A Cross-Sectional Study to Correlate the Demographic and Clinical Profile of Multidrug-Resistant Tuberculosis Patients

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ABSTRACT

Introduction: Tuberculosis is one of the most important issues of consideration throughout the world. Every country in the world has a budget for tuberculosis eradication means one can understand the importance of this disease.

Aim: The present study was undertaken to correlate the demographic and clinical profile of multidrug-resistant tuberculosis patients.

Materials and Methods: The study recruited 30 male and female patients from the respiratory medicine department. Demographic data and clinical data were obtained from the medical records department with prior permission from the authorities

Results: The majority of the patients studied up to intermediate. The majority of the patients were belonging to the retired group. The majority of patients belongs to the 4-5 lakhs category. The majority of patients showed symptoms of fever. Diabetes is the most commonly observed comorbidity. In both cases, 1+ is more common. Negative cases are more in the patients. Table no 9 presents the total leucocyte count in patients. The majority of cases are in the normal range.

Conclusion: The study presents detailed information about the relation between the demographic and clinical information of the patients who are resistant to multiple drugs. Further studies are needed in this area for detailed understanding.

Key Words: Pathology, Culture, Tuberculosis, Drug resistance, Disease, Eradication

INTRODUCTION

Tuberculosis is one of the most important issues of consideration throughout the world. Every country in the world has a budget for tuberculosis eradication means one can understand the importance of this disease. That is the reason why the world health organization announced this as a global health problem.¹ Throughout the world, the contribution of India is very high with 26 percent of cases is from our country.² Hence, India is not exempted from this burden. Though all the countries in the world are trying to eradicate this disease, still the goals were not achieved. The main reason for this is drug resistance in the patients. The multi-resistance to the drugs means the patient becomes resistant to the isoniazid and rifampicin with or without resistance to other drugs.³ It was reported that India is one of the leading countries where we find more cases of this resistance.⁴ It was recommended that these cases have to be identified at the earliest to avoid fur-

ther spread in the community. Hence, it is very much needed to understand the relation between the clinical and demographic aspects of this disease. The present study was undertaken to correlate the demographic and clinical profile of multidrug-resistant tuberculosis patients.

MATERIALS AND METHODS

Study design: Cross-sectional study

Sampling method: Convenient sampling

Study population: The study recruited 30 male and female patients from respiratory medicine department. Participants who were willing voluntarily were included in the study with proper informed consent. Those unwilling were not recruited in the study. Those with severe complications were also not included in the study.

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Data collection: Demographic data and clinical data were obtained from the medical records department with prior permission from the authorities.

Ethical considerations: The study proposal was approved by the institutional ethics committee after satisfying the queries adequately. The study followed all the guidelines as per the ICMR guidelines. Written informed consent was obtained from all the participants before the commencement of the study. Information related to the patients was kept confidential.

Data analysis: Data was analyzed using SPSS 20 software.

Results: Table no 1 presents the frequency and percentage of patients on an educational basis. The majority of the patients studied up to intermediate. Table no 2 present's frequency and percentage of patients by occupation basis. The majority of the patients were belonging to retired groups. Table 3 presents the frequency and percentage of patients by occupation basis. The majority of patients belongs to the 4-5 lakhs category. Table no 4: Signs and symptoms of patients. The majority of patients showed symptoms of fever. Table 5 presents the frequency and percentage of patients by comorbidities. Diabetes is the most commonly observed comorbidity. Tables 6 and 7 presents the details of sputum AFB 1 and AFB 2. In both cases, 1+ is more common. Table no 8 presents the details of the liquid culture of patients. Negative cases are more in the patients. Table no 9 presents the total leucocyte count in patients. The majority of cases are in the normal range.

Table 1: Frequency and percentage of patients by education basis

S. no.	Education status	Number of patients (n=30)
1	Illiterate	5 (16.66)
2	Primary	6 (20)
3	Secondary	4 (13.33)
4	Intermediate	6 (20)
5	Graduate	5 (16.66)
6	Post graduate	4 (13.33)

Data were presented as frequency and percentage

Table 2: Frequency and percentage of patients by occupation basis

S. no	Education status	Number of patients (n=30)
1	House wife	3 (10)
2	Farmer	3 (10)
3	peon	8 (26.66)
4	Hotel owner	2 (6.66)
5	Vegetable vendor	2 (6.66)
6	sweeper	2 (6.66)
7	Retired	10 (33.33)

Data were presented as frequency and percentage

Table 3: Frequency and percentage of patients by occupation basis

S. no	Education status	Number of patients (n=30)
1	< 1 lakh	10 (33.33)
2	1-2 lakhs	5 (16.66)
3	2-4 lakhs	2 (6.66)
4	4-5 lakhs	10 (33.33)
5	>5 lakhs	3 (10)

Data were presented as frequency and percentage

Table 4: Signs and symptoms of patients

S. no	Education status	Number of patients (n=30)
1	Dry cough	2(6.66)
2	Breathlessness	1(3.33)
3	Chest pain	8 (26.66)
4	Fever	10 (33.33)
5	Weight loss	1 (3.33)
6	Edema	2 (6.66)
7	Icterus	2(6.66)
8	Clubbing	4 (13.33)

Data were presented as frequency and percentage

Table 5: Frequency and percentage of patients by comorbidities

S. no	Education status	Number of patients (n=30)
1	Diabetes	8(26.66)
2	Hypertension	8(26.66)
3	Weight loss	8 (26.66)
4	COPD	1 (3.33)
5	Renal failure	5 (16.66)

Data were presented as frequency and percentage

Table 6: Details of sputum AFB 1

S. no	Education status	Number of patients (n=30)
1	Negative	2(6.66)
2	1+	18(60)
3	2+	8 (26.66)
4	3+	2 (6.66)

Data were presented as frequency and percentage

Table 7: Details of sputum AFB 2

S. no	Education status	Number of patients (n=30)
1	Negative	1(3.33)
2	1+	14(46.66)
3	2+	10 (33.33)
4	3+	5 (16.6)

Data were presented as frequency and percentage

Table 8: Details of liquid culture of patients

S. no	Education status	Number of patients (n=30)
1	Negative	27(90)
2	Rifampicin Resistance detected	3(10)

Data were presented as frequency and percentage

Table 9: Total leucocyte count in patients

S. no	Education status	Number of patients (n=30)
1	<4000	2(6.66)
2	4000-11000	22(73.33)
3	>11000	6(20)

Data were presented as frequency and percentage

DISCUSSION

Bacterial diseases like tuberculosis which is caused by the mico bacterium tuberculosis. This disease deteriorated the respiratory system especially the apical surface of the lungs. This area is more common because the circulation is limited in this area. This is a global burden and India is not an exemption. India also facing a large number of cases and also spending a large amount in eradicating the disease. However, the outcome of these projects is limited. The only reason is patients developing resistance because of the continuous use of drugs. The present study was undertaken to correlate the demographic and clinical profile of multidrug-resistant tuberculosis patients. Table no 1 presents the frequency and percentage of patients on an educational basis. The majority of the patients studied up to intermediate. Table no 2 present's frequency and percentage of patients by occupation basis. The majority of the patients were belonging to retired groups. Table 3 presents the frequency and percentage of patients by occupation basis. The majority of patients belongs to the 4-5 lakhs category. Table no 4: Signs and symptoms of patients. The majority of patients showed symptoms of fever. Table 5 presents the frequency and percentage of patients by comorbidities. Diabetes is the most commonly observed comorbidity. Tables 6 and 7 present the details of sputum AFB 1 and AFB 2. In both cases, 1+ is more common. Table no 8 presents the details of the liquid culture of patients. Negative cases are more in the patients. Table no 9 presents the total leucocyte count in patients. The majority of cases are in the normal range. It was reported that there are several comorbidities associated with the patients of this drug-resistant patients.^{5,6} Patients were found to be negative in both the cultural studies in the earlier studies.⁷⁻¹⁰ The present

study also observed similar results as the majority of patients were found to be negative. The study provides authoritative evidence about the correlation between the demographic and clinical variables.

CONCLUSION

The study presents detailed information about the relation between the demographic and clinical information of the patients who are resistant to multiple drugs. Further studies are needed in this area for detailed understanding.

Conflict of interest: NIL

Source of funding: NIL

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