IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 1 Ser.17 (January. 2022), PP 01-06
www.iosrjournals.org

A Prospective Study In Challenges For Diagnosis Of MDR-TB Patients Admitted In MDR-TB Centre Of Ranchi Jharkhand

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Abstract:
Background: *Tuberculosis is known by several names such as kshya rog the white death, the great white plague, the robber of youth, the Captain of all these men of death, the graveyard cough, raja-yakshma, and the King's-Evil. In 2013, there was an estimated 480000 new cases of MDR-TB worldwide and approximately 210000 deaths from MDR-TB.So this Study was to Study The Challenges For Diagnosis Of MDR-TB Centre Patients Admitted In MDR-TB Centre Of Ranchi Jharkhand.* ***Materials and Methods*** *: It was a hospital based prospective study carried out from August 2016 to Nov.2018 on Multi drug resistant tuberculosis patients admitted in MDR-TB centre Itki Sanatorium Ranchi after approval from institutional ethics committee.****Results:*** *In our present Study persistent cough more than 2 weeks was present in 62 (96.9%), followed by fever coming in the evening daily 54 (84.4%), blood in sputum in 53 (82.8%), lethargy in 51 (79.7%), weight loss/emaciation in 50 (78.1%), headache in 39 (60.9%), night sweating in 37 (57.8%), shortness of breath in 20 (31.3%) and others in 2 (3.1%) patients. the mean value of taking ATT for tuberculosis was 2.13 ± 1.175 SD .Most of patients 28 (43.8%) had taken one time ATT followed by 18 (28.1%) two times ATT, 10 (15.6%) three times ATT, 6 (9.4%) four times ATT and 2(3.1%) five times ATT. , most of study subjects 18(45%) had gone to private practitioner due to the reasons for no loss of daily wages, 10 (25%) due to easy accessibility, and equal distribution 6 (15%) for Quick treatment and suitable timing and no problems for investigations. most of the patients 33 (51.6%) were motivated for DOTS by family members followed by ANM/AWW 8 (12.5%), mass media 7 (10.9%), self 6 (9.4%) and equally 2 (3.1%) by doctor, sahiya. , most of the patients 32 (50%) had no side effects and 32 (50%) had side effects in which nausea 18 (27.2%),vomiting 5 (7.8%), dizziness 3 (4.7%), less hearing and abdominal pain 2 (3.2%) followed by equal distribution 1 (1.6%) of vertigo, and Weakness.*
Conclusion: *. No tracing mechanism for patients were adapted by DOTS provider and TB Health workers results in poor adherence to DOTS therapy*

Key Words: *Challenges, Prospective, Multi Drug Resistant Tuberculosis.*

Date of Submission: 16-01-2022 Date of Acceptance: 31-01-2022

I. Introduction

Tuberculosis is known by several names such as kshya rog the white death, the great white plague, the robber of youth, the Captain of all these men of death, the graveyard cough, raja-yakshma, and the King's-Evil.[1] The first written account of tuberculosis is found in the Vedas. The most ancient of them all, RIG -VEDA, 1500 BC calls the disease Yaksma[2] By 1919 Calmette and Guerin showed the effectiveness of their vaccine in animals and called their vaccine Bacille Calmette-Guerin or BCG vaccine.[3]In the 1995s, the World health organization launched the Directly Observed Treatment, Short –Course (DOTS) Program as a control strategy for tuberculosis.[4] In 2013, there was an estimated 480000 new cases of MDR-TB worldwide and approximately 210000 deaths from MDR-TB[5]. During the year 2015, there were an estimated 10.4 million new (incident) tuberculosis cases worldwide of which 5.9 million (56%) were among men, 3.5 million (34%) among women and 1 million (10%) among children.The rate of decline in TB incidence remained at 1.5% from 2014 to 2015. This needs to accelerate to a 4-5 % annual decline by 2020 to reach the milestone of the END TB Strategy.[6] Tuberculosis has remained major global problem and is ninth leading cause of death worldwide and leading cause from single infectious agent.[7]Patients with MDR-TB required longer duration and costly treatment resulting social isolation , loss of employment, long term socioeconomic effects and experience higher mortality.[8]Adverse drug reactions on second line anti tuberculosis drugs and poor management of adverse drug

reactions led to irregular adherence of treatment, increasing risk of default and may lead to death and permanent morbidity.[9]Considering all socio-economic factors the present study was designed to socio-demographic profile of multi drug resistant tuberculosis patients getting admitted in MDR-TB Centre ITKI.So our Study was to determine the Challenges For Diagnosis Of MDR-TB Centre Patients Admitted In MDR-TB Centre Of Ranchi Jharkhand

II. Materials and Methods

Study Design: This was a Prospective study carried out from August 2016 to Nov 2018 after approval of Institutional Ethics Committee of RIMS,Ranchi .
Study location:.. The present study was carried out at ITKI Sanatorium situated in Ranchi district of Jharkhand.
Study duration: September 2017 to August 2018
Sample Size: Total no. of MDR-TB patients of Ranchi district getting admission for pre-treatment evaluation for MDR-TB between September 2017 to August 2018 were 73, Among 73 patients, 6 patients were of XDR-TB and 3 patients were non co-operative. So the final sample size came out to be 64.
Subjects & selection method: The study population was drawn from consecutive Sampling among MDR-TB Patients admitted at ITKI ,Sanatourium,Ranchi,Jharkhand
Inclusion Criteria: All MDR-TB patients of Ranchi district transferred to ITKI Sanatorium through government health facility channels were included in our study after proper informed consent
Exclusion Criteria: While extremely Drug resistant patients and who are not willing to participate were excluded**.**

Procedure methodology

After written informed consent was obtained, a pre tested Semi Structured questionnaire was used to collect the data of the recruited patients. All the patients were interviewed in ITKI Sanatorium Ranchi using pretested Semi structured Questionnaire. The subjects were explained about the purpose of stud and data was collected after taking informed consent from each of the study subjects.A standard template was created in Microsoft-Excel sheet for data entry. Data entry was done and 10% of data were randomly checked to assure the quality of data entry under the supervision of Guide. The data were analyzed by using software- Statistical Package for Social Science (SPSS) 20.0 version.

III. Results

Table 1. Distribution of study subjects according to history of previous tuberculosis before being admitted in study centre (n=64)

Any history of previous TB	Frequency	Percentage (%)
Present	64	100
Absent	0	0
Total	64	100

In my study most of the patients 64 (87.5%) had the history of previous TB and were not taking treatment for tuberculosis regularly .

Table 2 :Distribution of study subjects according to various symptoms (n=64)

Symptoms	Responses	Frequency	Percentage (%)
Persistent cough more than 2 weeks	Yes	62	96.9
	No	2	3.1
Fever coming in the evening daily	Yes	54	84.4
	No	10	15.6
Night sweating	Yes	37	57.8
	No	27	42.2
Shortness of breath	Yes	20	31.3
	No	44	68.8
Chest pain	Yes	31	48.4
	No	33	51.6
Weight loss/emaciation	Yes	50	78.1

	No	14	21.9
Blood in sputum	Yes	53	82.8
	No	11	17.2
lethargy	Yes	51	79.7
	No	13	20.3
Headache	Yes	39	60.9
	No	25	39.1
Others if any	Yes	2	3.1
	No	62	96.9

In my study subjects, symptom persistent cough more than 2 weeks was present in 62 (96.9%), followed by fever coming in the evening daily 54 (84.4%), blood in sputum in 53 (82.8%), lethargy in 51 (79.7%), weight loss/emaciation in 50 (78.1%), headache in 39 (60.9%), night sweating in 37 (57.8%), shortness of breath in 20 (31.3%) and others in 2 (3.1%) patients.

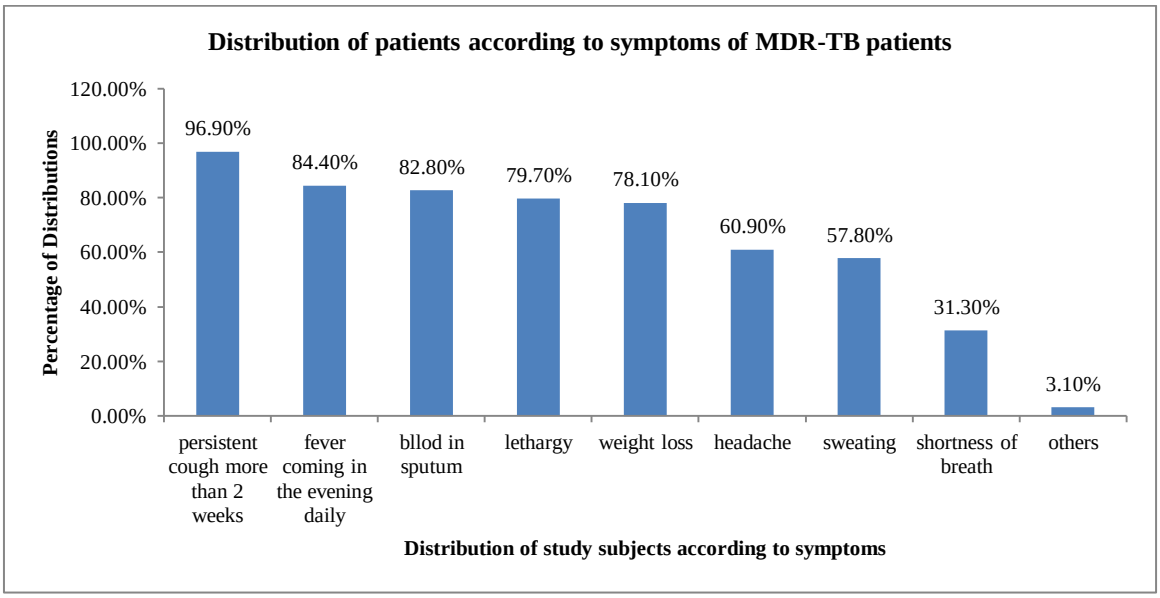

Figure 1 showing distribution of patients according to symptoms

Table 3: Distribution according to no. of times taking treatment for tuberculosis (ATT) previously (n=64)

Number of times taken ATT for TB	Frequency	Percentage (%)
ONE TIME	28	43.8
TWO TIMES	10	15.6
THREE TIMES	18	28.1
FOUR TIMES	6	9.4
FIVE TIMES	2	3.1
Total	64	100

In above table the mean value of taking ATT for tuberculosis was 2.13 ± 1.175 SD.Most of patients 28 (43.8%) had taken one time ATT followed by 18 (28.1%) two times ATT, 10 (15.6%) three times ATT, 6 (9.4%) four times ATT and 2(3.1%) five times ATT.

Table 4: Distribution of my study subjects according to no. of times taking treatment for tuberculosis previously (n=64)

Number of times taken ATT for TB	Frequency	Percentage (%)
ONE TIME	28	43.8
TWO TIMES	10	15.6
THREE TIMES	18	28.1
FOUR TIMES	6	9.4
FIVE TIMES	2	3.1
Total	64	100

In above table the mean value of taking ATT for tuberculosis was 2.13 ± 1.175 SD.Most of patients 28 (43.8%) had taken one time ATT followed by 18 (28.1%) two times ATT, 10 (15.6%) three times ATT, 6 (9.4%) four times ATT and 2(3.1%) five times ATT.

Table 5 Distribution according to types of tests before starting ATT in study centre for TB (N=64)

TYPES OF TESTS	Responses	Frequency	Percentage (%)
Sputum smear for AFB	Yes	41	64.1
	No	23	35.9
Blood tests	Yes	62	96.9
	No	2	3.1
CXR (PA view)	Yes	64	100
	No	0	0

In our Present study all patients 64 (100%) had CXR (PA), followed by blood tests 62 (96.9%) and sputum smear for AFB 41 (64.1%).

Table 6 : Distribution of study subjects according to types of tuberculosis before being admitted in study centre (n=64)

Types of TB	Frequency	Percentage (%)
Sputum positive pulmonary tuberculosis	57	89.1
Sputum negative pulmonary tuberculosis	6	9.4
Extra pulmonary tuberculosis	1	1.6
Total	64	100

In my study most of the patients 57 (89.1%) had the history of sputum positive pulmonary tuberculosis followed by 6 (9.4%) sputum negative pulmonary tuberculosis and 1 (1.6%) extra pulmonary tuberculosis.

Table 7 : Showing the reasons for Consultation to private practitioner (N=40)

Reasons	Frequency	Percentage (%)
No loss of daily wages	18	45
Easy accessibility	10	25
Quick treatment and suitable timing	6	15
No problems for investigations	6	15
Total	40	100

In study subjects, most of study subjects 18(45%) had gone to private practitioner due to the reasons for no loss of daily wages, 10 (25%) due to easy accessibility, and equal distribution 6 (15%) for Quick treatment and suitable timing and no problems for investigations.

Table 8 : Table showing Knowledge about DOTS among patients (N=64)

Knowledge about DOTS	Frequency	Percentage (%)
YES	29	45.3
NO	35	54.7
Total	64	100

In my study most of the patients 35 (54.7%) were unaware about the knowledge of DOTS therapy and persons 29 (45.3%) had the knowledge about the DOTS therapy.

IV. Discussion

Most of patients 35 (54.7%) did not know about DOTS therapy, 42 (65.65%) were not counselled by any health worker before taking ATT drugs, 31.3 % DOTS providers were family members, 39 (60.9%) cases had the history of missing doses in which 53.85% cases in continuation phase,34.4% cases had no history of follow up visits.A study done by Maharaj,et al[10] 25% people were not aware about MDR-TB, 14.7% people had the history of missing doses.In present study the mean value (±SD) of taking ATT before starting treatment for MDR-TB were 2.13 (±1.17) .Similar to study done by by Maharaj,J, Ross A, Maharaj NR,Campbell L,[11] in which mean number of ATT taken before start of category IV was 2.85.However no significant difference was found between education of the patient and regularity of treatment.Most of the study subjects 23 (35.9%) were defaulters who withdrew treatment due to no improvement in their symptoms (52%) followed by 19(29.7%) were completed category,10 (15.6%) were failure and 8 (12.5%) were new cases.A study done by Thuy Thi Thanh Hoang, Nhung Viet[12]Nguyen BMC public health 2015 34.3 % were defaulters, 46.6% were relapsed and 31.7 % were others. In present study, most of the study subjects 33 (51.6%) were getting reports of CB-NAAT test on alternate day, 35 (54.7%) study subjects were not taking preventive measures during coughing/sneezing, none of them had medical insurance, and 58(90.6%) study subjects had no knowledge about MDR-TB. None of them got reimbursement for travelling to pre-evaluation centre Itki sanatorium. Most of the study subjects 48 (75%) were unaware about the NIKSHAY Poshan yojana for supporting nutritional support to all MDR-TB patients.

V. Conclusion

It was found that, all the study subjects had the history of previous Tuberculosis and had taken ATT (mean value of frequency of ATT: 2.13±1.17).96.9% of total study subjects had symptoms of persistent cough for more than two weeks, 84.4% complained about occurrence of fever daily in the evening and 82.8% had been found with blood in sputum.Only 64.1% of total study subjects underwent investigation for Sputum Smear for AFB, before starting ATT for the first time.The Lab reports were not produced timely.It was found that 62.5% of total study subjects had gone to private practitioners for the treatment, instead of Government Health Centres. This might be because of easy access to private practitioner and also suitable timings without disturbing his/her daily wage.Among study subjects, 54.7% were unknown to DOTS treatment. This indicates that still IEC initiatives by Government is not reaching till end people..67.2% of study subjects were not counselled before taking DOTS, which indicates improper Health Care Delivery Systems .60.9% of study subjects had been found with missing doses of ATT which indicates poor counselling by Health Personnel. No tracing mechanism for patients were adapted by DOTS provider and TB Health visitor.53.85% of subjects had been found with missing doses in continuation phase, which again illustrates lack of counselling and poor adherence to DOTS therapy.There were no home visits/ follow-ups for 78.1% of study subjects by any Health personnel other than DOTS provider.54.7% study cases were found to be in Re-treatment category of presumptive MDR-TB cases.For 96.9 % of confirmed MDR-TB subjects, it was found that their respective Household contacts were not been screened with CB-NAAT test. Screening of such Household contact is very compulsory as to prevent ongoing transmission of the disease.54.7% of study subjects were found to be not taking any preventive measures while coughing/sneezing which indicates lack of awareness by patient.90.6% of study subjects were found to have “No Knowledge” about MDR-TB and its adverse effects.

Acknowledgements:

Authors would like to thank all faculty members and residents of Department of community medicine RIMS Ranchi to support.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval and Declaration of consent: Ethical approval for the study was obtained from Institutional Ethics Committee of RIMS, Ranchi. Interview with study subjects were conducted after written informed consent in Hindi language.

References

[1]. Shah A, Rodrigues C. The expanding canvas of rapid molecular tests in detection of tuberculosis and drug resistance.Astrocyte [serial online] 217 [cited2018 Nov 23]:4:34-44.
[2]. ZYSK, Kenneth G. Medicine in Veda :Religious Healing in the Veda.New Delhi :Motilal Banarsidas. 1998
[3]. Minion J, Zwerling A, Pai M. Diagnostics for tuberculosis: What new knowledge did we gain through The International Journal of Tuberculosis and Lung Disease in 2008? Int J Tuber Lung Dis 2009;13:691-7
[4]. World Health Organization. Molecular Line Probe Assays for Rapid Screening of Patients at Risk of Multidrug-Resistant Tuberculosis. Policy Statement. Geneva, Switzerland: WHO Press; 2008
[5]. World Health Organization. Companion handbook to the WHO guidelines for the programmatic management of drug-resistant tuberculosis. Geneva, Switzerland: WHO press; 2014.
[6]. WHO (2016) Global tuberculosis report 2016
[7]. World Health Organization, Global TB Report 2017.Available www.who.Int/tb/publication/global_report2017/en/index.html.accessed on 19 jan 2022
[8]. Morris MD,Quenza L,Bhat P,Moser K,Smith J,Perez H,et al.Social economic and psychological impacts of MDR-TB treatment.Int J Tuberculosis Lung Dis.2013;17(7):954-60
[9]. Central TB Division (CTD), Director General of Health Services, Ministry of Health and Family Welfare,Government of India,Programattic management of Drug Resistant TB(PMDT) guidelines 2017.CTD,New Delhi.
[10]. Multidrug-Resistant Tuberculosis Recommendations for Reducing Risk during Travel for Healthcare and Humanitarian Work Barbara J. Seaworth1 , Lisa Y. Armitige1 , Naomi E. Aronson2 , Daniel F. Hoft3 , Michael E. Fleenor4 , Adrian F. Gardner5 , Drew A. Harris6 , Rachel L. Stricof7 , Edward A. Nardel l8 ; for the Advisory Council for the Elimination of Tuberculosis.
[11]. Multidrug-Resistant Tuberculosis Recommendations for Reducing Risk during Travel for Healthcare and Humanitarian Work Barbara J. Seaworth1 , Lisa Y. Armitige1 , Naomi E. Aronson2 , Daniel F. Hoft3 , Michael E. Fleenor4 , Adrian F. Gardner5 , Drew A. Harris6 , Rachel L. Stricof7 , Edward A. Nardel l8 ; for the Advisory Council for the Elimination of Tuberculosis.
[12]. Maharaj,J, Ross A, Maharaj NR,Campbell L,(multi drug resistant tuberculosis in Kwazulu-Natal,South Africa :An overview of patients reported knowledge and attitudes.AfrjprmHealthcarefam.med.2016;8(1),a1089.http://dx.doi.org/10.4102/phcfm.v8i11089.

Dr.Ashutosh kumar, et. al. "A Prospective Study In Challenges For Diagnosis Of MDR-TB Patients Admitted In MDR-TB Centre Of Ranchi Jharkhand". *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(01), 2022, pp. 01-06.