ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Treatment Outcome of Patients with Extrapulmonary Tuberculosis on DOTS in a Teaching Hospital.

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ABSTRACT

Tuberculosis is one of the biggest enigmas facing mankind. DOTS (Directly Observed Treatment, Short-course) strategy in TB control has considerably improved the quality of diagnosis and treatment outcome globally. The aim of the study was to determine the outcome of patients with extrapulmonary TB treated with directly observed short course therapy and to assess the difference in outcome of treatment in HIV positive and negative patients infected with extrapulmonary TB. Data was collected from cases of extrapulmonary TB diagnosed in Sri Siddhartha Medical College Hospital and Research centre, Tumkur between the year 2010 and 2012 and treated by short course chemotherapy. Treatment outcome was recorded as cured, completed treatment, defaulted, failed, or died based on the definitions given by the WHO. The most common site of extrapulmonary TB was pleura followed by meninges and abdomen. Among patients treated by DOTS, 82% completed treatment, 7.9% were defaulters, 9.7% died and there were 0.4% cases of treatment failure. This study has given us the idea of the treatment outcome of patients with extrapulmonary TB treated under DOTS and also the difference in outcome of treatment in HIV positive and negative patients infected with extrapulmonary TB. Coinfection with HIV was seen to have a bad outcome on patients with extapulmonary TB. The most common reason for default was irregular treatment, followed by alcohol abuse indicating an urgent need to take measures to check the irregularity of treatment and alcohol abuse in patients who are on treatment.

Keywords: Extrapulmonary TB, HIV, DOTS

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ISSN: 0975-8585

INTRODUCTION

Tuberculosis is one of the biggest enigmas facing mankind. The National Tuberculosis Programme of India, established in 1962, created an infrastructure for tuberculosis control throughout the country. A comprehensive review in 1992 by a committee of national and international experts observed that the programme had not achieved the desired results [1]. When the World Health Organization (WHO) declared TB a global health emergency in 1992, it was prevalent in almost all countries of the world. WHO estimated a total of 9.27 million new cases worldwide in 2007 with 13.7 million prevalent cases and 1.3 million deaths with >90% in developing countries. Interaction of HIV with TB, income inequality, and emergence of MDR-TB are the key drivers to re-emergence of tuberculosis in developing countries. Asia is home to 55% of the global case burden followed by Africa with 31% [2]. Although pulmonary TB is the most common presentation of TB disease, it can involve any organ in the body. Extra pulmonary Tuberculosis (EPTB) is defined as the isolated occurrence of TB in any part of the body other than lungs. Mycobacteria may spread to any organ of the body through lymphatic or haematogenous dissemination and lie dormant for years at a particular site before causing disease. Manifestations may relate to the system involved, or simply as prolonged fever and nonspecific systemic symptoms. Hence diagnosis may be elusive and is usually delayed. The proportion of EPTB among all TB cases varies from country to country.[2] The emergence of Human immunodeficiency virus (HIV), led to the rise in the incidence and prevalence of tuberculosis (TB) worldwide. Immunosuppression induced by HIV infection modified the clinical presentation of TB, resulting in atypical signs and symptoms, and a more frequent extrapulmonary presentation. An individual who is HIV-positive has 10 times increased risk of developing TB compared to an HIV-negative person, the life time risk is 50% for an HIV-positive person and 5–10% for an HIV-negative person [3]. The extrapulmonary manifestation of TB is prevalent in 10-34% of non-HIV cases while it occurs in 50-70% of patients co-infected with HIV.[2] Tuberculous lymphadenitis is the most common form of extra-pulmonary tuberculosis and cervical lymph nodes are most frequently involved group among peripheral lymph nodes [4].

DOTS (Directly Observed Treatment, Short-course) strategy in TB control has considerably improved the quality of diagnosis and treatment outcome globally. In India, DOTS was implemented since 1993 for effective management of TB treatment [5]. DOTS has been adopted by many countries as a TB control strategy to reach the global targets. By the end of 2004, about 80% of all the world population had access to DOTS in 183 countries. The Revised National Tuberculosis Control Programme (RNTCP), based on the DOTS strategy, began as a pilot programme in 1993 and gradually expanded to cover a population of 20 million by mid-1998 [6]. The most important component of DOTS is to ensure patient's adherence to treatment by giving every dose under direct observation. Treatment compliance may be a problem due to poor awareness of TB including treatment [5]. The aim of this study was to determine the outcome of patients with extrapulmonary TB treated with directly observed short course therapy and to assess the difference in outcome of treatment in HIV positive and negative patients infected with extrapulmonary TB.

MATERIALS AND METHODS

Data was collected from cases of extrapulmonary TB diagnosed between the year 2010 and 2012 and treated by short course chemotherapy (DOTS). This is a retrospective study in which we reviewed the medical records of patients with extrapulmonary tuberculosis who were diagnosed between the year 2010 and 2012 in Sri Siddhartha medical college and who were treated under RNTCP. Treatment outcome was recorded as cured, completed treatment, defaulted, failed, or died based on the definitions given by the WHO. Cases of pulmonary TB were excluded from the study.

RESULTS AND DISCUSSION

Among 669 cases of extrapulmonary TB studied, 406 (60.6%) were males and 263 (39.4%) were females and most of the patients were in the age group of 21-40 years. Extrapulmonary TB was seen more common in males compared to females in other studies [7,8]. Mir Azam Khan reported equal number of cases in both sex [9]. The most common site of extrapulmonary tuberculosis was pleura followed by meninges and abdomen. The least common sites were hip joint, elbow joint, omental mass, skin TB and miliary TB. (Table 1) In a study conducted in south India, among extra pulmonary tuberculosis subjects, lymph node tuberculosis was most common followed by pleural tuberculosis, tuberculosis of abdomen, meninges, hip joint and skin [10].

ISSN: 0975-8585

Table 1: Site of extrapulmonary tuberculosis

Sl No	SITE OF EXTRAPULMONARY TUBERCULOSIS	NUMBER OF PATIENTS	PERCENTAGE (%)
1	Pleura	198	(29.5%)
2	Meninges	146	(21.9%)
3	Abdomen	128	(19.1%)
4	Lymph node	83	(12.4%)
5	Spine	37	(5.5%)
6	Tuberculoma	31	(4.6%)
7	Eye	09	(1.3%)
8	TB Osteomyelitis	09	(1.3%)
9	Knee joint	08	(1.1%)
10	Ileocaecal	05	(0.7%)
11	Hip joint	04	(0.5%)
12	Elbow joint	04	(0.5%)
13	Omental mass	03	(0.4%)
14	Skin TB	02	(0.2%)
15	Miliary TB	02	(0.2%)
TOTAL		**669**	**(100%)**

548 (82%) patients completed treatment, 53 (7.9%) patients were defaulters, 65 (9.7%) patients died and there was 03 (0.4%) case of treatment failure. (Table 2) Default rate was seen to be higher (34.5%) in a study by Chandir S, 59.8% patients had completed treatment, 5.2% were treatment failures and 0.5% patients had died during treatment [2]. Treatment failure was found to be less than 0.4% in other studies [11,12]. Among the 53 defaulters in our study, the most common reason for default was irregular treatment (29.6%) followed by alcohol abuse (23.2%). Chandrashekaran reported illiteracy, alcohol intake and smoking as the causes for default [13]. The study by Tekle reported that default was 11.3%, the reason being lack of family support, inadequate knowledge of treatment duration and side effects of medication [14].

Table 2: Treatment outcome of patients with extrapulmonary tuberculosis

TREATMENT OUTCOME	RESULTS (number of patients)	PERCENTAGE (%)
Treatment completed	548	(82%)
Defaulted	53	(7.9%)
Died	65	(9.7%)
Failure	03	(0.4%)
Total	**669**	**(100%)**

In our study, 25 (3.7%) patients were found to be reactive for HIV antibodies and the remaining 644 patients were nonreactive. In various other studies, seroprevalence varied from 0.4%- 10.9%. Among 25 HIV reactive patients, treatment was completed in 16 patients and the remaining 9 patients died during the course of treatment**.** In this study, 64% HIV reactive patients completed treatment which was low compared to the total number of patients who were treated under DOTS and who had completed treatment (82%). Only 9.7% of the total patients died during treatment, whereas a high number of patients who were HIV reactive died during treatment (36%) indicating that death rate was more in patients co infected with HIV.

CONCLUSION

This study conducted in Sri Siddhartha Medical College, Tumkur has given an idea of the treatment outcome of patients with extrapulmonary TB treated under DOTS and also the difference in outcome of treatment in HIV positive and negative patients infected with extrapulmonary TB. Coinfection with HIV was seen to have a bad outcome on patients with extapulmonary TB. 7.9% were defaulters, 9.7% died and there were 0.4% cases of treatment failure in patients treated under DOTS. The most common reason for default was irregular treatment, followed by alcohol abuse indicating an urgent need to take measures to check the irregularity of treatment and alcohol abuse in patients who are on treatment. Death rate was seen in a higher number of patients who were coinfected with HIV and hence more stress is needed to be laid down on the education of the community to protect themselves from the virus. Our study was carried out for three years and a continuous follow up of patients treated under DOTS has to be carried out in order to determine the changing pattern of treatment outcome.

ACKNOWLEDGEMENTS

We are thankful to Dr. Shivaprasad, Honorable chancellor of our institution for his constant support to carry out this work.

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