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TREATMENT OUTCOME OF TUBERCULOSIS PATIENT ATTENDED AT DTC OF SMS MEDICAL COLLEGE, JAIPUR (RAJ.)

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Abstract:
Objective: *To find out association of treatment outcome with age, sex and type of cases in patients attended at DTC of SMS Hospital, Jaipur (Raj.)*
Materials and methods: *A record based cross-sectional study of tubercular patients - whose outcome of treatment was declared. Study variables were –types of case, age, sex. Outcome was assessed as Cure Rate, Failure Rate, Defaulter Rate, Case Fatality Rate*
Result: *Overall Cure Rate observed 43.3% and it significantly varied with type of case, age and sex of case. Overall Defaulter Rate observed 30%. More defaulters were in relapse retreated cases and in elderly (>60 yrs.) cases. Overall Failure Rate observed 8.3% and it was highest in Cat. I cases and significantly varied with age and sex. Overall Case Fatality Rate observed 15%. About 3/4th of total deaths were observed in Failure and Relapse retreated cases. CFR showed not significant variation with sex.*
Conclusions: *Cure Rate significantly varied with type of case, age and sex of case. Defaulters were more in Relapse retreated cases and in elderly (>60 yrs.) cases. Failure Rate was highest in Cat. I cases and significantly varied with age and sex*

Keywords: *DTC, Cured Rate, Defaulters, Relapse, CFR*

Background

Tuberculosis is a disease caused by Mycobacterium Tuberculosis; has affected mankind for over 5000 yrs.[1] and continue to be a major public health problem. It is leading cause of adult mortality ranking 3rd after HIV/AIDS and IHD among aged 15-59 years.[2,3]

India is been identified as highest TB burden country accounting for approximately 1/5th (20%) of Global T.B. burden.[4]

As per RNTCP target – Target for Cure Rate is more than 85% and target for Failure Rate, Defaulter Rate and Relapse Rate are less than 5% for each category. There is very varied response from different parts of country about these targets. [5,6,7,8,9,10,11]

On the above very few studies are done to find out the possible association with these outcomes. So this study is an effort in this direction to find out treatment outcome and its associated factors.

Material and Method

This study was conducted in District Tuberculosis Centre (DTC) of SMS Hospital, Jaipur (Raj.). Records of tuberculosis

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patents attended at DTC in 1st and 2nd (since 1st Jan. 2008 to 30th June 2008), were reviewed. Tuberculosis patients, whose outcome was recorded in their records were taken in consideration for selection of sample. Out of these patients, 40 patients from each category were selected randomly for the study. Information regarding treatment outcome with socio-demographic and treatment profile was collected from the records of selected patients.

Treatment outcome was observed as Cured, Defaulter, Failure, Relapse or death, whereas it was assessed in the form of Cure Rate, Defaulter Rate, Failure Rate and Case Fatality Rate.

Socio-demographic variables were taken as age, sex, type of case etc. whichever is available is records. Category treatment regimen was accepted as per DOTs. (Anxure1)

Anexure 1:
Treatment Regimen as per DOT

Category	Type of Cases	Treatment		Total Duration	Colour Lock
		Initial Phase	Continuation		
I	New Smear Positive (NSP) Pulmonary cases(PTB), New Smear Negative PTB with extensive Parenchyma involvement , New Cases of severe Extrapulmonary TB	$2H_3R_3Z_3E_3$	$4\ H_3R_3$	6 Months	Red
II	Old Sputum Smear Positive (OSP) i.e Defaulters, Relapse, and Treatment failure	$2H_3R_3Z_3E_3S_3$ + $1\ H_3R_3Z_3E_3$	$5\ H_3\ R_3\ E_3$	8 Months	Blue
III	New Smear Negative PTB with Limited Parenchymal involvement And new less severe extra pulmonary TB	$2\ H_3R_3Z_3$	$4\ H_3\ R_3$	6 Months	Green

Results and Discussion

Result:

Cure Rate- Overall Cure Rate observed 43.3%. Minimum cure rate observed in Cat II (27.5%) cases. Difference in Cure Rate as per type of cases was observed highly significant (P value <0.001) and is least in Failure cases (20%) and highest in cat. I cases (60%). Difference in Cure Rate as per age-groups also was observed highly significant (P value <0.001) and is least (25%) in elderly cases i.e.>60 years old and highest (62.5%) in younger age-group i.e. <20years. Difference in Cure Rate as per sex was observed less significant (P value <0.05) than type of cases and age-groups and was observed more in females.

Defaulter Rate- Overall Defaulter Rate observed was 30%. Difference in Defaulter Rate as per type of cases was observed significant (P value <0.01) and is highest in Relapse Cases (50%) and lowest in cat. I cases (30%). Difference in Defaulter Rate as per age-groups was observed highly significant (P value <0.001). It was observed

highest (75%) in elderly cases i.e.>60 years old and least (15%) in younger age-group i.e. <20years. Difference in Defaulter Rate as per sex was Not significant (P value >0.05)

Failure Rate- Overall Failure Rate was observed 8.3%. Difference in Failure Rate as per type of cases was observed significant (P value <0.01) and is highest in Category I (12.5%). Difference in Failure Rate as per age-groups was observed significant (P value <0.05). It was observed highest (75%) in 40-60 yrs age-group cases Difference in Failure Rate as per sex was also just significant (P value <0.05) and was observed more in males.

Case Fatality Rate- Overall Case Fatality Rate was observed 15% and difference in CFR as per type of cases and age observed highly significant (P value <0.001) and is highest in retreated Failure Cases (40%) and lowest in cat.III cases (7.5%). Re-treated cases of failure and relapse cases

constituted about 3/4th of total deaths due to tuberculosis. It was observed highest (23.4%) in 40-60 yrs age-group cases.

Difference in CFR as per sex was Not significant (P value >0.05).

Table 1:
Treatment Outcome Assessments

	Total Cases	Cure Rate (%)	Defaulter rate (%)	Failure Rate (%)	CFR (%)
Overall	**120**	**43.3**	**30**	**8.3**	**15**
Type of Cases					
Cat I	40	42.2	30	12.5	15
Cat II	**40**	**27.5**	**42.5**	**7.5**	**22.5**
Defaulter	15	26.6	30	6.6	33.3
Relapse	20	30	50	10	10
Failure	5	20	40	0	40
Cat III	40	60	35	2.5	2.5
X^2 Value P Value **LS**		29.32 <0.001 **HS**	17.5 <0.01 **S**	15.17 <0.01 **S**	76.07 <0.001**HS**
Age – Groups					
<20	40	62.5	15	7.5	15
20-40	59	37	40.6	8.4	13.5
40-60	17	23.4	41.2	11.7	23.4
>60	4	25	75	0	0
X^2 at 3DF P Value **LS**		26.3 <0.001 **HS**	75.5 <0.001 **HS**	9.77 <.05 **S**	19.85 <0.001**HS**
Sex Wise					
Male	75	34.6	34.8	11.6	17.3
Female	45	57.8	28.9	2.2	11.1
X^2 Value P Value **LS**		6.6 0.01 **S**	0.8 >0.1 **NS**	5.79 0.02 **S**	1.37 >0.1 **NS**

Discussion:

Cure Rate- In the present study it was observed 43.3% whereas in majority of studies it is shown very high ranging from 53.8% to 91%.[5,8,9,12] In the present study it was observed less may be because of more proportion of category II cases in comparison with other studies, which was further supported with the findings of other studies where cure Rate was observed less in Cat. II.[5,6,8,,10] Cure Rate is varied as per the type of case with the P value <0.001 (HS) in the present study which was supported with finding of R.K. Mehra etall who reported Cure Rate 87.9%,76.4% and 48.8% in Cat.I, Relapse and Failure cases respectively.[7] Vijay etall also observed only 39.8% Cure Rate in Cat.II.[10]

Defaulter Rate- In the present study it was observed 30%, but Annual status report of

RNTCP (2009) observed Defaulter Rate 6% and 5% in India and Rajasthan respectively, whereas few studies are well comparable i.e. with 24.7% to 43.8%.[10,12] Difference in Defaulter Rate as per type of cases was observed significant (P value <0.01) and is highest in Relapse Cases (50%) and lowest in cat. I cases (30%). Difference in Defaulter Rate as per age-groups was observed highly significant (P value <0.001). It was observed highest (75%) in elderly cases i.e.>60 years old and least (15%) in younger age-group i.e. <20years may be because of less cared elderly.

Failure Rate- In the present study it was observed 8.3% which is well comparable with observations of Vijay, Sophia etal (5.2%)[11], but was quite higher than observed by RNTCP Annual Report 2009 (2%) and

other authors studies. [5,8,9,10] Difference in Failure Rate as per type of cases in present study was observed significant (P value <0.01) and is highest in Category I (12.5%) which was in contrast with other studies[5,6,9] where higher failure Rate was observed in Cat II (2% v/s 13.5%[5] ,3.4% v/s 48.4%[6], 3% v/s 6%[9]) .This require the need to scrutinized the cat I cases again.

Case Fatality Rate-In present study it was observed 15% which was quite higher observed by RNTCP annual Status Report[5] (4% in India and 3.6% in Rajasthan) and Vijay etall[11] who observed 2.2% CFR in their study. Difference in CFR as per type of cases was observed most significant (P value <0.001) and is highest in retreated Failure Cases (40%) and lowest in cat. III cases (7.5%), these findings were supported with RNTCP annual Status Report[5] where maximum CFR was observed in Failure cases (8.8%) and minimum in cat III (2.4%).

Conclusion

Category II cases are difficult to treat and have higher Defaulters and Case Fatality Rate so they require more attention for their follow-up and treatment. Surprisingly highest failure Rate was observed in category I cases which indicate the need of further research to identify the possible reasons for the same.

References

1. TB India 2008 RNTCP Status Report
2. WHO Report 2003 : Shaping The Future
3. WHO, World Health Status 2008 : Geneva 2008
4. WHO Global Report 2008
5. RNTCP Annual Status Report 2009
6. R.K. Mehra, V.K. Dhingra etall. "Study of Relapse and Failure cases of category I re-treated with Category II under RNTCP – An 11 Years follow-up" Indian Jn. Of Tuberculosis 2008, 55, 188-191
7. Momd. Akhtar, Rakesh Bhargava etall. "To Study Effectiveness of DOTS at J. N. Medical College, Aligarh." Lung India – 2007, vol. 24, issue 4, 128-131
8. S.L. Chadha, R.P. Bhagi etall "Treatment Outcome I Tuberculosis Patients placed under DOTs-A Cohort Study." Indian Jn. Of Tuberculosis 2000, 47, 155
9. TB India 2005 – RNTCP Status Report Central TB Division DGHS MOHFW N. Delhi.
10. Vijay, Sophia etall. "Re-Treatment Outcome of Smear Positive Tuberculosis Cases under DOTs in Banglore City" Indian Jn. Of Tuberculosis 2005, 49, 195
11. Vijay, Sophia etall. "Treatment Outcome and Two and half Year Follow-up of New Smear positive patients treated in RNTCP." Indian Jn. Of Tuberculosis, 55 199-208
12. Sukmai Bisnoi, Amitabh Sarkar etall. "A Study of Performance Response and Outcome of treatment under RNTCP in Tuberculosis Unit of Howrah District, West Bangal." Indin Jn. Of Community Medicine (2007), vol. 32 , Issue 4, 245-248