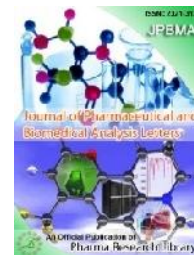




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RESEARCH ARTICLE

A Study of Drugs Prescribing Pattern in Upper Respiratory Tract Infections in Tertiary Care Hospital

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ABSTRACT

Scope of prescribing pattern emphasize study on every pattern of therapy impose in treatment goal of Upper respiratory tract infections. Especially use and choice of drugs as mono therapy, dual therapy, triple therapy. The hallmark of determination of drug interaction and associated study on Upper respiratory tract infections complications therapy incidence was precisely covered in the study for further relevancy in therapeutic monitoring of drug with achievable dosing schedules. Focus to do observational study in patients enumerating prospective analysis of prescription pattern review. Confounding factors and findings beneficial to provide useful feedback to physician Quoting management of prescription schedules in complicated and non-complicated group of Upper respiratory tract infections patient. Advice on withdrawal or substituting the precipitant drug would be beneficial in clinical management of relevant drug-drug interactions. Strategic management of complications ascertained with selective therapy and role of drug prescribed in the study. In this study 120 patients with the diagnosis of Upper respiratory tract infections visited the general medicine department during the six months in which data was collected. Prescriptions of all 120 patients were analyzed and the following demographic details were obtained. Maximum numbers of patients were in the age group of between 1-5 years (42.33 %) and among 120 cases, males constituted 70 (60 %) and females 48 (40 %). There is a high rate of inappropriate antibiotic prescription for acute URTIs in the private health care sector. Further studies are needed to determine the population-based rates across the country. Interventions to decrease inappropriate use in such settings are urgently needed.

Keywords: Therapeutic monitoring, Upper respiratory tract infections, Antibiotic

ARTICLE INFO

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1. 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 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. Upper Respiratory Infection. The upper respiratory tract includes the sinuses, nasal passages, pharynx, and larynx. These structures direct the air we breathe from the outside to the trachea and eventually to the lungs for respiration to take place. An upper respiratory tract infection, or upper respiratory infection, is an infectious process of any of the components of the upper airway.

Causes of Upper Respiratory Infection

An upper respiratory tract infection is generally caused by the direct invasion of the inner lining (mucosa or mucus membrane) of the upper airway by the culprit virus or bacteria. In order for the pathogens (viruses and bacteria) to invade the mucus membrane of the upper airways, they have to fight through several physical and immunologic barriers.

Risk Factors for Upper Respiratory Infection

- Some common risk factors for upper respiratory infection are:
- Physical or close contact with someone with a upper respiratory infection;
- Poor hand washing after contact with an individual with upper respiratory infection;
- Close contact with children in a group setting, schools or daycare centers;
- Contact with groups of individuals in a closed setting, such as, traveling, tours, cruises;
- Smoking or second-hand smoking (may impair mucosal resistance and destroy the cilia);
- Health care facilities, hospitals, nursing homes;
- Immunocompromised state (compromised immune system) such as, HIV, organ transplant, congenital immune defects, long term steroid use; and
- Anatomical abnormalities as in facial trauma, upper airway trauma, nasal polyps
- Medical Care for Upper Respiratory Infection
- Most people tend to diagnose and treat their symptoms at home without seeking professional medical care.
- A great majority of cases of upper respiratory infection are caused by viruses and are self-limited, meaning they resolve on their own spontaneously.
- Symptoms last more than a couple of weeks,
- Symptoms are severe and worsening,

Upper Respiratory Infection Diagnosed

In evaluating people with suspected upper respiratory infection, other alternative diagnoses need to be considered.

Some of the common and important diagnoses that can resemble upper respiratory infection are:

- Asthma,
- Pneumonia,

2. Materials and Methods

Methodology

In this study, 120 cases were collected in which describing the selection therapy and drugs were administered for Upper respiratory tract infections as well choice ascertained to concurrent illness. The study was Simple Prospective observational study which was carried out for a period of six months. The patients were involved in the study based on inclusion and exclusion criteria. In this study, the type of administered to patients whether single or in combination triple therapy was evaluated. The gender, age of the patient, type of therapy and type of co morbid concurrent illness with relevancy were studied. However it collectively notifies the chance of actual and potential drug interactions of drugs essentially severe. The results were analyzed.

Study site:

The study was conducted at department of Tuberculosis & Respiratory Department, Dr. P.V. Ramachandra Reddy People's Poly Clinic (PVRPPC), Nellore.

Study design:

It is a prospective observational study at department of general medicine and children ward, Dr. P.V. Ramachandra Reddy People's Poly Clinic (PVRPPC), Nellore

Study period:

A period of six months in Dr. P.V. Ramachandra Reddy People's Poly Clinic (PVRPPC), Nellore

Inclusion criteria: All inpatients and outpatients with the diagnosis of respiratory tract infection.

- Age > 18 years
- Hospitalized for complications like Fatigue
- Fever
- Congestion, either in the nasal sinuses or lungs
- Runny nose
- Cough
- Sore throat
- Body aches
- Fatigue
- a fever over 103° F (39° C) and chills
- Difficulty breathing
- Dizziness
- Loss of consciousness
- Acute pharyngitis
- Acute ear infection

Exclusion criteria:

- Gestational diabetic patients
- Juvenile D.M patients
- ICU patients
- Unconscious patients

Data Collecting Method

- The study was conducted on the basis of patient perspective and is a sort of prevalence based study.

- The medical history consisting of inpatient medical records are reviewed for specific period of time.
- Data recorded as patient demographic characteristics, clinical status duration of disease, type of complication, length of stay.

3. Results and Discussion

In this study 120 patients with the diagnosis of Upper respiratory tract infections visited the general medicine department during the six months in which data was collected. Prescriptions of all 120 patients were analyzed and the following demographic details were obtained. Maximum numbers of patients were in the age group of between 1-5 years (42.33 %) (Illustrated in Fig.3) and among 120 cases, males constituted 70 (60 %) and females 48 (40 %) (Illustrated in Fig.3).

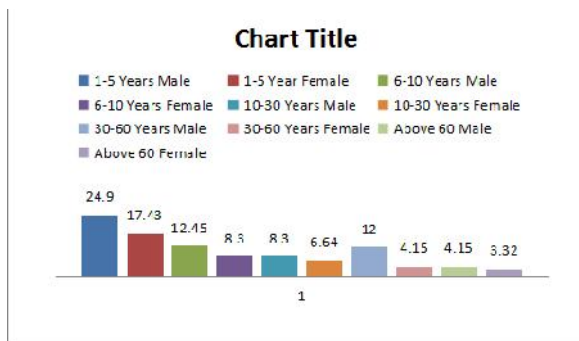


Figure 3: Patient Demographic Characteristic (Sex and age wise Distribution).

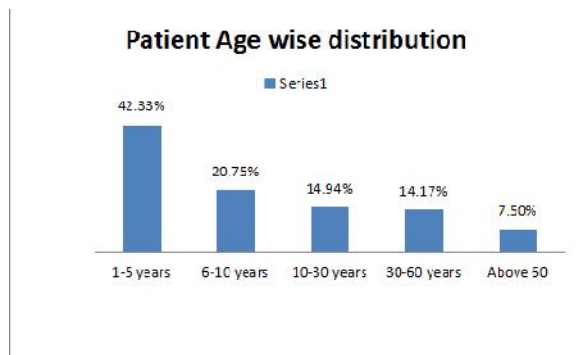


Figure 4: Patient Demographic Characteristic (Age wise Distribution).

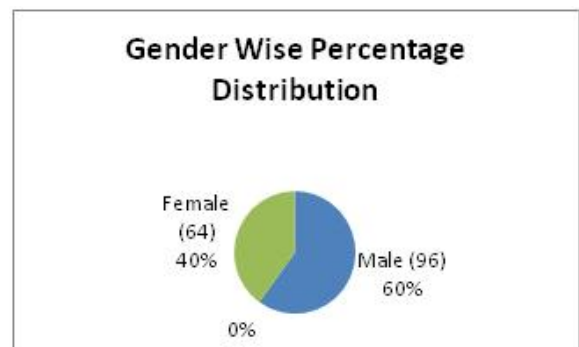


Figure 5: Patient Demographic Characteristic (Sex wise Distribution).

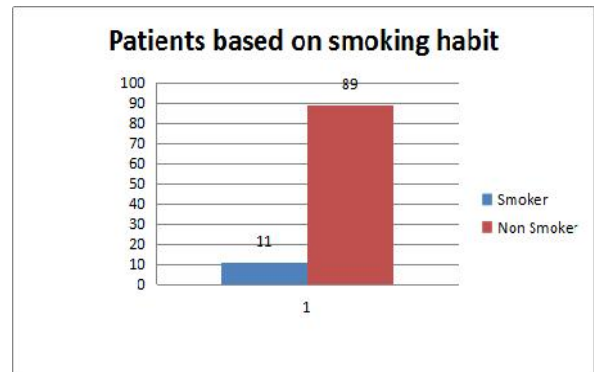


Figure 6: Distribution of the Patients Based on Smoking Habit

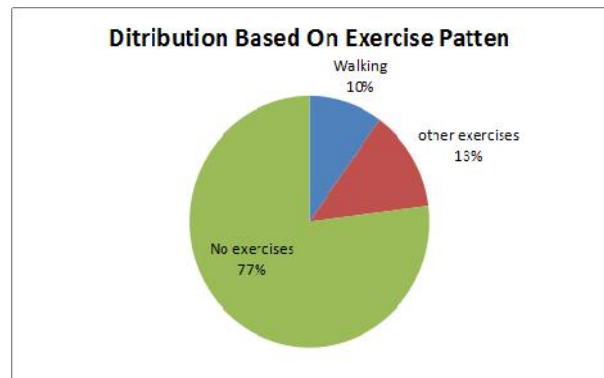


Figure 7: Distribution Based on Exercise Patten

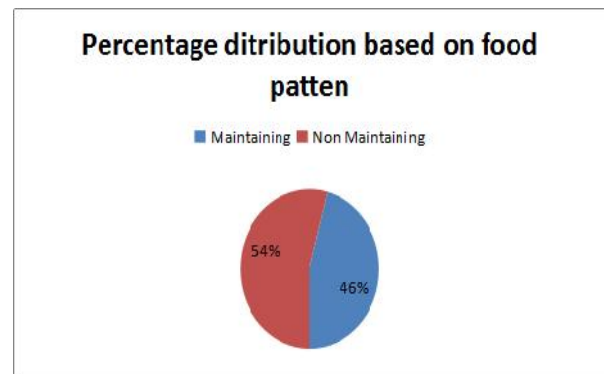


Figure 8: Distribution Patten Based on Maintaining of Food Habit According to the Prescription

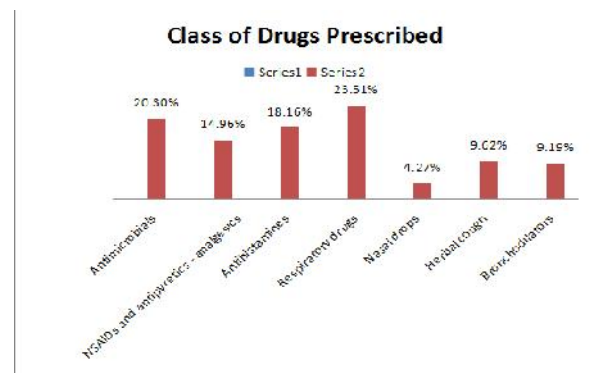


Figure 9: Details of Class of Drugs Prescribed in Upper respiratory tract infections

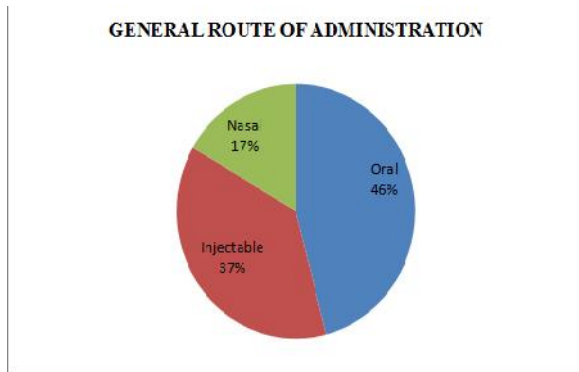


Figure 10: shows that 55 (45.83 %) drugs were prescribed by oral route, followed by 45 (37.35 %) drugs as injectables and 20 (16.6 %) drugs as nasal delivery.

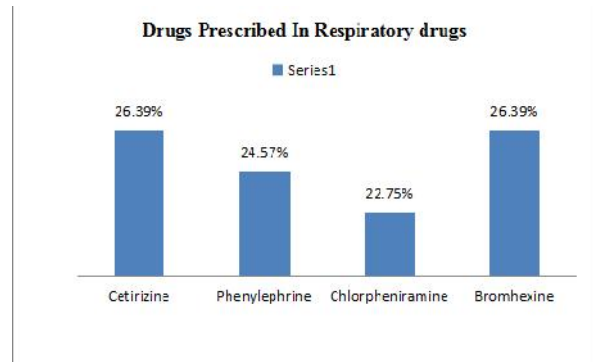


Figure 14: Drugs Prescribed In Respiratory drugs

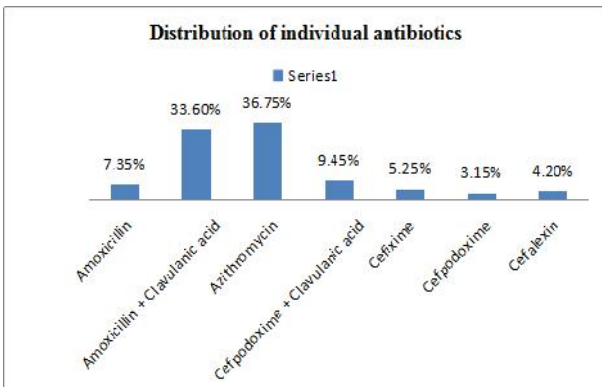


Figure 11: Distribution of individual antibiotics

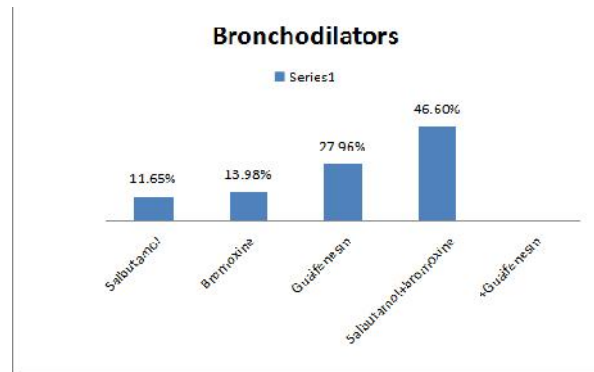


Figure 15: Drugs Prescribed in Bronchodilators

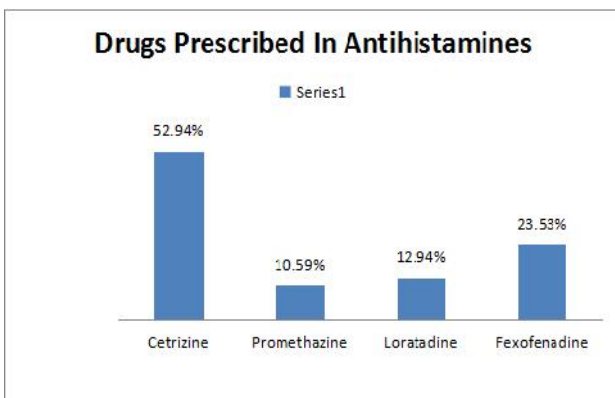


Figure 12: Drugs Prescribed In Antihistamines

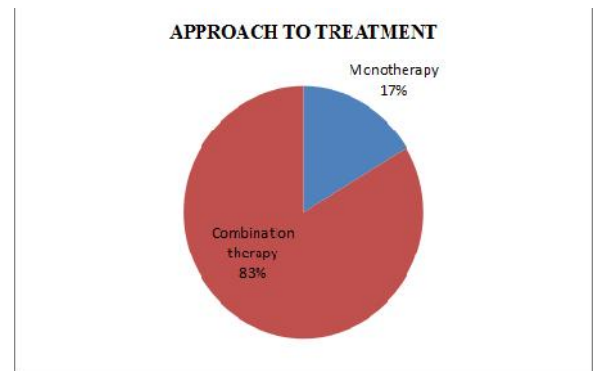


Figure 16: Approach to Treatment

Figure 16 shows that more number of patients were treated with combination therapy 100 (83.4 %) followed by Monotherapy 20 (16.7%)

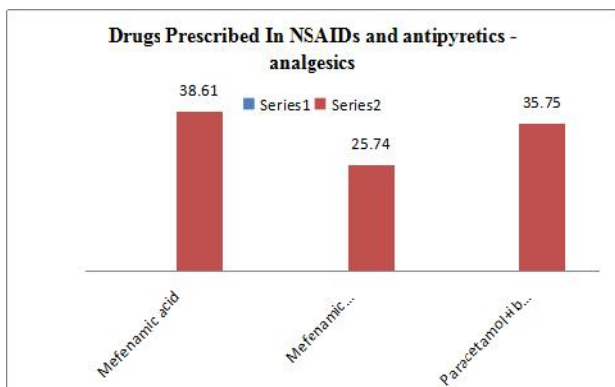


Figure 13: Drugs Prescribed in NSAIDs and antipyretics - analgesics

Discussion

Upper respiratory tract infection (URI) is a nonspecific term used to describe acute infections involving the nose, paranasal sinuses, pharynx, larynx, trachea, and bronchi. The prototype is the illness known as the *common cold*, which is discussed here, in addition to pharyngitis, sinusitis and tracheobronchitis. Influenza is a systemic illness that involves the upper respiratory tract and should be differentiated from other URIs. This study aim to evaluate prevalence rate of Upper respiratory tract infection in males and females and the prescription pattern for Upper respiratory tract infection patient. In our study the prevalence of Upper respiratory tract infection was high in males in percentage of 60 % (n-120) when compared to that

of female 40 % (n=48). Males have predominance in the study population with the results of various studies in India.

The present study indicates the general trend of administration of drugs and comorbid illness drugs treating in the Tuberculosis & Respiratory Department ward of hospital. Demographic characteristics showed that out of 120 patients, administration of drugs, to male were 72 (60 %) and female were 48 (40%) and the maximum distribution of use of drugs were administered in the patients between the age group of 1-5 years age (42.33 %) and followed by 6- 10 years (20.75 %), 10-30 years (14.94), 30-60 years (14.17) and of above 60 (7.50 %). There was high prevalence in 1-5 years due to the lack of personal health care.

However the pattern of Tuberculosis & Respiratory Department drug utilization most common therapy in which the oral Tuberculosis & Respiratory Department drugs prescribed was combination therapy at the rate of 100 (83.4%) followed by mono therapy 20 (16.6 %) respectively. Distribution of the patients based on smoking habit was found to be smoker of 11 % and the non smoker was 89 %. The main reason for reduce in the smoker case is due to increase in children number and female in the case subject. Based on the exercise patten subject were report the high in no exercises with the percentage of 77%, followed by other exercises 13% and waking 10%.

In this study the classes of drugs prescribed were Antimicrobials 95 (20.30 %), NSAIDs and antipyretics - analgesics 70 (14.96 %), Antihistamines 85 (18.16 %), Respiratory drugs 110 (23.51), Nasal drops 20 (4.27), Herbal cough/cold preparations 45 (9.62) and Bronchodilators 43 (9.19%).

The results revealed that Respiratory drugs 110 (23.51) were the choice of drugs prescribed in patients followed by Antimicrobials in 95 (20.30 %) patients. In case of route of administration it's observed in the study that 55 (45.83 %) drugs were prescribed by oral route, followed by 45 (37.35 %) drugs as injectables and 20 (16.6 %) drugs as topical.

Frequency of individual antimicrobials for specific diagnosis such as Common cold, Otitis media, Laryngitis, Nonspecific URTI , Sinusitis, Rhinitis and Nonspecific URTI with PND. The drugs used are Amoxicillin, Amoxicillin+Clavulanic acid, Azithromycin, Cefpodoxime +Clavulanic acid, Cefixime, Cefpodoxime, Cefalexin. Among this Azithromycin was maximum prescribed in Upper respiratory tract infection with the percentage of 35 (36.75 %) and the minimum prescribed in Upper respiratory tract infection was Cefalexin with the percentage of 4 (4.2 %).

In case of antihistamines, Cetirizine maximum prescribed in Upper respiratory tract infection with the percentage of 45 (52.94%) and the minimum prescribed in Upper respiratory tract infection was Promethazine with the percentage of 9 (10.59%). In NSAIDs and antipyretics - analgesics Prescribed Mefenamic acid 27 (38.61%) is high and low in Mefenamic acid + Paracetamol 18 (25.74). Respiratory drugs are highest drug prescribed in Upper respiratory tract infection.

In respiratory drugs Cetirizine and Bromhexine 29 (26.39%). In Bronchodilators Salbutamol + bromoxine + Guaifenesin was maximum prescribed in Upper respiratory tract infection and the results are shown in table and table. The study shows that more number of patients were treated with combination therapy 100 (83.4 %) followed by Monotherapy 20 (16.7 %).

A prospective drug utilization study is considered to be one of the most effective methods to assess and evaluate the prescribing pattern and help to promote rational use of drugs in patients with Upper respiratory tract infection treatment may be initiated with monotherapy followed by early intervention with a combination therapy. In our study combination therapy secured highest utilization percentage 144 (72 %) among all Upper respiratory tract infection. Finally, the establishment of therapeutic guidelines, a constant monitoring of Upper respiratory tract infection condition of a patient reduces the threat and improves quality of life.

Table 1: Patient Demographic Characteristic (Sex and age wise Distribution)

S.No	Patient characteristics	Number of cases (N=120)		Percentage (%)
	Age in Years	Male (n=72)	Female (n=48)	Distribution
1	1-5 years	30	21	42.33%
2	6-10 years	15	10	20.75%
3	10-30 years	10	8	14.94%
4	30-60 years	12	5	14.17%
5	Above 60	5	4	7.50%
Total		72	48	100
Gender wise Percentage Distribution				
1	Male	n=72	60 %	
2	Female	n=48	40 %	

Table 2: Distribution of the Patients Based on Smoking Habit

S.NO	Types (male and female)	Percentage
1	Smoker	11 %
2	Non Smoker	89 %

Table 3: Distribution Based on Exercise Patten

S.NO	Types of exercises	Percentage (%)
1	Walking	10
2	other exercises	13
3	No exercises	77
Total		100

Table 4: Distribution Patten Based on Maintaining of Food Habit According To the Prescription

S.No	Types	Percentage
1	Maintaining	46 %
2	Non Maintaining	54 %

Table 5: Classes of Drugs Prescribed in Upper respiratory tract infections

S.No	Classes of Drugs	Frequency (N= 468)	Percentage (%)
1	Antimicrobials	95	20.30
2	NSAIDs and antipyretics - analgesics	70	14.96
3	Antihistamines	85	18.16
4	Respiratory drugs	110	23.51
5	Nasal drops	20	4.27
6	Herbal cough/cold preparations	45	9.62
7	Bronchodilators	43	9.19
Total		468	100

Table 6: General Route of Administration

S.NO	Route of administration	No. of patients (n= 120)	Percentage (%)
1	Oral	55	45.83 %
2	Injectable	45	37.35 %
3	Nasal	20	16.6 %
Total		120	100

Table 8: Distribution of individual antibiotics

S.NO	Antibiotics	No of Patients (n=95)	Percentage (%)
1	Amoxicillin	7	7.35
2	Amoxicillin + Clavulanic acid	32	33.6
3	Azithromycin	35	36.75
4	Cefpodoxime + Clavulanic acid	9	9.45
5	Cefixime	5	5.25
6	Cefpodoxime	3	3.15
7	Cefalexin	4	4.2
Total		95	100

Table 9: Drugs Prescribed In Antihistamines

S.NO	Antihistamines	No of Patients (n=85)	Percentage (%)
1	Cetirizine	45	52.94
2	Promethazine	9	10.59
3	Loratadine	11	12.94
4	Fexofenadine	20	23.53
Total		85	100

Table 10: Drugs Prescribed In NSAIDs and antipyretics - analgesics

S.NO	NSAIDs and antipyretics - analgesics	No of Patients (n=70)	Percentage (%)
1	Mefenamic acid	27	38.61
2	Mefenamic acid+Paracetamol	18	25.74
3	Paracetamol+ibuprofen	25	35.75
Total		70	100

Table no 11: Drugs Prescribed In Respiratory drugs

S.NO	Respiratory drugs	No of Patients (n=110)	Percentage (%)
1	Cetirizine	29	26.39 %
2	Phenylephrine	27	24.57 %
3	Chlorpheniramine	25	22.75 %
4	Bromhexine	29	26.39 %
Total		110	100 %

Table no 12: Drugs Prescribed In Bronchodilators

S.NO	Respiratory drugs	No of Patients (n=43)	Percentage (%)
1	Salbutamol	5	11.65
2	Bromoxine	6	13.98
3	Guaifenesin	12	27.96
4	Salbutamol+bromoxine +Guaifenesin	20	46.6
Total		43	100 %

TABLE 13: APPROACH TO TREATMENT

S.No	Approach to treatment	No. of patients (n=120)	Percentage (%)
1	Monotherapy	20	16.6 %
2	Combination therapy	100	83.4 %
Total		120	100

4. Conclusion

The present study shows that Respiratory drugs are still the preferred treatment of Upper Respiratory Tract infection. 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 1-5 years. Our study revealed that the gender distribution in Upper Respiratory Tract Infection among Pediatrics was found to be more in males, than in female. Antihistamines

are the major drug class prescribed for Upper Respiratory Tract infection in pediatrics. Azithromycin is the antibiotic most prescribed for Upper Respiratory Tract Infection in Pediatrics. The majority of children in this study were in the age group of 1-5 years. Antibiotics are over prescribed for self-limiting URTIs. In conclusion, there is a high rate of inappropriate antibiotic prescription for acute URTIs in the private health care sector. Further studies are needed to determine the population-based rates across the country.

Interventions to decrease inappropriate use in such settings are urgently needed.

5. References

- [1] Meena K Nandimath and Sam Ahuja. Drug Prescribing pattern in Upper Respiratory Tract Infection in Children Aged 1-14 years. *International Journal of Pharma and Bio Sciences* 2012;3(1):299-308.
- [2] M S Akhtar, Divya Vohora et al. Drug Prescribing Practices in Pediatric Department of a North Indian University Teaching Hospital. *Asian Journal of Pharmaceutical and Clinical Research* 2012; 5(1): 146-49.
- [3] Venu Gopal D, Rama Krishna T et al. Prescribing Pattern of Antibiotics in the General Medicine and Pediatrics Departments of a Tertiary care Teaching Hospital. *International Journal of Pharmacy and pharmaceutical Sciences* 2014; 6(2):221-24.
- [4] Jain N, Lodha R and Kabra Sk. *Indian J Pediatr* 2001; 68:1135-1138.
- [5] Kar SS, Pradhan HS, Mohanta GP. Concept of essential medicines and rational use in public health. *Indian J Community Med.* 2010; 35:10-3.
- [6] Promoting Rational Use of Medicines: Core Components-WHO Policy perspectives on medicine, No. 005, September 2002. Essential medicines and Health Products Information Portal. A World Health Organization Resource. [Last accessed on 2014 Apr 22].
- [7] Strom BL, StephanEK, *Pharmacoepidemiology*. 4th ed. Wiley-Blackwell: John Wiley and Sons, English; 2005.
- [8] Patel B, Oza B, Patel K, Malhotra S, Patel V. Pattern of antidiabetic drugs use in type-2 diabetic patients in a medicine outpatient clinic of a tertiary care teaching hospital. *Int J Basic Clin Pharmacol.* 2013; 2: 485-91.