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Preliminary Report of Forty Three XDR TB Cases Admitted in DR-TB Center in GMCH, Aurangabad

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Abstract: ***Resistance to at least the two of the major anti-tuberculosis drugs, Isoniazid and Rifampicin has been termed MDR-TB .In addition, if the patient is resistant to a flouroquinolone and an injectable drug,it is termed as XDR TB. The diagnosis of XDR-TB requires the isolation of bacterium and antimicrobial drug susceptibility testing (DST). Clinical profile of 43 cases of XDR TB, were studied prospectively. The heartening feature is that 5 of these were cured with CAT V drugs. Another important change that has recently occurred in RNTCP guidelines is that, DST is done in the Regional laboratory as soon as MDR is diagnosed. This enables early detection of XDR, leading to early initiation of therapy.***

Keywords: XDR, MDR, DST.

1. Introduction

In India, every year 1.9 million people develop tuberculosis (TB),that accounts for one-fifth of the global TB incidence. A ‘‘defaulter’’ under RNTCP is a patient who has not taken anti-TB drugs for 2 months or more consecutively after starting treatment. If the patient has not taken anti TB drugs even for few days, he can be considered as non-compliant. In India, nearly one-quarter of TB patients are notified as ‘‘retreatment’’ i.e. with at least one month history of previous anti- TB treatment.

Resistance to at least the two of the major anti-tuberculosis drugs, Isoniazid and Rifampicin has been termed MDR-TB .In addition, if the patient is resistant to a flouroquinolone and an injectable drug,it is termed as XDR TB. The diagnosis of XDR-TB requires the isolation of bacterium and antimicrobial drug susceptibility testing (DST).

This is a prospective study of 43 patients of Extensively Drug Resistant Tuberculosis ,admitted in drug Resistant (DR-TB center) in Government Medical College, Aurangabad from JUNE 2011 to June 2017, confirmed to have XDR TB i.e. drug resistance to INH, Rifampicin, 1FQ and 1 injectable (amikacin, kanamycin, capreomycin). A thorough history was taken ,detail examination was done and investigations including thyroid function tests were carried out. After a week of starting treatment, the patients were discharged and referred to their respective TB Units for continuation of therapy. Follow up was kept through District Tuberculosis Officer and City Tuberculosis Officer, as well as those Patients who visited our institute for treatment or if they had any adverse drug reaction.

Table 1: Age wise Distribution of XDR cases-

Age	0 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 and above	Total
Male	0	10	8	7	6	0	3	34
Female	0	5	4	0	0	0	0	9
Total	0	15	12	7	6	0	3	43
	0%	34.88%	27.90%	16.27%	13.95%	0%	6.97%	100%

Table 2: Sex wise Distribution of XDR cases

Male	34	79.06%
Female	9	20.94%
Total	43	100%

Table 3: Distribution of XDR cases as per weight bands-

<45 Kg	25	58.14 %
>45 Kg	18	41.86%
Total	43	100%

Table 4: Distribution of MDR cases which were later diagnosed as XDR: (43 CASES OUT OF 617)

Started on Cat IV t/t	Switched to Cat V
617	43
100%	6.96%

Table 5: An overview of XDR patients

Started on Cat V t/t	Died	Defaulted	Cured	Failure	Treatment Completed	Transfer out	Still on Cat V
43	14	5	5	0	0	2	17
100%	32.50%	11.60%	11.60%	0	0	4.60%	39.50%

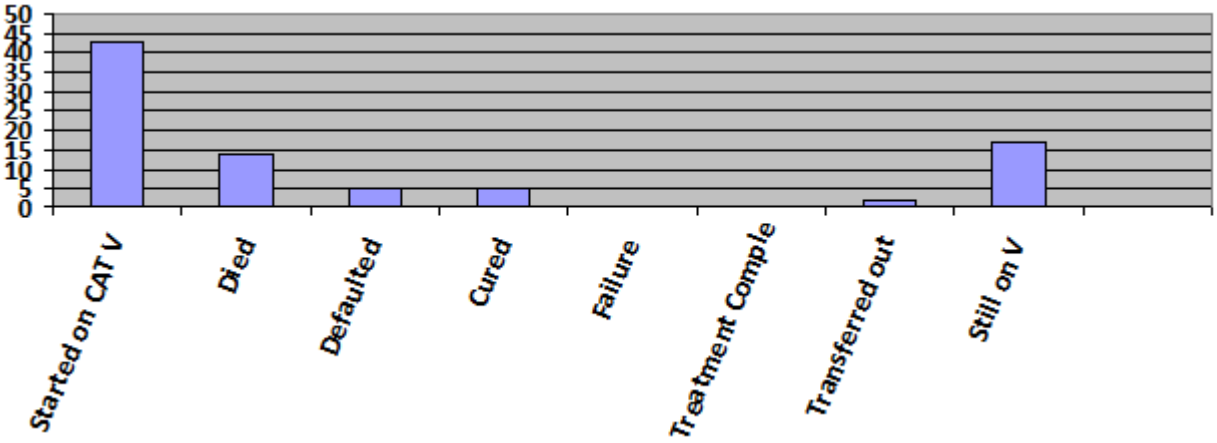

Figure 1: Distribution of XDR cases

Table 6: Phase of treatment of XDR TB

On IP(Intensive phase)	6	35%
On CP (Continuation phase)	11	65%
Total	17	100%

Table 7: XDR patients who died before treatment could be started:

Sr. No.	MDR T/t Month	XDR Sample sent date	Reported XDR Date	
1	15	21.07.14	16.10.14	Died 5.08.14
2	6	22.04.14	20.08.14	Died 19.09.14
3	11	3.04.14	25.08.14	Died 20.10.14
4	6	8.10.14	29.11.14	Died 17.11.14
5	6	20.04.15	13.07.15	Died 4.05.15
6	6	15.04.15	22.06.15	Died 9.11.15
7	22	29.09.15	8.12.15	Died 21.02.16

Table 8: Time interval between sample sent and receiving report (Days)

Sr No. of Patients	Time interval between sample sent and receiving report (Days)	Number of patients
1	0-30	0
2	31-60	1
3	61-90	4
4	91-120	1
5	121-150	1
6	Total	7

Table 9: Time interval between receiving report and death (Days)

Time interval between receiving report and death (Days)	Total
Died before report received	3
0-30	1
31-60	1
61-90	1
>90	1
Total	7

Table 10: Time lag between CAT IV and CAT V:

Sr. No.	Months	No.
1	0-3	2
2	4-6	6
3	7-9	0
4	10-12	5
5	13-15	2
6	16-18	4
7	19-21	4
8	22-24	8
9	25-27	1
10	28-30	1*

2. Observations and Summary

Out of 617 MDR cases, 43cases (6.96%) were later diagnosed as XDR cases and switched to Cat V. (Table 4) Maximum no of patients belonged to the age group 15 to 34 years (27 patients, 62.79%) ,followed by 35 years to 54 years. (13 patients, 30.22%). Also , male patients (79.06%) were more than female (20.94%). (34 males vs 9 females). (Table1&2). Most patients (25) belonged to the weight band < 45 Kg (58.13% followed by 18 in the band of >45 Kg (41.86%). (Table 3)

In this ongoing study , 14 patients (32.55%) died, 5 patients (11.62%) defaulted, 2 patients (4.65%)were transferred out and 17 patients (39.53%) are still on treatment (Cat V) (Table 5). Currently 6 patients (35.29%) are in the Intensive phase (IP) and 11 patients (64.70%) are in the Continuation phase (CP) (Table 6). Seven patients of MDR TB were diagnosed to have XDR TB but they died before commencement of treatment. Out of seven, three patients died before the report was received. Four patients died an average of two months after they were diagnosed .They were unwilling to take Cat V regimen as per information given by RNTCP District Supervisors.

In this study, out of 43 XDR TB patients, a maximum of 8 patients were put on CAT5, after receiving MDR treatment for 22-24 months. One patient had completed treatment of MDR but due to culture failure at 25th, 26th and 27th month, he was restarted with XDR regimen (Table 8). When patients were taking treatment of MDR TB, we could send repeat sputum culture at first month of two patients and the others were investigated for XDR after 6 months. Currently, sputum is sent for DST as soon as MDR is diagnosed, therefore XDR cases will be picked up, within 3 months of starting therapy for MDR.

Table 7.5: Regimen for XDR TB dosage and weight band recommendation

Drugs	Dosage/day	
	≤ 45 Kgs	> 45 Kgs
Inj. Capreomycin (Cm)	750 mg	1000 mg
PAS	10 gm	12 gm
Moxifloxacin (Mfx)	400 mg	400 mg
High dose INH (High dose-H)	600 mg	900 mg
Clofazimine (Cfz)	200 mg	200 mg
Linezolid (Lzd)	600 mg	600 mg
Amoxyclav(Amx/Clv)	875/125 mg BD	875/125 mg BD
Pyridoxine	100 mg	100 mg
Reserve/Substitute drugs		
Clarithromycin (Clr)	500 mg BD	500 mg BD
Thiacetazone (Thz)#	150 mg	150 mg

Depending on availability, not to be given to HIV positive cases

3. Conclusions

1) There is an urgent need for country-wide surveillance of MDR- and XDR TB.
2) Practical and effective infection-containment measures and facilities for intensive counselling of TB patients are needed.
3) Health education is vital. There is an urgent need to strengthen the services to treat drug –sensitive TB at grass root level.
4) Strict and early follow up of patients is needed for clinical and bacteriological failure.
5) The gap between clinical failure and diagnosis has decreased because now ,as soon as MDR is diagnosed and treatment is started, DST is advised for picking up XDR too. Thus the gap of a year or more that used to be seen earlier, for a MDR -TB case to be diagnosed to have XDR, is reduced to less than 3 months, that are needed for DST.
6) A heartening fact is that, with good counselling, compliance has increased .Also, patients tolerate the drugs used for XDR rather well

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