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A STUDY ON PERCEPTION OF HEALTH OUTCOMES IN MULTI DRUG RESISTANT TUBERCULOSIS PATIENT (MDR-TB) WITH SPECIAL REFERENCE TO ICMR-TB IN CHENNAI

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Abstract

Multi Drug Resistant TB (MDR-TB) The emergence of strains Mycobacterium tuberculosis that are resistant to antimicrobial agents is a worldwide problem. MDR-TB, defined as resistance to at least Isoniazid and Rifampicin, two of the most potent anti TB drugs, is a reflection of poor management of TB cases. Drug resistance develops either due to infection with a resistant strain, or as a result of inadequate treatment such as when a patient is exposed to a single drug, or because of selective drug intake, poor compliance, use of inappropriate non-standardised treatment regimens, irregular drug supply, poor drug quality, or rarely erratic absorption of medications.

Keywords: Health Outcomes, Drug Resistant, Tuberculosis.

Introduction

Multi Drug Resistant TB (MDR-TB) The emergence of strains Mycobacterium tuberculosis that are resistant to antimicrobial agents is a worldwide problem. MDR-TB, defined as resistance to at least Isoniazid and Rifampicin, two of the most potent anti TB drugs, is a reflection of poor management of TB cases. Drug resistance develops either due to infection with a resistant strain, or as a result of inadequate treatment such as when a patient is exposed to a single drug, or because of selective drug intake, poor compliance, use of inappropriate non-standardised treatment regimens, irregular drug supply, poor drug quality, or rarely erratic absorption of medications.

MDR-TB is posing a potential threat to tuberculosis control in the country. Continuous

monitoring of drug resistance trends is essential in order to assess current interventions and their impact on the TB epidemic. Though drug resistance against Isoniazid and Rifampicin has been frequently reported in India, the available information is hospital-based, using non-standardized methodology and may not have used quality controlled laboratories for drug susceptibility testing. A series of representative drug resistance surveillance studies are being undertaken in selected states in accordance with the WHO global surveillance of drug resistance project. Data from these surveys will provide more valid estimates of the occurrence of MDR-TB and allow for monitoring of the trends in drug resistance levels.

Epidemiology

As per the estimates from the State representative drug resistance surveillance

(DRS) survey in Gujarat and various district level DRS studies, the prevalence of MDR-TB in new smear positive pulmonary TB (PTB) cases is $\leq 3\%$ and 12 to 17% amongst smear positive previously treated PTB cases. Review of studies with representative samples do not indicate any increase in India of the prevalence of drug resistance over the years. Although isolated reports, both published and unpublished, indicate the existence of XDR-TB in the country, it is not possible as yet to estimate its magnitude and distribution from the available data.

Prevention of MDR-TB and XDR-TB

The use of inadequate regimens and the absence, or inappropriate application, of directly observed treatment can lead to the development of drug resistance and potentially to an increase in drug resistance levels amongst the community. The implementation of a good quality DOTS programme will prevent the emergence of MDR and XDR-TB in the community. Therefore the highest priority is to further improve the quality and reach of DOTS services in the country. For this, all health care providers managing TB patients need to be linked to RNTCP and operational challenges in implementing DOTS needs to be addressed. The proportion of TB patients being treated outside the DOTS strategy needs to be minimized. The International Standards of TB Care need to be used by RNTCP and professional medical associations as a tool to improve TB care in the country. The fluoroquinolone group of drugs are not as yet recognized, nor recommended, as first line anti-TB drugs, and their use should be restricted only to the treatment of confirmed MDR-TB cases.

Magnitude of Problem

Global: First information on global magnitude of MDR-TB came in 1997, when WHO – IUATLD reviewed 63 surveys, and reported that range of primary MDR-TB varied from 0-10.8% and acquired MDR-TB varied from 0-48% in various studies². In most regions of the world; the rate of MDR-TB was very low and varied considerably throughout the world, which was due to difference in degree of patients studied, the degree of misuse of drugs, the quality of enquiry regarding previous treatment and inadequate culture and drug susceptibility facilities in many parts of the world. Considering the limitations of previous

studies, a WHO – IUATLD global project on anti-tubercular drug resistance surveillance spread over 35 countries in 5 continents was carried out during 1994-97³, which reported the median prevalence of primary and acquired MDRTB as 1.4% and 13% respectively. In this project, regions with prevalence of MDR-TB greater than 5% were labeled as MDR hotspots.

Subsequent second report of this global project⁴ conducted from 1996-99, reported the median prevalence of primary and acquired MDR-TB as 1% and 9% respectively. Most of the previous hotspots were confirmed again, while new areas in Russia and China were added. The analysis trend has confirmed that MDR-TB is not a major problem in countries implementing tuberculosis control according to international guidelines for several years. Countries like Botswana, Chile, Cuba, Czech Republic and Uruguay have shown very low prevalence of MDR-TB, confirming that efficient tuberculosis control prevents the development and spread of MDR-TB. The third global surveillance of WHO – IUATLD, carried out in 1999-2002, reported median prevalence of primary and acquired MDR-TB as 1.1% (0-14%) and 7% (0-58.3%) respectively⁵. After analysis, the cut-off value for hotspots was reset to 6.5% in this new report⁵.

India: Clinical perception and several isolated reports indicated the development of drug resistance in India, since the beginning of chemotherapeutic era, but they failed to give an idea of national situation as a whole. Pioneering step in this direction was taken by Indian Council of Medical Research (ICMR) in 1965-67 when it conducted two surveys to estimate the prevalence of drug resistance^{6, 7}. Several studies conducted subsequently in different parts of country, revealed that the total prevalence of primary / initial MDR-TB varies from 0-5%⁸⁻¹⁹. The rate of acquired MDR-TB varies from 6 to 60%^{3, 9, 14, 19-23}. The median prevalence of primary and acquired MDR-TB in India according to WHO-IUATLD report on global drug resistant surveillance, conducted “Between” 1996-99 is 3.4% and 25% respectively⁴. Despite the variable results of acquired MDR-TB, the message is very clear that it is not in isolated pockets, but in the country as a whole

The magnitude of the MDR-TB problem in India is difficult to estimate. The

different reports from across the country are not comparable because the protocol for the studies were neither standardized nor were the laboratories having quality assured culture sensitivity. However, the data from studies conducted by TRC Chennai and NTI Banagalore are indicative of a primary drug resistant level of 1.7 – 2.2% and acquired drug resistance of 12 to 13%. The drug resistance trends from 1999 to 2003 in a rural area implementing RNTCP were conducted by TRC and have shown the problem to be more or less constant during this period. HIV-TB patients have slightly higher levels of MDR compared to the other patients as shown by TRC studies. In order to have a countrywide picture of the problem, drug resistance surveillance was carried out in accordance with protocols from IUATLD and WHO by TRC Chennai and NTI Banagalore in 9 different districts. This study concluded that MDR-TB problem among new cases was 0.5 to 3% and among re-treatment cases was about 12%.

Even though, the rates of MDR-TB are low but in absolute terms number of patients is high and these existing cases would have the potential to transmit the disease. Moreover, the problem is expected to increase because of poor treatment practices especially among the private sector which at present is having only minimal coordination with the RNTCP and the ready availability of anti-TB drugs over the counter which promotes wishful treatment. Moreover, in the absence of a National MDR-TB management policy large number of such patients would continue to transmit drug resistant TB. The problem would be compounded by those patients who are failing on DOTS especially in situations where DOTS implementation is still lacking and in difficult areas where the programme is not meeting the desired targets of case finding and cures. It is also observed that patients on Cat – II treatment have poorer success rates, high deaths and defaulters. This would again add to the increase of MDR-TB. In view of this, the Government of India has now taken initiatives to combat the problem by establishing a National DOTS Plus Committee seeking international technical support and developing National DOTS plus guidelines.

Need for the study

Human beings are affected by natural disease and disaster in their life. Especially

people those who are having less immunization power they can get TB. So the researcher wanted to find that how the multi drug resistance tuberculosis patients feel there are well in their health.

Statement of the Problem

Tb is a major health problem in certain specific immigrant community. The high risk of TB in AIDS patients extends to those infected by human immuno deficiency viruses (HIV) that have not yet developed clinical signs of AIDS. Alcoholics and intravenous drug abuse are also at increase risk of contracting tuberculosis unit the economic and social factor that influence the spread of tuberculosis infection are remedial. There is no real possibility of completely eliminating the disease.

Importance of the study

All are human being, all are equal in the world, and there is no discrimination in the name of sex, religion, caste, rich or poor, upper class and lower class. Every human being is unique in the world. People have their own norms, values, custome, traction and culture. India being a developing country has providing medical facility for patients.

Objectives of the study

- To find out the respondents personal history.
- To find out travel distance for each attendances of the respondents.
- To identify medical treatment of the respondents.
- To find out reaction toward diagnosis of the respondents.
- To find out the present health condition of the respondents.

Definition of the Terms

Perception: According to Oxford Dictionary Perception means “An interpretation or impression based on one understands of something”.

Patients: According to Oxford Dictionary Patients Perception means “A person receiving or registered to receive medical treatment”.

Health: According to World Health Organization (1946)” health is a state of complete physical, mental and social well being is not merely absence of disease or infirmity”.

According to Oxford Dictionary “health is the state of being well is body or mind”, “Health is a person’s mental or physical condition”.

Multi-drug resistant Tuberculosis: Multi-drug resistant tuberculosis is defined as disease due to tuberculosis that is resistant to Isoniazid (H) and Rifampicin (R), with or without resistance to other drugs.

Primary drug resistance: Primary drug resistance is defined as drug resistance in a patient who has not received any anti-tubercular treatment in the past, while acquired drug resistance is defined as resistance that develops in a patient who has received prior chemotherapy. Recently the terms “resistance in new cases” and “resistance in previously treated cases,” have been proposed for use because of the difficulty to confirm the validity of the patients’ past history of treatment. When one is not sure whether the resistance is primary or acquired or unaware of patient’s previous treatment, drug resistance is known as initial drug resistance.

Resistance: According to Oxford Dictionary Resistance Means, “A property of some bacteria that have been exposed to a particular antibiotic and have “learned” how to survive in its presence”.

Drug: According to Oxford Dictionary Drug means, the most widely used drug is medicines, taken for the prevention, treatment, or diagnosis of illness. Medically drug can be taken in many forms. They are most commonly administered through ingestion, but can also be injected into a muscle, a vein, or under skin. Inhalers deliver a drug through the nose or mouth.

Tuberculosis: According to Encyclopedia of Medicine, “Tuberculosis (TB) is a potentially fatal contagious disease that can affect almost any part of the body but is mainly an infection of the lungs. It is caused by a bacterial microorganism, the tuberculosis bacillus or mycobacterium tuberculosis”.

Field of study

The researcher has done the study at Tuberculosis Research (TR), formally known as Tuberculosis Chemotherapy Center is a permanent research institute of the Indira Gandhi Medical College and Research Institution (IGMC&RI), Medical college under the Ministry of Health and Family Welfare, Government of India, It was established in 1995 jointly by the ICMR, World Health Organization(WHO), the government of Tamil Nadu, the British Medical Research Council (BMRC) and the United States Public Health Service (USPHS) to determine the feasibility,

efficacy and safety of domiciliary chemotherapy for sputum positive pulmonary tuberculosis patients. TRC famous Madras study demonstrated that TB patients could be safely treated at home and revolutionized the management of this disease in India and all over the world. The researcher hence selected this place for his study.

Research design

The research has adopted descriptive design for this study. In this study the researcher describes perception of health in MDR TB patients.

Sampling

The researcher collected data from 30 respondents. The researcher mainly focused on patients those who are taking MDR TB treatment in the hospital. The researcher used a self prepared interview scheduled, so as to gain much information through interview. The sampling method used by the researcher is Non Random convenient sampling method.

Definition of convenient sampling,

Convenience sampling is used in exploratory research where the researcher is interested in getting an inexpensive approximation of the truth. As the name implies, the sample is selected because they are convenient. This nonprobability method is often used during preliminary research efforts to get a gross estimate of the results, without incurring the cost or time required to select a random sample. A convenience sample results when the more convenient elementary units are chosen from a population for observation.

Source of data

The researcher obtained primary source of data from the respondents and secondary data was collected from journals, government publication, previous research, WHO report, web site and information from the field.

Tools of data collection

With the guidance of experts in the field, with the various reference and interaction with experts the researcher prepared an interview scheduled based on the objective of the study to collect the required information from the respondents. The researcher was able to get first hand information from the respondents themselves. The interview schedule consisted of 46 close ended questions regarding the various aspects of the demographic, travel detail, treatment detail,

MDR TB detail, and present health status of MDR TB patients.

Preparation of tools

The researcher prepared the tools by having discussion with medical social worker of Tuberculosis Research Center and the research guide. Secondary sources of information collected from the books, magazines, journal, WHO report, article, web side and pervious research helped the researcher formulate the tools. The interview schedule was used as the tool for collecting primary data for the study.

Pre-testing

The interview schedule was pre-tested for validity and reliability on 5 respondents. After pre-testing the researcher found the entire questions were apt for the study and the respondents also were able to answer all the questions. So the same tool was used for further data collection.

Period of data collection

The researcher collected the data “between” 1st October to 30th December 2018. The average time spend by the researcher to collect data was 10 to 15 minutes per respondent.

Demographic Profile of the Respondents

Sex	F	%
Male	19	63
Female	11	37
Age groups	F	%
20 to 30 years	12	40
30 to 40 years	06	20
40 to 50 years	09	30
Above 50 years	03	10
Marital Status	F	%
Married	09	30
Unmarried	21	70
Educational status	F	%
Primary School	06	20
Higher School	09	30
Higher Secondary School	12	40
UG/PG	03	10
Family types	F	%
Joint Family	07	23
Nuclear Family	23	77
Employment Status	F	%
Yes	12	40
No	18	60
Income Per Month	F	%
Rs.2000 to 3000	09	30
Rs.3000 to 4000	12	40

Rs.4000 to 5000	06	20
Above Rs. 5000	03	10

Distance from TRC to Home

Distance	F	%
10 to 20 Km	06	20
20 to 30 Km	12	40
30 to 40 Km	03	10
40 to 50 Km	09	30
Types of Transports	F	%
Bus	24	80
Train	06	20
Amount Paid	F	%
10 to 30	09	30
30 to 60	06	20
60 to 90	15	50
Smoking habit	F	%
Yes	21	70
No	09	30
Alcohol consumption	F	%
Yes	24	80
No	06	20
Preference given for initial symptoms	F	%
Govt. Hospital	22	73
Private Hospital	08	27
Initial diagnosis of TB	F	%
Govt. Hospital	21	70
Private Hospital	09	30
Previous treatment	F	%
Yes	27	90
No	03	10

Investigation done for Diagnosis of TB

Investigation	F	%
Sputum	2	7
X-Ray, Sputum	5	16
X- Ray, Sputum, and Blood	17	57
X-Ray, Sputum, Blood, and Scan	3	10
X-Ray, Blood	3	10
Total	30	100

Present Health Condition of Respondents

share the diagnosis to someone else	F	%
Yes	27	97
No	03	10
Symptom	F	%
Cough	09	20
Fever	12	30
Lack of Appetite	06	20
Loss o f Weight	03	10
Did you face any problem in attending in Treatment	F	%

Yes	06	20
No	24	80
Did you feel you are cured of TB	F	%
Yes	27	90
No	03	10

Findings

1. The majority (40%) of the respondents are between in the age group of 20 – 30 years. In these group respondents all are married. If the patients should not take treatment regularly disease can be spread to other person in their family, because TB is an air born disease.
2. The majority (77%) of the respondents are belonging to nuclear family system. In nuclear family system support method for the patients is less.
3. The majority (60%) of the respondents are does in work, because due to their sickness, they not able to play normal life.
4. The majority (60%) of the respondent depending on other person in their family. The monthly income of the respondents is rupees 3000 – 4000 per month.
5. Sample size for this study (30), here (19) of the respondents are male, (11) of them female. Almost all male respondents are having personal habit of smoking and alcoholic consumption.
6. The majority (73%) of the respondents were gone to Government Hospital for initial symptoms of TB. TB treatment providing in all Government Hospital free of cost, the services could be quality. Ever new case of TB registered in Government Hospital based on that services providing to patients.
7. The majority of the respondents are diagnosis his/ her diagnosis at Government Hospital during their initial periods.
8. The researcher founded that the patients had pervious treatment. In this case were (90%) of the respondents had treatment at Government Hospital, Rest of the respondents are had treatment at Private Hospital and clinics.
9. The majority (90%) of the respondents had taken Cat I and Cat II treatments. Period for Cat I is six month, Cat II is eight months. Majority of the respondents has taken more then two month treatment, where (10%) of the respondents are taken less then one month treatment. It shows that treatment

could be failure, disease may be relapse or disease may be resistance.

10. The initial status of diagnosis is positive, this status diagnosis of X- Ray, Sputum test, Blood test, and other test. Based on this test only TB cans diagnosis.
11. The majority (73%) of the respondents were worried about their initial reaction towards his/her diagnosis of TB. It takes almost month to overcome this problem.
12. The majority (97%) of the respondents were they are shared his/her diagnosis to someone else inn likewise husband, wife, son, daughter, friends, in-laws, and community members. It could be a reason of getting advice and support from them.
13. The majority (40%) of the respondent reported that most tripling symptoms now are cough and fever. It means that disease has been presenting to them. Otherwise disease may relapse to them.
14. Present reaction of the respondents is fear, anxiety, confusion and worry about their future life.
15. Almost all the respondents are regular for their MDR TB treatment, because if they are not regular in their treatment there is no other way for to treat TB patients.
16. The majority (87%) of the respondents, they are feel disease has been cured them. All the respondents said that a symptom has been disappeared, they can have normal appetite, and they can sleep well.
17. The majority (57%) of the respondents are keeping touch their investigation result with Doctor and Nurses in the hospital.

Suggestion and Conclusion

1. Health scheme for TB Patients:

Health scheme should provide through Government and Non Government Organization for welfare of TB towards their illness.

2. Free bus pass and Train pass:

The average income of the patients is rupees 3000 – 4000 per month. This income has been earned by other than patients. If the government provide free bus pass and train pass they can easy to accuse medical facilities. It could be one of the method were supported to the patients.

3. Employment opportunity:

In India one of the major problems is unemployment. People those who are affected by illness, naturally they did in go for their work, because health is not able to accept

working condition. Mean while patient go their work stigma will be their. Government should provide self employment opportunity for patients.

4. Counseling:

Counseling is one of the methods where we can understand patient's real problem. More counseling can make person change themselves. Practionar should give counseling to family member, those who are living with patient, because it could be one of the methods where to prevent transmit ion of disease as well as get support to them.

5. Home visit:

Regular home visit must very important for the patient. Health practionar should to regular home visit to check up the patients in their home condition. Regular home visit can prevent irregular in their treatment.

6. Monthly check up:

Monthly check up can make them patient feel they are relief and cure in their disease. Monthly check up where practionar can check patient family member, whether history of disease in their family, based on that to prevent disease in family itself.

7. Awareness programme:

Awareness programme are very important for public member about the disease. Naturally stigma is presenting in the community. In public place like bus stand, train stop, park and other place where advertisement should can do. In the favor of film show, phamelats, and other material, one of the main objectives of awareness programme make people should aware of the disease.

8. Group therapy:

Bring all patients at one particular place, to contact group therapy for them. Among the patients itself, to share their feeling and problem which are facing in every day, based on their opinion some alternative solution can make them.

9. Nutritional support:

Nutritional supports are very important for the MDR TB patients. Patient in empty stomach providing tablets naturally is not work for the patient health condition. Government and Non Government organization should nutritional support for them.

10. Health care:

Mobile health care team could make regular weekly trip in the vulnerable community. To

find health status of the people based on that to prevent disease among them.

All human being are born from nature, it means Right to Equality. There is no discrimination in the name of sex, color, race and casts. All people should treated in equal, especially people those who are affected by illness to love them, to give charity and care them. The researcher concluded that MDR TB has facing lat of problem in their life; especially stigma is there in the society. Therefore the basic physical need psychological need like nutritional support, employment opportunity should provide to them through Government and Non Governmental Organization.

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