



A CROSS SECTIONAL STUDY TO ASSESS THE SOCIO-DEMOGRAPHIC PROFILE AND TREATMENT COMPLIANCE OF MDR-TB PATIENTS ATTENDING RNTCP OPD IN AN URBAN HEALTH CENTRE IN A METROPOLITAN CITY.

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ABSTRACT

Background: Drug resistant TB, in which the illness does not respond to at least one of the main TB drugs, is frequently encountered in India. It is necessary that vulnerable population is correctly identified and the determinants of spread and development of MDRTB in them is clearly understood.

Aim: To analyse the socio demographic profile of MDR TB patients attending Urban Health Centre, Malvani, Mumbai; Understand the factors behind development of MDRTB in them; Assess MDRTB treatment compliance.

Methodology: This was a health centre based cross sectional study, conducted in Drug Resistant TB patients undergoing Anti Tuberculosis Treatment at RNTCP OPD of urban health centre, Malvani, Mumbai. The total sample size was 64.

Results: Median age of the sample was 23, predominantly Muslims belonging to low socio economic classes. 76.5% cases were previously treated cases. Treatment compliance was good despite high(65%) rate of occurrence of side effects.

KEYWORDS : Drug Resistant TB, Socio Demographic Profile, Treatment Compliance.

Introduction.

Tuberculosis remains a worldwide health problem despite the microbe having been discovered more than a 100 years ago and it is estimated that 10.4 million people developed TB in the year 2016.¹

India, the country with highest number of TB cases, accounts for almost a quarter of the global TB burden, with incidence of 2.79 million cases in the year 2016.(1) . It is estimated that about 40% of Indian population is infected with TB bacteria, the vast majority of whom have latent rather than active TB. Besides the disease burden, TB also causes an enormous socio economic burden as it primarily affects people in their most productive years of life. It kills more women in the reproductive age group than all other causes of maternal mortality combined and it may create more orphans than any other infectious disease.²

First National Drug Resistance Survey results showed the rates of MDR among new TB patients to be 2.84% and that in previously treated to be 11.60 %³. The emergence and spread of Multi Drug Resistant, Extremely Drug Resistant and Totally Drug Resistant TB poses a serious threat to global health as they raise serious challenges regarding patient management especially in resource poor countries. Drug resistant TB, in which the illness do not respond to at least one of the main TB drugs, is frequently encountered in India. Higher cost of treatment and reduced treatment efficacy puts unaffordable financial strain on national tuberculosis control program.

In order to bring under control MDR TB prevalence, its necessary that vulnerable population is correctly identified and the determinants of spread and development of MDRTB in them clearly understood. This is an analytical study among MDR TB patients attending an Urban Health Centre in Mumbai, aimed at achieving the same.

Aim& Objectives.

To analyse the socio demographic profile of MDR TB patients attending Urban health centre, Malvani, Mumbai; Understand the factors behind development of MDR TB in them; Assess MDR TB treatment compliance.

Methodology

This was a health centre based cross sectional study, conducted in Drug Resistant TB patients undergoing Anti Tuberculosis Treatment at RNTCP OPD of urban health centre, Malvani, Mumbai. The study was conducted over a period of two months, from November 2016 to January 2017. All patients undergoing treatment at the OPD were included in the study. The total sample size was 64.

Necessary permission for the study was obtained from the Head of the institution and the treatment supervisor at the RNTCP O.P.D. Informed written consent was obtained from all of the study subjects. A pre validated interview schedule was prepared for the purpose of the study, based on existing literature and in consultation with experts in the field. Information regarding personal profile, MDR-TB suspect criteria, Drug resistance patterns and Compliance to MDR regimen was obtained from PMDT Cards. Information regarding. Housing conditions, personal habits etc. obtained through personal interviews conducted with the patients by the investigator. Data entry was done using excel 2010 software and analysis with SPSS 16 software.

Definitions.

MDR-TB case: A TB patient whose sputum is culture positive for Mycobacterium tuberculosis and is resistant in-vitro to isoniazid and rifampicin with or without resistance to other anti-tubercular drugs based on DST results from an RNTCP-certified Culture & DST Laboratory.⁴

XDR-TB case: A MDR TB case whose recovered M. tuberculosis isolate is resistant to at least isoniazid, rifampicin, a fluoroquinolone (ofloxacin, levofloxacin, or moxifloxacin) and a second-line injectable anti-TB drug (kanamycin, amikacin, or capreomycin) at an RNTCP-certified Culture & DST Laboratory⁴.

Results

Socio demographic profile.

Age of patients varied from 11 to 60, with a median age of 23 and mean age of 25.91, with a standard deviation of 10.42.

Table 1. Socio Demographic Profile.(n=64)

Variable	Distribution(percentage)
Gender	
Male	28(43.75%)
Female	36(56.25%)
Religion	
Muslim	50(78.22%)
Hindu	14(21.78%)
Occupation	
Student	19(29.7%)
Unemployed	30(46.9%)
Unskilled	15(23.4%)
socioeconomic Status	
Lower	31 (48.43%)
Upper Lower	28 (43.75%)
Upper Middle	5 (7.81%)

Table 2. Addictions.

	Alcohol	Smoking	Tobacco Chewing
Male	4(14.28%)	3(10.71%)	3(10.71%)
Female	0	0	6(16.66%)

Family size

Family size ranged from 5 to 8, with a mean family size of 5.66. Majority of families were nuclear or extended nuclear families.

Table 3. Housing characteristics.

Variable	Distribution(percentage)
Type of House	
Kaccha	47
Pukka	17
Ventilation	
Cross Ventilation present	9(67.5)
No cross ventilation	55(18)
Sunlight	
Adequate	24(82)
Inadequate.	40(7)
Overcrowding	
Present	74%
Absent	26%

MDR TB Suspect Criteria.

Majority of cases(n=49, 76.5%) were previously treated Pulmonary TB cases, who were sputum positive at diagnosis. 7(10.9%) were failures of new TB cases. There were two cases of HIV-TB co infection.

Drug resistance patterns.

A drug sensitivity testing was done in all cases of pulmonary tuberculosis, which was either GenXpert or CBNAAT. Rifampicin resistance was found in all 64 cases and 3 cases were diagnosed as Extremely Drug Resistant (XDR) tb.

Table 4. Side effects

Side Effect	Prevalence
None	21(32.8%)
Weakness	25(39.06%)
Body ache	6(9.3%)
Vomiting	5(7.8%)
Multiple Side Effects	7(10.9%)

Treatment compliance.

There was no interruption of regimen in the case of 61 patients. One patient had multiple interruptions, each less than 2 weeks in duration. Two patients had single interruptions of less than two weeks duration.

Three out of five under six children co residing with MDR Tb patients were not receiving INH prophylaxis.

Discussion.

Median age of MDR TB patients in the current study was 23, which points out the early age of incidence of the condition. Similar observations were made in a study by in a cross sectional study by Mukherjee et al at drug resistant tuberculosis centers of Kolkata.⁽⁵⁾

35% of male patients gave history of addictions including smoking, alcohol and tobacco chewing. Since these addictions can affect treatment outcome adversely, the number is alarming.

Close to 80% of patients were Muslims and more than 90% of patients belonged to lower and upper lower socioeconomic classes as per Kuppuswami classification. However, this was because the study center was located in an urban slum area populated largely by Muslims and it caters to a low socio economic class population.

Majority (76.5%) cases were previously treated patients compared to 35.6% reported in a study by Mukherjee et al(5). In a prospective study conducted by Sethi et al. in North India, major proportion of MDR-TB cases was due to treatment failure(6). This high rate of

relapse points to lack of compliance, drug resistance and the effect of addictions in treatment outcome.

65% of the patients reported one or the other side effects, most common one being weakness which was present in 32% patients. Other relatively less common side effects were body ache and vomiting, which was reported by 7-9% patients. 10% of patients reported multiple side effects.

In spite of the high occurrence of side effects compliance to current treatment regimen was good, with 61 out of the total 64 patients reporting no interruptions in treatment. In the case of all three patients with history of interruptions, duration of interruption was less than two weeks.

CONCLUSIONS.

The current study suggests that age group of 20-25 is particularly vulnerable to the development of MDR TB. Majority of MDR TB patients are relapse cases of old pulmonary TB. A high prevalence of addiction was found in the study sample. Side effects were frequent, weakness and body ache being the most common. Compliance to treatment regimen was good, with only 3 patients out of 64 having history of interruption of treatment.

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