

Performance of Revised National Tuberculosis Control Program (RNTCP) in Kurnool District Regarding Management of Multi-Drug Resistant Tuberculosis

P. Chakradhar¹, S. Anusha Rao¹, A. Sumanth¹, Moksheswarudu²

ABSTRACT

Introduction: Tuberculosis accounts for large number of deaths in developing countries including India. Present study was done to assess the performance of Revised National Tuberculosis Control Program (RNTCP) in Kurnool district regarding management of MDR tuberculosis.

Materials and method: Retrospective study was done on MDR TB patients of Kurnool dist., during 1st January 2011-31st December 2014. Data was collected from DTO, Kurnool. A patient who is an MDR suspect is referred to TB units. Culture and DST is done in RNTCP accredited laboratories. Confirmed case of MDR-TB is referred to state DOTS-PLUS site with DST results for initiation of category 4 treatment. Follow-up of the patient by smear and culture evaluation and clinical evaluation until the end of the treatment.

Result: Out of 4969 MDR TB suspects, 3310 patients were tested and was confirmed for MDRTB in 248 patients. Among them 220 were kept on treatment. 16 were not willing for treatment 8 died before starting treatment and 4 started private treatment. 51 were cured, 6 were treatment completed, 45 were defaulters, 7 were treatment failure. 27 died during treatment 1 was transferred out and 3 switched to XDR-TB. 80 are on treatment.

Conclusion: RNTCP though effective measures should be taken up for MDR TB management under DOTS-PLUS.

Keywords: RNTCP, MDR TB, XDR-TB

INTRODUCTION

Tuberculosis is the major cause of morbidity and mortality in India. India accounts for 1/5th of global T.B. incidence. According to WHO each year an estimated 9.4 million new cases of T.B. were detected leading to nearly 2 million deaths. In India, the number of T.B. patients are 1.96 million per year and among them 0.8 million are new smear positive cases, comprising of 75 new cases with sputum smear positivity per lakh annually with 0.33 million deaths per year. There is raising trends of drug resistant T.B. in different parts of world. India along with China contributes to more than 50% of global multi-drug resistant (MDR-TB) cases.¹⁻³ Frequency of MDR-TB is less than 3% in new cases and 12% to 17% among retreatment cases. An MDR-TB patient is one whose sputum culture is positive for mycobacterium tuberculosis that is resistant in vitro to isoniazid and rifampicin with or without resistance to other anti-tuberculosis drug. Under RNTCP, DOTS-PLUS was started in Kurnool district in year 2011. This study was done to assess the performance of RNTCP (Revised National Tuberculosis Control Program) programme in Kurnool district regarding management of MDR-TB.

MATERIAL AND METHODS

Retrospective study was done on MDR-TB patients included under RNTCP, Kurnool district between 1st January 2011 to 31st December 2014. Data was collected from District Tuberculosis Office, Kurnool district. All sputum smear positive cat-2 failures were referred to T.B units. Culture and drug sensitivity testing was done in RNTCP accredited laboratories. Confirmed cases were referred to DOTS-PLUS site with DST result for the initiation of CAT-4 treatment. Follow up of the patient by sputum smear and culture evaluation were done under RNTCP till the end of treatment. Monthly follow up of the patient for clinical assessment and sputum smear examination was done. Liver function tests, serum creatinine, blood urea and thyroid profile were carried out based on clinical assessment. Sputum specimens were collected in sterile wide mouthed bottle from sputum smear positive MDR-TB suspected patients. The collected specimens were processed by modified Petroff method. For each specimen two Lowenstein-Jensen (LJ) slopes were inoculated each with 5mm loop-full of centrifuged sediment, distributed over the surface. All cultures were incubated at 35-37 degree centigrade up to 8 hours. The test were done in biosafety class-2 cabinet

RESULTS

Between 1st January 2011 to 31st December 2014, 4969 patients MDR-TB was suspected and 3310(66%) patients were tested for MDR-TB by sputum culture and sensitivity for mycobacterium tuberculosis. Out of 3310 patients 248(7.49%) patients were diagnosed as having MDR-TB. In this 248 patients, 220 (88.70%) were kept on treatment, 16(6.45%) patients were not willing for treatment, 8(3.22%) died before starting treatment, 4(1.61%) patients started private regimen. By 31st December 2014, 51 were cured, 45 patients defaulted, 7 patients were treatment failure, 27 patients died during treatment, 1 was transferred out, 3 switched to XDR-TB and 80 patients are on treatment.

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Patients tested for MDRTB	Patients confirmed for MDRTB	Patients kept on treatment	Cure rate	Treatment completed	Defaulter	Died during treatment
3310	248	220	51 (23.18)	6	45 (20.45%)	27

Table-1: Results of the study

	NO. OF CASES REGISTERED & INITIATED ON CAT-4 DRUGS	CASES CURED	TREATMENT COMPLETED CASES	DEFAULTERS	TREATMENT FAILURE	DIED
INDIA	2530	975 (38.54%)	239 (9.44%)	452 (17.86%)	161 (6.36%)	569 (22.49%)
KURNOOL DIST	220	51 (23.18%)	6 (2.72%)	45 (20.45%)	7 (3.18%)	27 (12.27%)

Treatment outcome of 220 MDR T.B. Cases

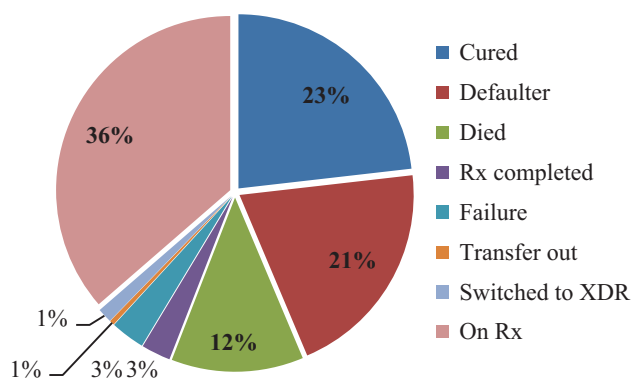


Figure-1: Treatment outcome of 220 MDR TB cases

Outcome of 248 confirmed MDR T.B. cases

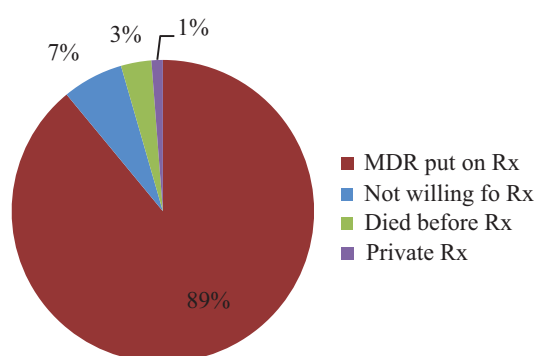


Figure-2: Outcome of 248 confirmed MDR T.B. cases

DISCUSSION

Multi-drug resistant Tuberculosis is defined as a form of T.B. due to Mycobacterium tuberculosis that is resistant to at-least isoniazid and rifampicin. This form of T.B. is documented in nearly every country surveyed by WHO/International Union against Tuberculosis and Lung Disease. Drug resistance in bacteria is a natural phenomenon but selective pursue induced by man-made mechanism is the primary cause of MDR-TB. To address MDR-TB in low and middle income settings, the WHO created DOTS PLUS for MDRTB, a man-

agement strategy built upon the foundation and principles of DOTS. In our study out of 4969 patients only 66% patients were tested for MDR-TB. 34% patients were not evaluated for MDR-TB inspite of creating awareness regarding availability of DOTS-PLUS for the management of MDR-TB. In our study 248 patients were diagnosed as having MDR-TB and only 220 patients were kept on DOTS-PLUS treatment. In a study conducted by Goble et al¹, 171 patients were diagnosed as having MDR-TB and 131 were kept on treatment. In a study conducted by Suarez et al² out of 466 patients with chronic T.B. 298 patients were diagnosed as having MDR-TB.

In our study out of 220 patients kept on treatment, 51(21%) were cured, 8(3%) patients died before starting treatment. In a study conducted by Avendano et al³ out of 40 patients diagnosed as having MDR-TB 12% patients died. In our study 45 (20%) patients out of 220 diagnosed were defaulter. In a study conducted by Tahaoglu et al⁴ defaulter rate was 11%. The most common cause of treatment default in our study was side effects of ATT. 1.61 % (n=4) patients of our study started taking private treatment for MDR-TB and 3 % (n=7) patients were treatment failures. In a study conducted by Park et al⁵ treatment failure was 17.5%. In a study conducted by Yew et al⁶ treatment failure was 14.3%. In a study conducted by Leimane et al⁷ treatment failure was 14%. In a study conducted by Shean et al⁸ treatment failure was 5%. In our study 3 patients out of 220 diagnosed as having XDR-TB and 80 patients are on treatment, in a study conducted by Keshavjee et al⁹ 48% (n=29) of patients with XDR-TB were cured and 66.7% (n=579) of MDR-TB were cured.

Nationwide RNTCP DOTS-PLUS⁸⁻¹⁰ started cat-4 treatment for 2530 patients in year 2011. Out of this 38.54% (n=975) were cured, 17.86 % (n=452) were defaulter and 6.36 % (n=161) were treatment failure and 22.49% (n=569) were died.

A retrospective study done by Leimane et al¹⁰ on MDR-TB patients (n=204) treatment by DOTS-PLUS strategy following WHO guidelines have been encouraging with 66 patients cured, 7% died and 13% defaulted.

CONCLUSION

DOTS-PLUS strategy for treating MDR-TB is effective. Measures should be taken to increase the awareness of MDR-TB and its complications among population so that all patients diagnosed as having MDR-TB were treated under DOTS-PLUS strategy.

Adherence to treatment under DOTS-PLUS should be maintained by educating the patient to prevent defaulter and treatment failure cases.

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