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Assessment of clinical profile of multi drug resistant tuberculosis patients

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Abstract
Background: Drug-resistant tuberculosis (DR-TB) has become a significant public health problem in number of countries and one of the major obstacles in effective tuberculosis control programme. The present study was conducted to assess clinical profile of multi drug resistant tuberculosis patients.
Materials & Methods: 82 patients of drug resistant TB of both genders were included and all were subjected to chest X-ray and mantoux test. Assessment of clinical features, type and treatment outcome was recorded.
Results: out of 82 patients, males were 52 and females were 30. Clinical features were fever in 69, cough in 56, loss of appetite in 28, loss of weight in 14 and past history in 6. Type of drug resistance was contact with partial XDR in 10, MDR in 6, MDR with contact in 30 and partial XDR in 36 patients. Type of tuberculosis was pulmonary TB in 40, disseminated TB in 26, TB lymphadenopathy in 9 and abdominal TB in 7 cases. The difference was significant ($P < 0.05$).
Conclusion: Common clinical features were fever, cough, loss of appetite and loss of weight.

Keywords: Multi drug resistant tuberculosis, fever, cough

Introduction
Drug-resistant tuberculosis (DR-TB) has become a significant public health problem in number of countries and one of the major obstacles in effective tuberculosis control programme [1]. Emergence of drug resistant tuberculosis (TB), particularly multi drug resistant tuberculosis (MDR-TB) has been an area of growing concern and is posing a threat to global efforts of TB control [2].
Drug resistance can be simply defined as the temporary or permanent capacity of organisms and their progeny to remain viable or to multiply in the presence of the concentration of the drug that would normally destroy or inhibit cell growth [5]. Clinically, drug resistance can be divided into four types. Anti-tuberculosis drug resistance is classified according to the confirmed mono-resistance, confirmed poly-resistance and confirmed multi-drug resistant TB (MDR-TB): Tuberculosis in patients whose infecting isolates are resistant *in vitro* to at least isoniazid and rifampicin.
Paediatric tuberculosis can act as sentinels of DRTB it is an aftermath of adult TB. Paediatric DRTB is a silent epidemic which is often overlooked and the cases which present to us may just be the tip of an iceberg. Burden of DRTB and its clinical profile in paediatric population is inadequately scrutinized [5]. The diagnosis in this age group may be an uphill task due to various hurdles like difficulty in history taking, complex examination findings and difficulty in procurement of sample for an accurate microbiological diagnosis [6]. The therapy of DR-TB in children can be quite wearisome due to quandaries with the dose adjustment modes of drug dispensation and the therapy related ADRs [7]. The present study was conducted to assess clinical profile of multi drug resistant tuberculosis patients.

Materials & Methods
The present study comprised of 82 patients of drug resistant tuberculosis of both genders. All patients were enrolled after their parent gave consent.
Data such as name, age, gender etc. was recorded. They were defined drug resistant -TB if their drug susceptibility testing (DST) detected resistance to any of the antitubercular drugs, or these children were in contact with an adult suffering from culture proven drug resistance. Patients were classified to have mono resistant TB, polyresistant TB, MDR TB and XDR-TB as per WHO classification.

A history and clinical examination were done in all patients. All were subjected to chest X-ray and mantoux test. Assessment of clinical features, type and treatment outcome was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

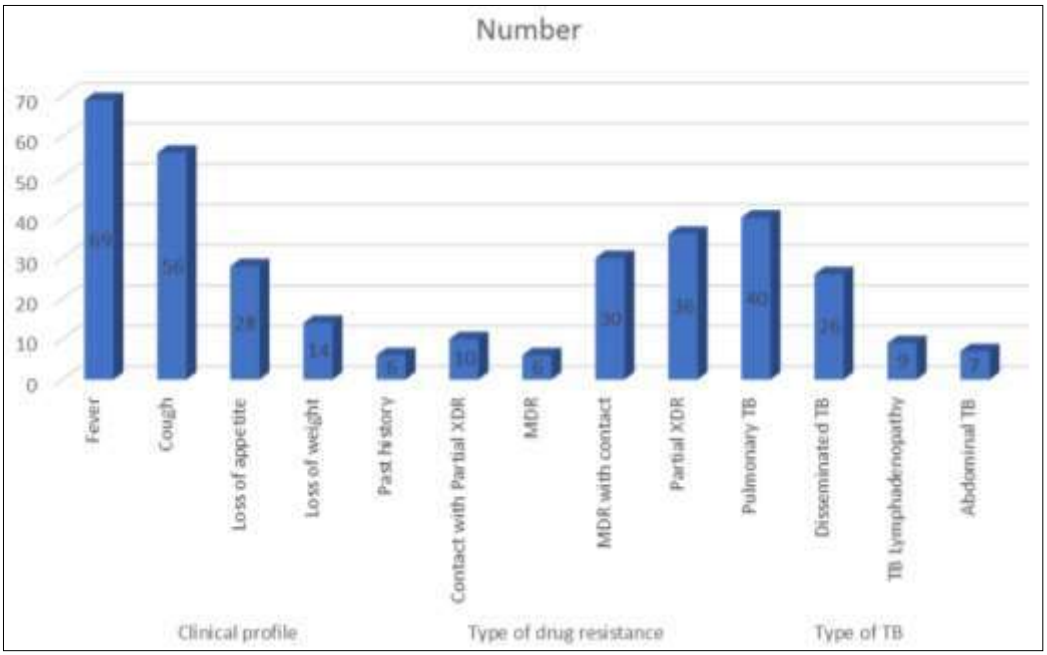
Total- 82		
Gender	**Males**	**Females**
Number	52	30

Table I shows that out of 82 patients, males were 52 and females were 30.

Table 2: Assessment of parameters

Parameters	Variables	Number	P value
Clinical profile	Fever	69	0.04
	Cough	56	
	Loss of appetite	28	
	Loss of weight	14	
	Past history	6	
Type of drug resistance	Contact with Partial XDR	10	0.01
	MDR	6	
	MDR with contact	30	
	Partial XDR	36	
Type of TB	Pulmonary TB	40	0.02
	Disseminated TB	26	
	TB Lymphadenopathy	9	
	Abdominal TB	7	

Table II, graph I shows that clinical features were fever in 69, cough in 56, loss of appetite in 28, loss of weight in 14 and past history in 6. Type of drug resistance was contact with partial XDR in 10, MDR in 6, MDR with contact in 30 and partial XDR in 36 patients. Type of tuberculosis was pulmonary TB in 40, disseminated TB in 26, TB lymphadenopathy in 9 and abdominal TB in 7 cases. The difference was significant ($P < 0.05$).



Graph 1: Assessment of parameters

Discussion

In India DRTB has been perpetually identified ever since the inception and implementation of the revised national tuberculosis control program (RNTCP) [8]. The paediatric population is a scapegoat for acquisition of TB as well as DRTB [9]. Despite of the advances in the diagnostics and the amended therapy protocols TB still continues to prevail as one of the ten major causes of mortality in the paediatric age group [10]. Incidence of Paediatric DR-TB has seldom been estimated precisely although they constitute more than a quarter of the global population. The situation is quite bloodcurdling with the 2016 statistics which estimated 1

million children being afflicted with TB and 250,000 children succumbing to TB [11]. The present study was conducted to assess clinical profile of multi drug resistant tuberculosis patients.

In present study, out of 82 patients, males were 52 and females were 30. Prasad et al. [12] analysed the clinical profile and treatment outcome of DRTB in paediatric population. Out of 120 patients, 95% (114) were above 12 years and rest 5% (6) were below 12 years, male to female ratio was 1:2.53. MDR-TB was present in 85% (102), 9.17% (11) had pre-XDR-TB, 5.83% (7) had XDR-TB. Pulmonary-DRTB was seen in 89.17% (105), 10.83% (15) had extrapulmonary-DRTB. Primary-DRTB was observed in 11.67% (14). Complications noted were pneumothorax (5.83%, 7 cases) and haemoptysis (2.5%, 3 cases). Mean duration of culture conversion was 3.33 months. Commonest adverse drug reactions (ADRs) were Psychosis, gastritis (11.67%, 14 cases each). Overall treatment success was 42.5% (51) which was better in MDR-TB (44.11%, 45 cases) than XDR-TB (28.5%, 2 cases) and Pre-XDR-TB (36.36%, 4 cases). Mortality was 21.67% (26) of whom 19.60% (20) had MDR-TB, 42.8% (3) had XDR-TB, 27.27% (3) had pre-XDR-TB and 20% (24) failed to treatment.

We found that clinical features were fever in 69, cough in 56, loss of appetite in 28, loss of weight in 14 and past history in 6. Type of drug resistance was contact with partial XDR in 10, MDR in 6, MDR with contact in 30 and partial XDR in 36 patients. Type of tuberculosis was pulmonary TB in 40, disseminated TB in 26, TB lymphadenopathy in 9 and abdominal TB in 7 cases. Shah et al. [13] determined the clinical profile of drug-resistant tuberculosis in children. Patients were classified as monoresistant TB, polyresistant TB, multidrug resistant (MDR)-TB and extensively drug resistant (XDR - TB). Of 500 children analysed, 34 (6.8%) had drug resistant TB. Mean age of presentation was 6.8±3.2 years (Male: Female ratio 13:21). 18 (52.9%) children had been treated for tuberculosis in the past (1 defaulted), 7 patients had been in contact with an adult suffering from drug resistant TB and 3 patients (10.3%) were HIV co-infected. Fourteen children (41.2 %) had MDR TB, 11 (32.4 %) had Partial XDR, 1 each (2.9 %) had polyresistant TB and XDR TB. Clinical features of DR-TB are similar in all age groups. Past history of TB with treatment with antitubercular agents, and contact with adults suffering with drug-resistant TB are important risk factors in development of drug-resistant -TB in children.

Suárez et al. [14] found that out of 234 admitted cases, majority (48.00%) were between 18-50 years. Males were predominant (58.12%). Most patients (61.96%) were underweight (BMI). Among the patients, HIV seropositivity and MDR-TB was found in 8.97% each. A very high default rate was present (20.51%) and a cure rate of 43.59%. The commonest associated co morbidity was Diabetes Mellitus (20.94%). Most patients had moderately extensive (52.99%) lesions in chest x-ray. Relapse of previous antituberculosis treatment was found to be major contributor of MDR-TB suspect as 96.58% had taken ATT previously. Early diagnosis of drug resistance, quality DOTS services and rational use of anti-TB drugs can prevent emerging of MDR-TB as a major public health problem. Adequate dose, adequate duration and Adequate Regimen are the key to success in the treatment of Tuberculosis and prevention of drug Resistance.

Conclusion

Authors found that common clinical features were fever, cough, loss of appetite and loss of weight.

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