

HEALTH AND SOCIO-DEMOGRAPHIC PROFILE OF PAEDIATRIC TUBERCULOSIS PATIENTS ON DOTS THERAPY IN AHMEDABAD CITY

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ABSTRACT

Background: Children are especially vulnerable to the effects of tuberculosis, which is often difficult to diagnose in young children and therefore difficult to treat effectively.

Aims & Objectives: To study profile of pediatric TB patients who are on DOTS therapy in Ahmedabad Municipal Corporation (AMC) area during April-June, 2011.

Materials and Methods: This study was cross sectional study carried out in 100 pediatric patients of tuberculosis out of 197 registered during April 2011 to June 2011 from all TB units (10 units) in AMC area. Data analysis was done using SPSS software.

Results: Out of 100 patients, 60 were female and 40 were male. Age range was 1-14 year. Mean age of children was 8.63 ± 3.66 years. Mean age of male patients was 9.36 ± 3.16 years. Mean age of female patients was 7.53 ± 4.10 years. According to modified Prasad's classification, 78% patients belonged to lower socioeconomic class. 94% patients were in Category-1 and 79% had extra pulmonary TB. 4% patients had HIV infection. Parents of 90% patients didn't have knowledge of TB. 60% of patients preferred syrup formulation, if available.

Conclusion: Apart from pharmacological treatment poor knowledge of Pediatric TB in Parents of patients also needs great attention.

Key Words: Paediatric; Tuberculosis; Directly Observed Treatment, Short-course (DOTS); Awareness

Introduction

India is the highest TB burden country accounting for one fifth of the global incidence and it is 17th among 22 high TB burden countries in terms of TB incidence rate.^[1] Every year, approximately 1.8 million persons develop tuberculosis, of which, about 0.8 million are new smear positive highly infectious cases. Tuberculosis kills about 0.32 million people every year. Two out of every five Indians are infected with TB bacillus. Every day about 5000 people develop the disease.^[2,3] Most of new cases of TB and deaths due to TB occur in developing countries, where infection is often acquired in childhood.^[2] Children are especially vulnerable to the effects of tuberculosis, which is often difficult to diagnose and therefore, difficult to treat effectively. Pediatric TB results from failure of TB control in adults.^[4] No other chronic infection of childhood comes anywhere close to TB.

It is one of the giant killers of children. Childhood deaths from TB are usually caused by disseminated disease.^[2] This study was planned to study the socio demographic profile of children who were on DOTS therapy. So we decided to carry out anthropometric measurement amongst children who are on DOTS therapy and assess the knowledge of TB in parents of pediatric TB patients.

Materials and Methods

A cross sectional study was carried out including all the 10 treatment units of TB in Ahmedabad municipal corporation (AMC) area. Study period was of 3 months (April to June 2011). Total 100 patients out of 197 registered patients of 0-14 years age group during April to June 2011 were selected by random sampling and visited with the help of TB health visitor. After taking verbal consent of parents of patients, patients and parents were interviewed on the basis of pre-designed pre-tested form and information regarding their health status, DOTS therapy and their awareness regarding tuberculosis were noted. Data was statistically analyzed using SPSS software.

Results

Out of total 100 children studied, 40 (40%) were males and 60% were females. However age range was from 1 year to 14 years. 16 pediatric patients were in 1-5 year (pre-school) age group, whereas 34% and 50% belonged to 6-10 (primary school) and 11-14 year (adolescent) age groups respectively. Thus occurrence of disease was more in adolescents. Mean age of children was 8.63 ± 3.66 years. Mean age of male patient was 9.36 ± 3.16 years. Mean age of female patient was 7.53 ± 4.10 years.

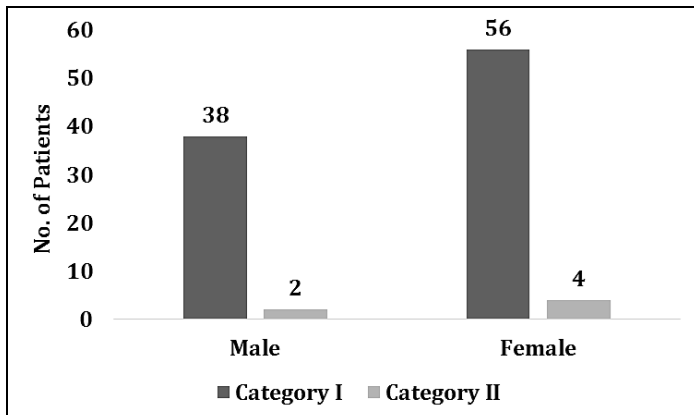


Figure-1: Distribution of cases according to category

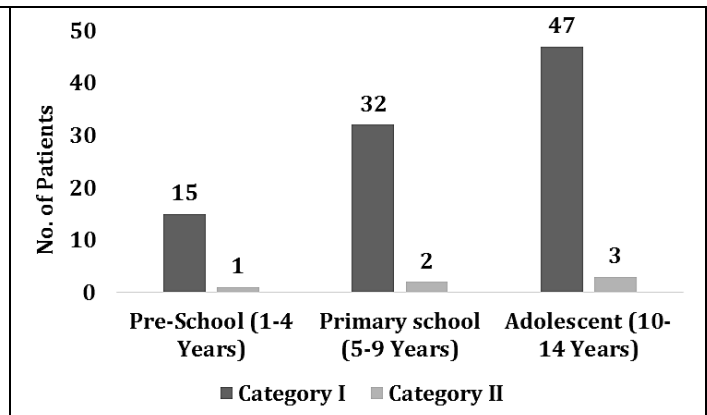


Figure-2: Category wise distribution of cases according to age groups

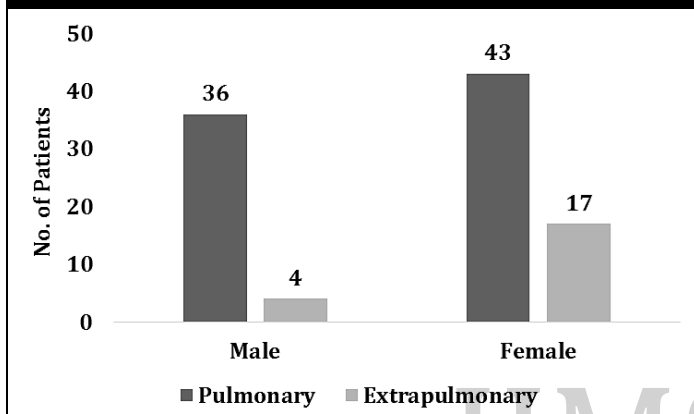


Figure-3: Distribution of cases according to disease types

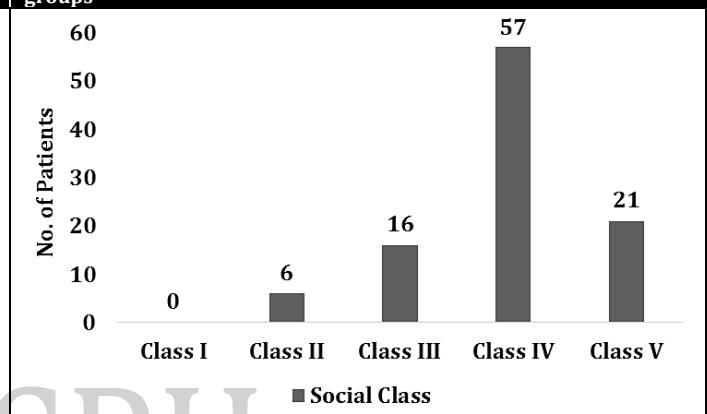


Figure-4: Distribution of children according to their Social class (Modified Prasad's Classification)

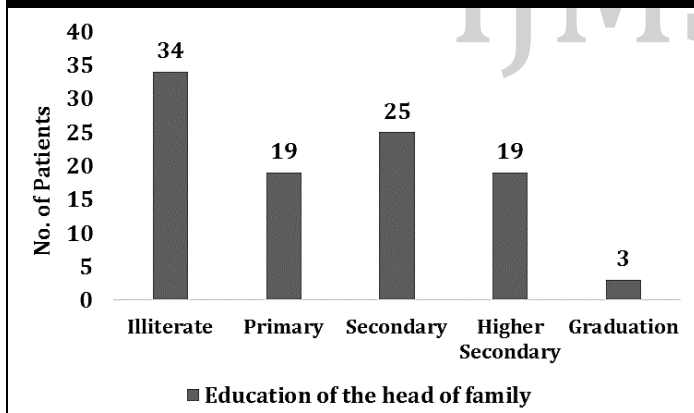


Figure-5: Distribution of children according to the education of their head of family

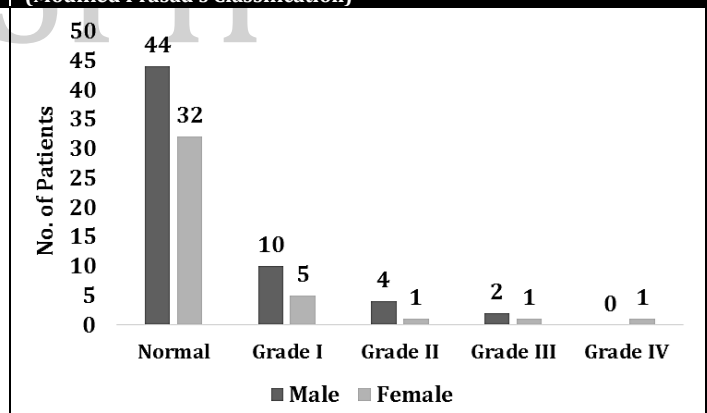


Figure-6: Distribution of children according to their grades of malnutrition (Indian Academy of Paediatric classification)

Incidence of TB was higher in males in preschool age group. However, it was higher in females in the 6-14 years age group. This age difference in the two sex groups was highly significant. ($p < 0.01$) (Table-1)

Table-1: Age group wise distribution of paediatric TB cases

Age of Patients	Female	Male	Total
Pre-School (1-4 Years)	4	12	16
Primary school (5-9 Years)	22	12	34
Adolescent (10-14 Years)	34	16	50

Chi-square: 9.814; Degree of freedom = 2; $p < 0.007$

The pediatric TB cases were divided into two categories.

Category-1 comprised 94 cases, while 6 cases were in Category-2 (Figure 1). Category I (47%) and Category II (3%) both were more common in adolescents (Figure 2), There were 79% cases of Extra-pulmonary TB (EPTB) (as compared to 15% of adults^[7] during this period)^[8] followed by 21% cases of Pulmonary TB. Thus, despite a predominance of the pulmonary form in adult, the prevalence of EPTB was noticeably high in children (Figure-3). Out of 79 cases of EPTB, 56 (70.8%) cases had lymphadenopathy.

Most of the children were from lower socio economic class - 57% children belonged to social class 4, followed by 21% children belonging to social class 5) (Figure 4). 47 % children lived in kachha house, overcrowding was present in 65% of houses of children; ventilation was inadequate in 53% of houses of children. 44% of children lived in joint family.

Majority (34%) of heads of family of children were illiterate, followed by those who had completed primary education (19%). 25% had secondary education and 19% had higher secondary education. Only 3% of heads of family were graduates (Figure: 5). 90% of parents of children didn't have proper knowledge regarding TB and only 77% parents knew the advantage of completion of treatment.

7% children had family history of TB and 4% children had TB with HIV. 17% children who had sputum smear positive TB didn't follow the proper technique of sputum disposal. 42% patients complained about adverse effects like abdominal pain and nausea and vomiting due to therapy. 92 % of patients had stopped therapy for more than one week. 60% of the children preferred liquid formulation of DOTS therapy in the form of syrup.

According to Indian Academy of Pediatric classification, out of total children, 76% children (Female: 44, Male: 32) were normal. 15 children had grade-1 malnutrition, 5 children had grade-2 malnutrition and 3 children had grade-3 malnutrition. Only 1 male child had grade-4 malnutrition (Figure 6).

Discussion

In the study carried out by V K Arora et al, 63% of children were female. They also observed that disease was more common in adolescents. Category I TB dominated the adolescent group. Category III TB case percentage was higher in pre-school and primary school age groups.^[5]

In the study carried out by S.K. Kabra et al, mean age of the children was 7.75 years and sex distribution was almost equal. Category-1 constituted 70.4% cases. Category-2 and Category-3 cases were 2.6% and 27.0% respectively.^[6]

In the study of V K Arora et al, Extrapulmonary TB (EPTB) was seen in 47 percent of children. Among EPTB, lymphadenopathy was seen in 75 % of cases in their study.^[5] Whereas, in the study carried out by

Saumyaswaminathan et al, lymphadenopathy was the most common (67%), among extrapulmonary manifestations.^[7]

Conclusion

Out of total 100 children studied, 40% were males while 60% were females. The mean age of children was 8.63+ 3.66 years. Mean age of female children was 7.53+ 4.1 years and mean age of male children was 9.36+ 3.16 years. Majority of children (56 %) belonged to joint family. Most of the children were from lower socio economic class. (57% children belonged to social class 4 followed by 21% children belonging to social class 5). Out of 100 children heads of family of 34 children were illiterate. 47% of children lived in kachha house. Overcrowding was present in house of 65% of children and also ventilation was inadequate in 47% of children. 60% of the children preferred liquid formulation of DOTS therapy in the form of syrup. 17% children who had sputum smear positive TB didn't follow the proper technique of sputum disposal. 24% of children were malnourished. Parents of 90% children didn't know about the TB disease and parents of only 77% children knew about the advantages of regular therapy. Only 7% of patients had family history of TB.

RECOMMENDATIONS

- BCG vaccination status and /status of scar - of the patient should be included in the treatment card.
- Family history of TB should be inquired in all patients and needs to be documented in the treatment card.
- Mantoux test should not be considered as a diagnostic tool for starting anti TB drugs. Rather, detailed investigation should be done before the child is put on treatment.
- Emphasis should be given on sputum disposal training for adults and elder children.
- 92% of children had stopped therapy for more than one week which indicates that the parents need motivation for compliance to regular and complete treatment of their children.
- Parents should be educated regarding TB and advantage of completion of treatment.
- Regular follow-up during continuous phase of treatment should include growth monitoring of the children and nutritional education to the parents.

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