

Research Article

<http://dx.doi.org/10.21477/ijapsr.v2i3.8160>

Patient's Perception on MDR and XDR Tuberculosis in a Teaching Hospital.

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Article History:

Received: 2 May 2017
Accepted: 21 May 2017
Available online: 1 July 2017

Keywords: patient's perception;
multidrug resistant; tuberculosis;
treatment; prevention; control;

Abstract:

Tuberculosis (TB) is an infectious disease which is transmitted by air. This disease damages the lungs and other organs in the human body. It is still one of the leading causes of morbidity and mortality despite the fact that it can be cured with adequate treatment. The emergence of multidrug resistant tuberculosis (MDR-TB) or extensively drug resistant (XDR-TB) is one of the challenges in our effort to control the disease complications. The aim of the study was to assess the Patient's Perception on emergence of MDR & XDR-Tuberculosis in the Pulmonology Department of teaching Hospital

1. Introduction

TB is spread mainly through the air in the form of droplets, when infectious people cough, sneeze, talk, laugh or spit, droplets containing *Mycobacterium Tuberculosis* are sprayed into the air, people nearby may inhale the bacteria and become infected (E.M Streicher et al., 2012, WHO., 2010, S. Swaminathan et al., 2010). *Mycobacterium tuberculosis* can remain viable as air-borne droplet suspended in the air for a long time or as part of house dust for weeks. However, transmission usually occurs only after substantial exposure to someone with active TB (M. Klopper et al., 2013, G. D Vander spuy et al., 2003, S. Verver et al., 2004). A person can be infected by *Mycobacterium tuberculosis* for many years without getting sick or spreading the organism to other people. If the immune system is weakened by immunosuppressive disease like HIV infection, diabetes mellitus, malignancy, chronic kidney disease, extremes of ages, and immunosuppressive agent, latent TB infection can develop into active TB disease. If a person with active TB disease is left untreated, he or she will infect on the average between 10 to 15 people every year (I. Vitol et al., 2006, D. Calver et al., 2010).

Active or pulmonary tuberculosis (TB) can cause permanent lung damage when it is not diagnosed and treated early. Untreated active disease can also spread to other parts of the body where it can lead to serious or life-threatening complications. Late detection and improper treatment of this condition may lead to severe complications. These can range from mild to severe health

complications that might also lead to death (J. A Caminero et al., 2010). Few complications of the disease are meningitis, permanent lung damage, bone and joint complications, liver or kidney inflammation and cardiac problems (S.D. Lawn and R. Wilkinson., 2006).

All TB control programs were not successful due to the emergence of Multidrug resistance. Drug resistance in MDR-TB or XDR-TB is a man-made problem (V.G Kumar et al., 2011, S. Sethi et al., 2013, C. N Para Masiva et al., 2000, S. S Trivedi et al., 1988). Lack of awareness, incomplete or inappropriate treatment and poor quality of drugs have contributed to the present grim situation of TB management (J. Rawat et al., 2009, N.K Jain et al., 1992). If TB is detected early and properly treated using a combination of medicines for 6 to 9 months, the patients quickly become noninfectious and are eventually cured (M. Goyal et al., 1997). However, complication and treatment outcome of tuberculosis patients has not been assessed yet in India. Therefore this study aimed to assess the patient's perception on MDR & XDR tuberculosis and its complications (E.M Streicher et al., 2012, B. Muller et al., 2013).

2. Method

A hospital based cross-sectional survey study was conducted to assess TB related knowledge, its complications, and control. There were **46 months** studies which include **1006** patients from the in-patients & out-patient of Pulmonology department who have been

previously diagnosed for tuberculosis was selected for the study. The response of the subjects in the survey study was analyzed in order to assess their perception on emergence of MDR & XDR tuberculosis.

The study was carried out on patients of Department of Pulmonary Medicine, Owaisi Hospital and Research Center, Hyderabad, India.

2.1 Participants

For data collection, a structured questionnaire was developed through revision of the literature which contains two different parts i.e. patient's perception on TB disease and its complication and control. Data collection tool for the study also includes questions to assess patients general understanding about the TB disease, cause and transmission, consequence of stopping treatment and its duration, complication, prevention, socio-demographic factors like sex, age, educational level, housing area and health conditions and monthly earning among the participants.

3. Result

3.1 Knowledge about multidrug resistance tuberculosis

92% of total participants said that they don't know what are MDR & XDR-TB, whereas only 8% of population has

given positive response, they know treatment of MDR-TB. According to above statistical Analysis it indicates that the majority of population has no idea about Multidrug resistance tuberculosis.

3.2 Patient's response for positive MDR-TB treatment

According to statistical Analysis above data shows that, maximum patients do not complete their treatment after the conformation of positive Multidrug Resistance tuberculosis (MDR-TB). Whereas 42% of total participants took serious action once they get positive MDR-TB and also completed their medicinal regime.

3.3 TB patient counseling

This question was framed in order to justify the reason behind the poor knowledge and attitude of the patient towards TB. More than 64% of the patient had never received TB counseling, Whereas 25% of patient had previously been counseled on the disease knowledge and the remaining 11% were doubtful about their answer.

Table 1: Multidrug resistance tuberculosis (MDR-TB)

Response	Male (N= 744)		Female (N= 262)		Total Participants (N=1006)	
	Freq.	%	Freq.	%	Freq.	%
Yes	65	(9%)	18	(7%)	83	(8%)
No	476	(64%)	187	(71%)	663	(66%)
Unsure	203	(27%)	57	(22%)	260	(26%)

Table 2:Positive MDR-TB treatments

Response	Male (N= 744)		Female (N= 262)		Total Participants (N=1006)	
	Freq.	%	Freq.	%	Freq.	%
Yes	52	(7%)	23	(9%)	75	(7%)
No	98	(13%)	88	(33%)	186	(18%)
Unsure	594	(80%)	151	(57%)	745	(74%)

Table 3: TB patient counseling

Response	Male (N= 744)		Female (N= 262)		Total Participants (N=1006)	
	Freq.	%	Freq.	%	Freq.	%
Yes	492	(66%)	149	(57%)	641	(64%)
No	204	(27%)	51	(19%)	255	(25%)
Unsure	48	(7%)	62	(24%)	110	(11%)

4. Discussion

92% of total participants said that they don't know what are MDR-TB, whereas only 8% of population has given positive response, they know MDR-TB. Maximum patients do not complete their treatment after the conformation of positive Multidrug Resistance tuberculosis (MDR-TB) Table-1.

The two reasons why multidrug resistance continues to emerge and spread, are mismanagement of TB treatment and person-to-person transmission. Medicine treatment failure and failure to complete the entire course of treatment is the major cause of multidrug-resistant TB. If all the medicines prescribed are not taken as directed, the weaker bacteria are killed, but some stronger, more resistant bacteria survive. These resistant bacteria can grow and cause TB disease that is difficult to cure (D Calver et al., 2010).

More than 64% of the patient had never received TB counseling. Whereas 25% of patient had previously been

counseled on the disease knowledge and the remaining 11% were doubtful about their answer (Table 3).

During counseling patient need to be informed about TB, how the disease spreads, signs and symptoms, consequences of not following treatment guidelines, why treatment is long and why completion of treatment is critical, likely adverse event during therapy and cost involved in treatment and what free/public services are available to patients.

Patient need to be told that TB is a fully curable and treatable disease. We must use patient centered approached, and recognize that all patient deserve a minimum package of holistic TB care services that are not restricted to diagnosis and pharmacological treatment, but include counseling and support services as well.

According to the statistical review, it can be understood that about 50% of total participants (49% men and 51% of women) have a general idea that TB treatment might last for a shorter period, while 45%

of total participant believe it can last for a long period. The long time period is not well understood and as a result patients do not adhere to the treatment and discontinue it half way and this becomes the prime reason for the gap between the treatment and its adherence.

TB treatment fails because a patient doesn't take their TB drug correctly. However, there can be a number of different reasons for TB treatment failure. It is certainly true that if a patient doesn't take their TB drug treatment properly can lead to the development of drug resistant TB.

All patients should receive their daily TB drug under Direct Observation (DOTS). However, the standards say that the country program may consider usually three times a week dosing acceptable (S Sethi et al., 2013).

Both new and retreatment patients should be monitored by follow-up sputum microscopic/culture at the time of completion of the intensive phase of treatment and at the end of treatment.

5. Conclusion

Research effort is required to develop more effective tools and technologies for preventing, diagnosing and treating TB. Creating new drugs that would shorten and simplify the treatment process, effectively treat MDR-TB & XDR-TB, better address latent infections. Creating medical evidence to maximize uptake and appropriate use of new drugs, vaccines and diagnostics, as well as optimizing use of existing tools to improve TB control. Policies and procedures for TB control should be developed, reviewed, periodically, and evaluated for effectiveness to determine the actions necessary to minimize the risk for transmission of TB. Infection-control program should be designed to ensure that prompt detection of infected patients, airborne precaution and treatment of people who have been suspected can be done.

Conflict of interest

None declared

6. References

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How to cite this article:

FazluRehman, N. Ravindra, A. SrinivasaRao, AshfaqHasan, M.A Raoof (2017). Patient's perception on MDR and XDR tuberculosis in a teaching hospital.*Int J App Pharm Sci Res*. 2(3):64-68.<http://dx.doi.org/10.21477/ijapsr.v2i3.8160>.