

Clinical profile of patients with Drug resistant tuberculosis in Mumbai

Jairaj P. Nair^{1*}, Amita U. Athavale², Vijay S. Khatri³

¹Assistant Professor, Department Of Chest Medicine & Eprc, Seth G.S. Medical College & KEM Hospital, Parel, Mumbai, India

²Professor & Head Department Of Chest Medicine & Eprc, Seth G.S. Medical College & KEM Hospital, Parel, Mumbai, India

³Associate Professor, Department Of Chest Medicine & Eprc, Seth G.S. Medical College & KEM Hospital, Parel, Mumbai, India

Received: 13-08-2017 / Revised: 20-08-2017 / Accepted: 04-09-2017

ABSTRACT

Background: Tuberculosis is a global epidemic. Drug Resistant Tuberculosis (DR-TB) is a big blow to the National Tuberculosis Control Programme. Second line Anti TB drugs are expensive, toxic and weaker drugs than First line anti TB drugs. **Aims:** To study demographic and clinical profile of drug-resistant TB patients in Mumbai. **Materials and Methods:** Data was collected from DR-TB patients attending tertiary care hospital over one year period. **Observation and Results:** Of the 60 cases analyzed, DR-TB mainly affected less than 40 years age group. Females were more affected. Of the 60 cases, 42 patients had Pulmonary TB; while 18 patients had extra-pulmonary TB. Radiology helped in diagnosis and assesses the response to treatment especially in extra pulmonary TB. **Conclusion:** Drug Resistant Tuberculosis affects the economically productive age-group. Constitutional symptoms predominate even in drug resistant tuberculosis. Acquired drug resistance remains the main cause for drug resistant tuberculosis in India. Pulmonary drug-resistant TB cases exceed Extra-pulmonary TB cases in urban set up.

Keywords: Demography, MDR-TB, Radiology in MDR -TB

Introduction

Tuberculosis has been declared as a global epidemic by the World Health Organization. Drug Resistant Tuberculosis is a global threat to National Tuberculosis Control Programme in all countries. Multi-drug Resistant Tuberculosis is the strain of mycobacteria that is resistant to at least - Isoniazid and Rifampicin – the two most important drugs for TB treatment[1,2]. The use of molecular methods has increased the yield of diagnosis of drug resistant tuberculosis exponentially. There is a need to study the profile of patients with drug resistant tuberculosis to make earlier diagnosis and initiate correct treatment for better outcomes.

*Correspondence

Dr. Jairaj P. Nair

Assistant Professor, Department Of Chest Medicine & Eprc, Seth G.S. Medical College & KEM Hospital, Parel, Mumbai, India

E Mail: dr.jairaj.p.nair@gmail.com

Aim & Objectives

To study the demographic profile of patients with drug resistant tuberculosis

To study the clinical presentation in patients with drug resistant tuberculosis

To study the radiological profile of patients with drug resistant tuberculosis

Methodology

All patients with Multi-drug Resistant Tuberculosis were included in this study conducted over 1 year period. Ethics Committee permission was obtained from the institute. Written informed consent was obtained from all patients. Their detailed demographic, clinical and investigations were collected and analyzed using Excel sheet and SPSS software.

Observation & Results

60 patients were included in this study. These patients were referred from various departments of the hospital for management of Drug Resistant Tuberculosis. Those

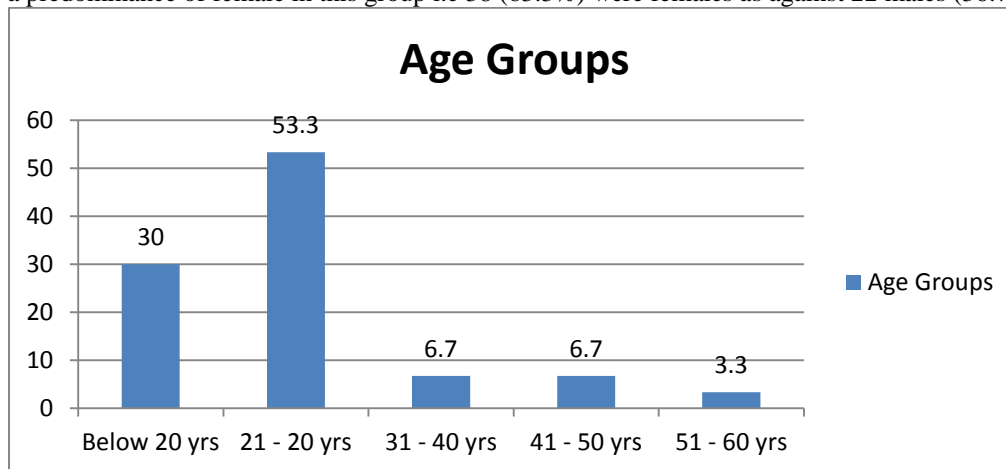
patients included in the study were positive for growth of Mycobacteria on culture which was resistant to Isoniazid and Rifampicin. The following observations

were noted during analysis of the data collected from these patients.

Table 1: Gender

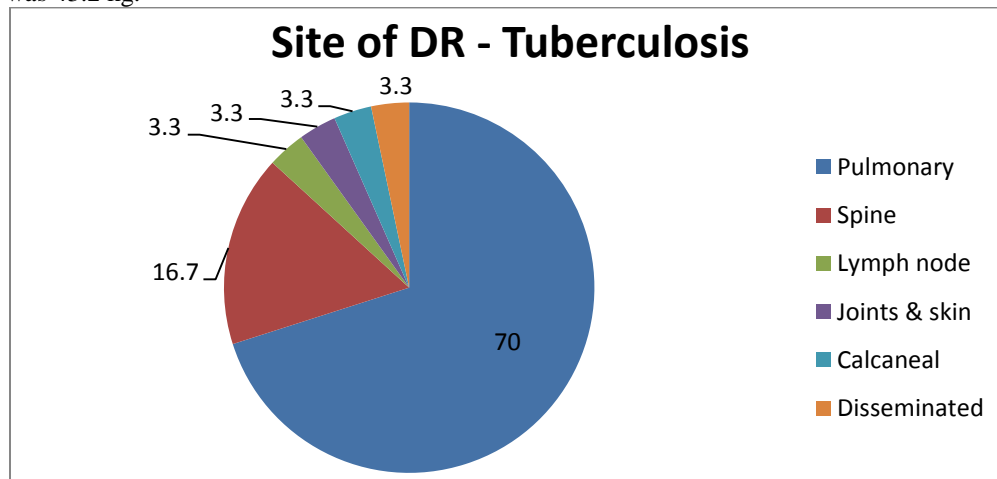
	Frequency	Percent
Female	38	63.3
Male	22	36.7
Total	60	100.0

There was a predominance of female in this group i.e 38 (63.3%) were females as against 22 males (36.7%)[3].



Graph 1: Age Groups

90% (54) of the study group were below 40 yrs of age. This was the economically productive group especially worst for the sole bread-winner of the family. The youngest in the group was 18-year old. The mean weight in this group was 43.2 kg.



Graph 2: Site of Drug Resistant Tuberculosis

There were 42 cases (70%) of Pulmonary Tuberculosis. While 10 cases (16.7%) were Pott’s Spine (Tuberculosis of the Spine). Rest was 2 cases (3.3%) each of Skin & joint, Lymph node, Calcaneal & disseminated form of TB.

Table 2: Symptoms

Symptoms	Frequency	Percent
Constitutional symptoms	58	96.7
Cough	38	63.3
Backache	10	16.7
Abscess in heel	2	3.3
Abdominal pain	2	3.3
Breathlessness	2	3.3
Discharging sinus on wrist	2	3.3
Neck swelling	2	3.3
Right sided Chest Pain	2	3.3

The predominant symptoms in this group were **constitutional symptoms** of low grade fever, anorexia and weight loss before starting the treatment. (Except 2 patients of lymph node tuberculosis – who did not have these symptoms). The next common symptom was cough (63.3%) (due to predominant pulmonary cases in the study group). Next common symptom was backache (16.7%). All the 60 people had been treated with First line AKT at least once in the past accounting for the drug resistance. Of the 60 people, 14 people (23.3%) gave history of anti-TB treatment for 2 times in the past. Two patients gave history of anti-TB treatment for 3 times before this second line regimen (Acquired Drug resistance).

Table 3: X-Ray Chest findings

Abnormality	Frequency	Percent
Bilat. UZ fibrocystic	2	3.3
Infiltrates	28	46.6
Cavitation	6	9.9
Lt fibrocavity disease	2	3.3
Consolidation	6	9.9
Normal	14	23.3
Hydropneumothorax	2	3.3
Total	60	100.0

While 14 patients had normal X-ray chest (mainly EPTB), the rest of the patients had X-ray findings consistent with pulmonary tuberculosis.

All cases showed growth of *Mycobacterium tuberculosis* complex from the respective specimen sample. (i.e Sputum in Pulmonary cases) from a WHO accredited laboratory on AFB MGIT (*Mycobacterium Growth in Indicator Tubes*). All cases were resistant to Isoniazid & Rifampicin (hence they are all cases of Multi-drug Resistant Tuberculosis.).

Discussion

It was seen that Drug Resistant Tuberculosis affects the economically productive age group. Males are generally more affected than females in Tuberculosis [3]. But there was a female predominance in this study group (63.3%). Pulmonary drug resistant cases were more common than extra-pulmonary cases. 42 cases (70%) had pulmonary TB; while 18 cases (30%) had

Extra Pulmonary TB (EP-TB)[4]. Amongst the EP-TB, Pott's Spine (TB Spine) were the most common in this study (16.7%). All cases in this group were secondary drug resistant cases (i.e all had prior exposure to anti TB drugs) similarly noted in Kant S *et al* study[5].

The symptoms of tuberculosis were similar in Drug resistant cases but persistence of symptoms despite first line anti TB drugs makes one suspicious of DR- PTB. Similarly, in extra-pulmonary TB, failure of clinical/radiological response makes the diagnosis of possible DR- EPTB. All 60 cases were confirmed to be Multi-drug Resistant Tuberculosis based on WHO accredited laboratory for culture of *Mycobacteria* with drug susceptibility testing. Chest X-Ray and other imaging modalities[6] remain one of the important tools for diagnosis and response to treatment especially in extra-pulmonary cases where follow-up sample for microbiology is often not available while on treatment.

Conclusion

Drug Resistant Tuberculosis affects the economically productive age-group. Constitutional symptoms predominate even in drug resistant tuberculosis. Acquired drug resistance remains the main cause for drug resistant tuberculosis in India. Pulmonary drug-resistant cases exceed Extra-pulmonary cases. X-ray and other imaging help in diagnosis of Tuberculosis and also help in assessing the response to treatment. For follow-up in Extra-pulmonary Tuberculosis, Radiological modalities are mainstay for response as sample for culture is frequently difficult to obtain while on treatment. Drug Susceptibility Testing remains the main stay for planning treatment regimen in these patients.

References

1. Guidelines for the programmatic management of drug-resistant tuberculosis 2011 update. *whqlibdoc.who.int/publications/2011/9789241501583_eng.pdf*
2. WHO Report 2005: WHO/HTM/TB/2005,49. WHO: Geneva; Global tuberculosis control: Surveillance planning financing.
3. Gender differentials of pulmonary tuberculosis transmission and reactivation in an endemic area. M-E Jiménez-Corona, L García-García, K De Riemer, L Ferreyra-Reyes, M Bobadilla-del-Valle, B Cano-Arellano, S Canizales-Quintero, A Martínez-Gamboa, P M Small, J Sifuentes-Osornio, and A Ponce-de-León. *Thorax*. 2006 ; 61(4): 348–353.
4. Assessing Tuberculosis Case Fatality Ratio: A Meta-Analysis. Masja Straetemans, Philippe Glaziou, Ana L. Bierrenbach, Charalambos Sismanidis, and Marieke J. van der Werf. *PLoS One*. 2011; 6(6): e20755.
5. Kant S, Kumar S, Prasad R, Mukerji PK, Jain A. A study to investigate the reasons of treatment failure in category II of RNTCP of India. *Indian J Tuberc*. 2004;51:163–7.
6. Radiological Findings of Extensively Drug-Resistant Pulmonary Tuberculosis in Non-AIDS Adults: Comparisons with Findings of Multidrug-Resistant and Drug-Sensitive Tuberculosis. Jihoon Cha, Ho Yun Lee, Kyung Soo Lee, Won-Jung Koh, O Jung Kwon, Chin A Yi, Tae Sung Kim, and Myung Jin Chung. *Korean J Radiol*. 2009; 10(3): 207–216.

Source of Support: Nil

Conflict of Interest: Nil