time to initiate treatment was found to be more than 4 weeks in 54% of patients by Gulbaran et al (8). In our study, the rate of delaying time to diagnosis of more than 30 days was 33.47%. Tuberculosis treatment was started in more than half of the patients (66.53%) within 30 days.

Another study in Malaysia with 100 patients observed a total delay of 90 days and only 47% of all patients were diagnosed and treated within 30 days after the first examination (2). Another outcome of the study shows that delays mostly resulted from doctors working at government owned health centers.

We found that the total period to start tuberculous treatment was 26.3 days. In our preliminary study, we found 20 days (9). Senyigit et al (4). found that the average time period from the beginning of symptoms to diagnosis was 114 days. This period was found to be 74.6 days and 69 days by Kocabas et al(10) and Celik et al (11) respectively.

The most important reason of the delay caused by the patient is that the patient is not aware of their health problem and that educational policy is not good enough. To decrease the delays caused by practitioner doctors (working at community tuberculosis centers) they could be educated after graduation.

In our study, the period was shorter compared to other Turkish studies, because military physicians would have better control opportunities than their associates. Also, military physicians are more careful to the contagious diseases via airway like tuberculosis.

Finally, initiation of treatment as soon as possible after the beginning of the first symptoms is as important as appropriate and adequate treatment.

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Author Information

Oguzhan OKUTAN, MD

Pulmonary Diseases, Military, GATA Camlica Chest Diseases Hospital ISTANBUL