|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Original Research Article
Volume 5, Issue 1; January: 2021; Page No. 383-384

TO EVALUATE THE INCIDENCE OF DRUG RESISTANCE IN TUBERCULOSIS RE-TREATMENT PATIENTS AND ANALYZES THE PATTERN.

Dr. Srinivas Varma
Associate Professor, Dept. of Respiratory Medicine, Amaltas Institute of Medical Sciences, Dewas, M.P.

Article Info: Received 05 December 2020; Accepted 20 January 2021
DOI: https://doi.org/10.32553/ijmbs.v5i1.1679
Corresponding author: Dr. Srinivas Varma
Conflict of interest: No conflict of interest.

Abstract

Background & Method: The patient who was diagnosed as a case of Pulmonary Tuberculosis sputum positive attending the OPD, IPD of Respiratory Medicine of Sapthagiri Institute of Medical Sciences & Research Center, Bangalore, Karnataka. Physical Examination was done on Complete haemogram, Erythrocyte Sedimentation Rate, Sputum for Acid Fast Bacilli (2 samples), Sputum for Acid Fast Bacilli Culture & Sensitivity.

Result: An insignificant association between type of drug resistance and reason for registration such as defaulter, relapse and failure that concluded satisfactory insignificant ($p>0.05$) is detected among studied subjects. Maximum no. of cases was found in Isoniazide resistance observed in a total subject of 14 subjects out of which 18(18.75%) defaulter, 10(12.82%) case of relapse.

Conclusion: Drug resistance was identified in our study population as 11% Mono drug & 12% Multi Drug Resistance. Isoniazid was the most common drug against which drug resistance was identified. High prevalence rate of drug resistance, we recommend that in all freshly diagnosed cases of Pulmonary Tuberculosis, the anti tubercular treatment as recommended by RNTCP should be started immediately but before starting the treatment the sputum for AFB Culture & Sensitivity should be sent.

Keywords: Tuberculosis, resistance, re-treatment & drug.

Introduction

Tuberculosis in a patient with at any rate one smear-positive for AFB out of the two beginning sputum spreads assessment by direct microscopy[1]. A patient with symptoms reminiscent of Tuberculosis with two smear assessment negative for AFB, with proof of aspiratory Tuberculosis by microbiological techniques culture positive or by other affirmed atomic strategy or chest x beam is delegated having smear negative pneumonic Tuberculosis[2].

Medication resistance in Tuberculosis might be extensively named essential & obtained. Medication opposition in a patient who has never gotten hostile to Tuberculosis treatment previously is named as primary resistance[3].

Gained obstruction is what happens because of explicit past treatment. The term starting opposition is utilized to show essential obstruction and obstruction among patients whose set of experiences of past chemotherapy isn't known. WHO and the IUATLD have now supplanted the term essential obstruction with the term drug opposition among new cases and gained obstruction with the term drug opposition among recently treated cases[4].

Material & Method

The patient who was diagnosed as a case of Pulmonary Tuberculosis sputum positive attending the OPD, IPD of Respiratory Medicine of Sapthagiri Institute of Medical Sciences & Research Center, Bangalore, Karnataka from April 2018 to March 2019. A total no of 200 patients of re-treatment cases who gave oral informed consent. Physical Examination was done on Complete haemogram, Erythrocyte Sedimentation Rate, Sputum for Acid Fast Bacilli (2 samples), Sputum for Acid Fast Bacilli Culture & Sensitivity.

Inclusion criteria:

1. Diagnosed cases of Pulmonary Tuberculosis who have been registered in RNTCP.
2. Age group more or equal to 20 yrs.

Exclusion criteria

1. Patients suffering from Extra Pulmonary Tuberculosis.
2. Critically ill patient.
3. Pulmonary Tuberculosis with Human Immunodeficiency Virus.
4. Patient unwilling for study.

Results

Table 1: Association between Drug resistant and reason of registration

Types of drug resistant	Defaulter		Failure		Relapse		All	
	NO.	%	NO.	%	NO.	%	NO.	%
MDR	16	17.7	00	0.00	08	8.9	24	12.00
Mono resistance	12	13.3	00	0.00	10	11.1	22	11.00
Poly resistance	02	2.4	00	0.00	00	0.00	02	1.00
No	60	66.6	20	100	72	80	152	76.00
All	90	100	20	100	90	100	200	100

Pearson chi- square =4.633, Df = 6, P-Value = 0.1497

An insignificant association between type of drug resistance and reason for registration such as defaulter, relapse and failure that concluded satisfactory insignificant ($p>0.05$) is detected among studied subjects.

Table 2: Type of Drug Resistance, Source

Drug Resistance	Non RNTCP		Source RNTCP		Total	
	No.	%	No.	%	No.	%
Mono Resistance	06	9.09	16	11.94	22	11.0
No Growth	46	69.70	106	79.10	152	76.00
Poly Resistance	00	0.00	02	1.49	02	1.00
MDR	14	21.21	10	7.46	24	12.00
Total	66	100.00	134	100.00	200	100.00

Pearson Chi-Square = 5.164, DF = 2, P-Value = 0.387

Table 3: Drug resistance pattern and reason for registration

Drug resistance pattern	Defaulter		Relapse		Failure		All	
	NO.	%	NO.	%	NO.	%	NO.	%
Isoniazid	18	18.75	10	12.82	00	00	28	14
Rifampicin	16	16.67	08	10.26	00	00	24	12
Pyrizinamide	06	6.25	04	5.13	00	00	10	05
Ethambutol	16	16.67	04	5.13	00	00	20	10
Streptomycin	16	16.67	14	17.95	00	00	30	15
NO	24	25.00	38	48.72	26	100	88	44
ALL	96	100.00	78	100.00	26	100	200	100

Maximum no. of cases was found in Isoniazide resistance observed in a total subject of 14 subjects out of which 18(18.75%) defaulter, 10(12.82%) case of relapse.

Discussion

The pace of resistance in recently treated cases are in dynamically higher than in recently analyzed cases, however information on obstruction in recently treated patients are restricted. The longitudinal pattern of drug resistance in Gujarat somewhere in the range of 1980 and 1986 shows that in treatment disappointment or backslid patient, protection from Rifampicin increased from 2.8% in 1980 37.3 percent in 1986 and to Isoniazid from34.5 percent to 55.8 per cent[5]. It was assumed that significant degree of Rifampicin opposition was primarily acquired[6].

An examination was directed by the ICMR 75 to contrast the adequacy of SCC and the traditional non Short Course Chemotherapy in North Arcot region, Tamil Nadu. The population was inspected during There follow-up period to affirm the bacterial quiescence and in turn the adequacy of SCC. It was discovered that there was an expansion in the recurrence of obstruction in recently treated patient with 67% protection from Isoniazid, 26% to streptomycin and 12 percent to Rifampicin. Moreover, 6% of strains tried were protection from both Isoniazid and Rifampicin[7].

An investigation from New Delhi during the 1990s likewise showed a higher level of resistance in previously treated patients to Isoniazid and Rifampicin, which is practically same that of the Gujarat report[8].

Conclusion

Drug resistance was identified in our study population as 11% Mono drug & 12% Multi Drug Resistance. Isoniazid was the most common drug against which drug resistance was identified. High prevalence rate of drug resistance, we recommend that in all freshly diagnosed cases of Pulmonary Tuberculosis, the anti tubercular treatment as recommended by RNTCP should be started immediately but before starting the treatment the sputum for AFB Culture & Sensitivity should be sent.

References

1. Pablos-Mendez A, Knirsch CA, Barr RG, Lerner BH, Frieden TR (1997) Nonadherence in Tuberculosis treatment: predictors and consequences in New York City. Am J Med 102: 164–170.
2. RNTCP Training module for medical practitioners: Administering Treatment .December 2010; 3:22-55 page no.27.
3. Johnson J, Kagal A, Bharadwaj R. Factors associated with drug resistance in pulmonary Tuberculosis Indian J Chest Dis Allied Sci 2003; 45:105-29.
4. The WHO/ IUATLD global project on Anti-Tuberculosis drug resistance Surveillance. Anti Tuberculosis drug resistance in the world. Report no. 2. WHO/CDS/TUBERCULOSIS/2000.278. Geneva: WHO, 2000.
5. Gupta PR, Singhal V, Sharma TN, Gupta RB. Prevalence of initial drug resistance in Tuberculosis patients attending a chest hospital. Indian J Med Res 1993; 97: 102-3.
6. Datta M, Radhamani MP, Selvaraj R, Paramasivan CN, 72. Gopalan BN, Sudeendra CR, et al. critical assessment of smear positive pulmonary Tuberculosis patient after chemotherapy under the district Tuberculosis programme. Tuberc Lung Dis 1993;74:180-6.
7. Jain NK, Chopra KK, Prasad G. Initial acquired Isoniazide and Rifampicin resistance to M.Tuberculosis and its implication for treatment. Indian J Tuberc 1992; 39:121-4.
8. Trivedi SS, Desai SC. Primary Anti Tuberculosis drug resistance and acquired Rifampicin resistance in Gujarat- India. Tubercle 1988;69:37-42