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## A Study on Drug Prescribing Pattern in Upper Respiratory Tract Infections among Pediatrics in Tertiary Care Hospital, Palakkad



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### ABSTRACT

**Objective:** To describe and obtain the data about the usage of drugs in pediatric patients with upper respiratory tract infections in tertiary care hospital. **Methodology:** The study was designed as a Hospital based prospective observational study was carried out for a period of 6 months among inpatients and outpatients in the Pediatric department. Both male, as well as female with respiratory tract infection of age group up to 12 years, were included in the study. The gender, age, distribution of antibiotics, route of administration, different classes of drugs prescribed and disease distribution pattern were reported using specially prepared data entry form. **Results:** Out of 153 cases upper Respiratory Tract Infections are more prevalent in the age group of 1-5 years (52.28%). Whereas, the gender distribution in the patients shows that out of 153 patients 82(53.59%) patients were males and 71(46.40%) patients were females. A total of 514 drugs were used in Upper Respiratory Tract Infections, Antibiotics was prescribed in 104 cases(67.97%). Other respiratory drugs prescribed are Cetrizine (61.53%), Phenylephrine (58.65%), Chlorpheniramine (30.76%), Bromhexine(64.42%). **Conclusion:** The present study shows that Antibiotics are the most commonly prescribed drugs in the pediatric population, thus special measures are imperative for their rational usage to prevent the emergence of resistance.



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## INTRODUCTION

Upper respiratory tract infections (URI or URTI) are illnesses caused by an acute infection which involves the upper respiratory tract including the nose, sinuses, pharynx or larynx. This commonly includes tonsillitis, pharyngitis, laryngitis, otitis media, sinusitis, and the common cold are resolve spontaneously. The upper respiratory tract infection is one of the most common reason for pediatric consultations [1,2]. More than 200 viruses can cause URTIs. Common cold does not require antimicrobial agent unless it is complicated by acute otitis media with effusion, tonsillitis, sinusitis and lower respiratory tract infections.

It is observed in many studies that a substantial proportion of antibiotic prescribing is sub-optimal , prescribing inappropriate spectrum antibiotic, indication of an antibiotic for little/no sign of bacterial infection, prolonged courses for minor infections and overuse of parenteral preparations are the general errors observed in the antibiotic usage, which results in an avoidable adverse effects, increase in health care costs and resistance to antibiotics for the community as well as a whole [3].

For more URTIs the best treatment is no pharmacologic treatment. If the child is not very ill, it is best to avoid most medications, they usually do not work and all have potential side effects that are worst than the usual cold symptoms. Management of URTIs includes non-pharmacologic therapy which may ameliorate the rhinorrhea and cough:

Good hydration

Elevating head

Saline nose drops

Educational handouts

Bulb syringe

Water vapourizer

Optimal and judicious selection of AMAs for the therapy of infectious diseases requires clinical judgment and detailed knowledge of pharmacological and microbiological factors.

### Objective of the study

- To study the current trend of a prescribing pattern of the drugs used in Upper Respiratory Tract Infections.
- To Obtain, the data on demographic Characteristics of the patients selected for analysis

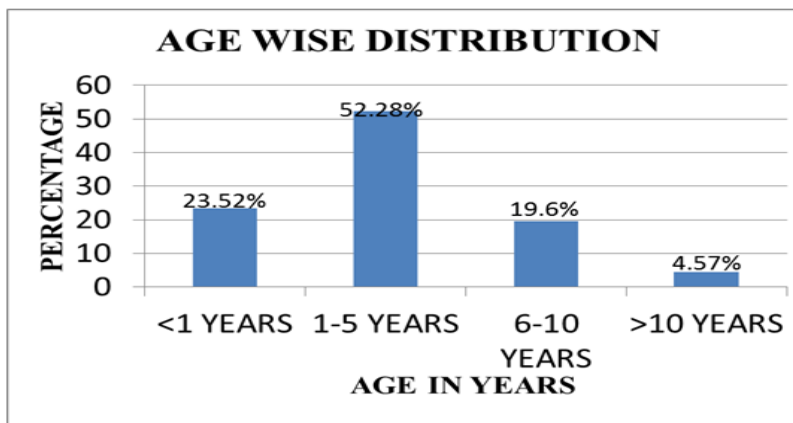
### MATERIALS AND METHODS

The study was designed as a prospective observational study. Pediatric patients of both sex and age up to 12 years with respiratory tract infections were included in the study. Patient admitted in NICU were excluded from the study. The study was carried out for 6 months from October 2015-march 2016. A specially designed data entry form was used for collecting patient details. Total of 153 patients were included in this study.

### RESULTS

**Table 1: Age distribution of pediatric patients.**

AGE	No. of Patients(n)	PERCENTAGE
<1YEARS	36	23.52%
1-5 YEARS	80	52.28%
6-10 YEARS	30	19.60%
>10 YEARS	7	4.57%



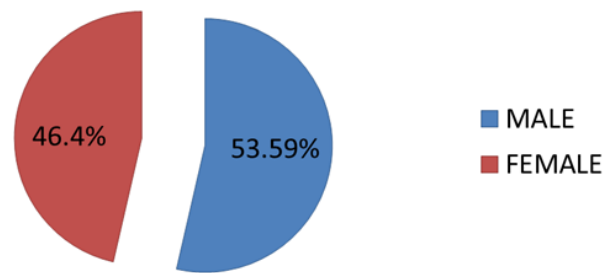
**Figure 1: Age distribution of pediatric patients.**

Table 1 & Figure 1 shows the age wise distribution of pediatric patients and the result revealed that most of the patients are in the age group of 1-5years (52.28%).

**Table 2: Gender distribution of pediatric patients.**

SEX	NO.OF PATIENTS (n)	PERCENTAGE
MALE	82	53.59%
FEMALE	71	46.40%

**GENDER WISE DISTRIBUTION**

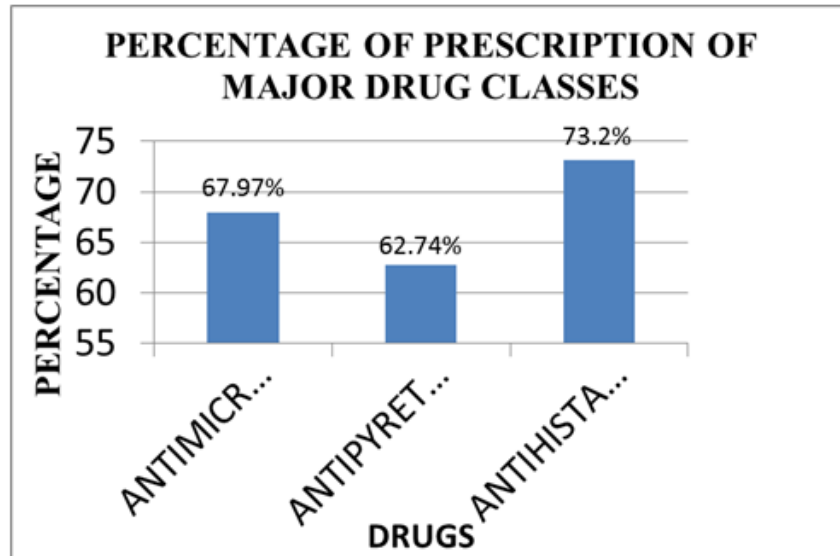


**Figure 2: Gender distribution of pediatric patients.**

Table 2 & Figure 2 shows that out of 153 patients 82(53.59%) were male and 71(46.4%) were female.

**Table 3: Percentage of prescription of major drug classes.**

CLASSES OF DRUGS	NO. OF PATIENTS	PERCENTAGE
ANTIMICROBIAL	104	67.97%
ANTIPYRETICS	96	62.74%
ANTIHISTAMINES	112	73.20%



**Figure 3: Percentage of prescription of major drug classes.**

Table.3 and Figure.3 shows that Antihistamines (73.2%) are the major drug class prescribed for Upper Respiratory Tract infection in pediatrics.

**Table 4: Distribution of individual antibiotics.**

ANTIBIOTICS GIVEN	N0.OF PATIENTS	PERCENTAGE
Azithromycin	51	49.03%
Amoxicillin+Clavulanic acid	38	36.5%
Amoxicillin	6	5.76%
Ceftriaxone	2	1.92%
Cefadroxil	3	2.88%
Cefixime	4	3.84%

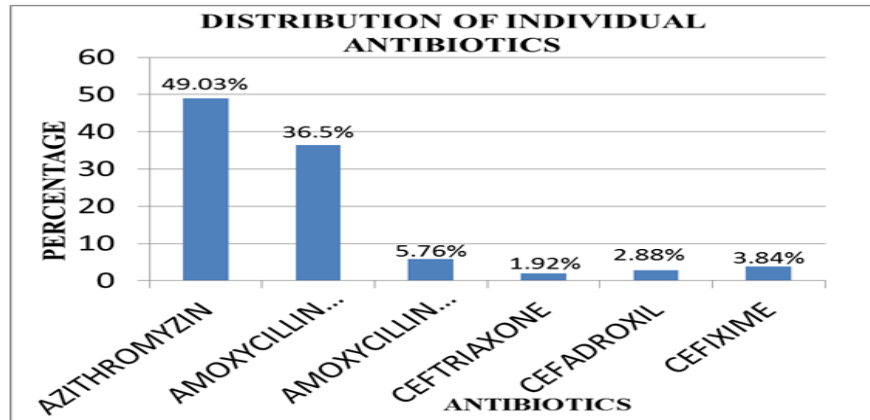


Figure 4: Distribution of individual antibiotics.

Table. 4 and Figure.4 shows that Azithromycin (49.03%) is the antibiotic mostly prescribed for Upper Respiratory Tract Infection in Pediatrics.

Table.5: Distribution of Individual Respiratory Drug.

Respiratory Drug	No.of Patients	Percentage
Cetirizine	64	61.53%
Phenylephrine	61	58.65%
Chlorpheniramine	32	30.76%
Bromhexine	67	64.42%

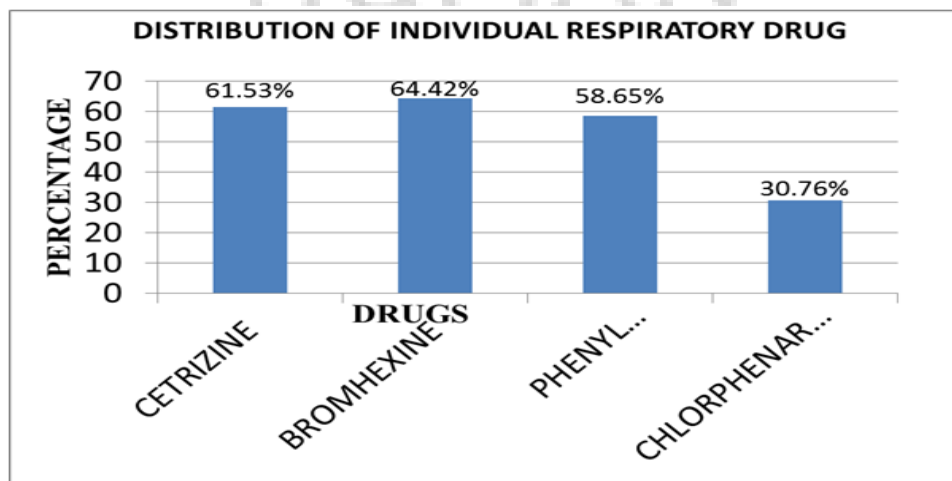


Figure.5 Distribution of Individual Respiratory Drug

Table.5 and Figure.5 shows the distribution of individual respiratory drug

**Table.6: Prescribing indicators among pediatric patients**

PARAMETER	NUMBER
Total no. of drugs prescribed	514
Average no.of drugs per encounter	3.35
Percentage of encounter with antibiotic prescribed	104(67.97%)
Percentage of encounter with injection prescribed	12(3.92%)

## DISCUSSION

### Age

Age distribution in Upper Respiratory Tract Infection in Pediatrics was found to be more prevalent in the age group between 1-5years (52.28) as shown in fig.1 which was found to be in accordance with the study conducted by Meena K Nandimath and Sam Ahuja(2012).

### Gender

The study shows that Upper Respiratory tract infection in Pediatrics was commonly seen in male patients 82(53.59%) than female patients (46.40%) which were in accordance with the study conducted by Meena K Nandimath and Sam Ahuja.

### Percentage of prescription of major classes

Antihistamines (73.20%) are the major class of drug prescribed in Upper Respiratory Tract Infection in Pediatrics.

### **Distribution of individual Antimicrobial agents**

Azithromycin(49.03%) is the most prescribed antibiotic for Upper Respiratory Tract Infection in Pediatrics. A similar study was done by Meena K Nandimath and Sam Ahuja.

### **Distribution of Individual Respiratory Drug**

Respiratory drugs prescribed are cetirizine(61.53%), Bromhexine(64.42%), Phenylephrine (58.65%) and Chlorpheniramine ( 30.76%).

### **CONCLUSION**

The study was conducted to assess the prescribing pattern of drugs for Upper Respiratory Tract Infection in Pediatrics. Age distribution in Upper Respiratory Tract Infection was found to be more prevalent in the age group between 1-5years (52.28%). Our study revealed that the gender distribution in Upper Respiratory Tract Infection among Pediatrics was found to be more in males 82 (53.59%), than in female 71(46.40%). Antihistamines (73.2%) are the major drug class prescribed for Upper Respiratory Tract infection in pediatrics. Azithromycin (49.03%) is the antibiotic most prescribed for Upper Respiratory Tract Infection in Pediatrics. Average no.of drug per encounter is 3.35.

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