

A Prospective Observational Study of Current Prescription Practice for Respiratory Tract Infections with Evaluation of Signs and Symptoms in Pediatric Patients

Nitin Ladumor¹, Aesha Kakadiya², Priyanka Kosambi³, Vrutika Paneriya⁴,
Dr Steffi John⁵, Dr Jignesh Patel⁶

Abstract: Introduction: According to research, children are one of the groups of people who are most vulnerable to infectious diseases. Children and infants make up a big portion of India's population, making them more susceptible to illness. The most common ailment among them is respiratory illness. A significant contributor to morbidity and mortality are RTIs. The two types of respiratory tract infections are upper and lower respiratory tract infections. Background: According to the World Health Organization (WHO), respiratory infections account for 6% of the total global disease burden. Around 6.6 million, under-five aged children years die each year worldwide. Method: The prospective observational study was conducted over a period of 6 months. Result: A total of 150 prescriptions were analysed in the study, in which, 101(67.33%) were male and 49(32.66%) were female. The pediatric populations between the age group 1 month to 4 years were more prone to respiratory tract infections. In this study, the most commonly diagnosed disease was unspecified URTI. A total of 830 drugs were prescribed. Among the 150 prescription 67 prescriptions prescribed antibiotics. And the most prescribed antibiotic was amoxicillin + potassium clavulanate 39(37.14%). Bronchodilators were prescribed in 79 cases out of 150 prescriptions. Levosalbutamol 50 (50.51%) is the most frequently administered bronchodilator. 37 out of 150 cases required the prescription of steroids. In 118 cases out of 150 were antihistamines prescribed, which contains 37 (43.53%) chlorpheniramine malate and phenylephrine HCl. Prescribed supportive medications that frequently include vitamins, saline nasal spray, antacids, and herbal remedies. The 150 patients were evaluated, and the most prevalent symptoms and signs were discovered to be the common cold and cough (97.33%). Conclusion: The present study was conducted to analyse the drug prescribing pattern in the pediatric department of multispecialty hospital using CDC indicators. Males were more prone to respiratory tract infections and the majority of children in this study were in the age group of 1 month to 4 years. Amoxicillin+ clavulanic acid was the most prescribed antibiotic and paracetamol was the most commonly prescribed antipyretic drug. a mostly prescribed bronchodilator is levosalbutamol. highly prescribed steroids were prednisolone. herbal products (dried ivy leaf extract cough syrup) have also been effective. The average number of drugs prescribed was 5.5. Cough and cold, fever, breathlessness, poor oral intake and wheezing sound is the most commonly seen sign and symptoms.

Keywords: respiratory tract infections, Upper respiratory tract infection (URTI) Lower respiratory tract infection (LRTI) Pediatric, Antibiotic prescribed

Abbreviations

WHO - World Health Organization

CDC - Centers for Disease Control and Prevention ARI - Acute Respiratory Infection

RTI - Respiratory Tract Infections

URTI - Upper Respiratory Tract Infection LRTI - Lower Respiratory Tract Infection RSV - Respiratory Syncytial Virus

WARI - Wheezing Associated Respiratory Infection AMR - Antimicrobial Resistance

1. Introduction

Recurrent respiratory tract infections are one of the most frequent reasons for pediatric visits and hospitalization. Causes of this pathology are multiple ranging from congenital to acquired and local to general. Immune deficiencies are considered as underlying conditions predisposing to this pathology. Recurrent respiratory infections have multiple etiologies. Children are not yet immune to the viruses that usually cause them and they all have low immunity. Prescription patterns explain the profile of the drug use and drug of choice to improve patient health with compliance with the specific guideline. The assessment of drug prescription patterns is important for clinical, educational, and economic reasons.

Respiratory tract infections in pediatrics:

Pediatrics is known to be one of the most vulnerable groups of the population affected by infectious diseases [2]. The large population of India consists of children and infants, and they are more prone to frequent illness the common illness is the respiratory tract [3]. RTIs are a major cause of morbidity and mortality [3, 4].

Respiratory tract infections are classified as upper and lower respiratory tract infections.

The upper respiratory tract comprises the airways from the nostrils to the vocal cords in the larynx, plus the paranasal sinuses and the middle ear [2, 3, 5].

Upper respiratory tract infection (URTI) includes the common cold, laryngitis, pharyngitis, tonsillitis, acute rhinitis, and acute otitis [3, 5].

The lower respiratory tract includes the continuation of the airways from the trachea and bronchi to the bronchioles and the alveoli [3].

Lower respiratory tract infection (LRTI) includes acute bronchitis, bronchiolitis, and pneumonia. [3, 5]

Common symptoms of RTIs are fever, running nose (rhinorrhoea), cough, sore throat, earache, and fatigue [5].

Volume 12 Issue 8, August 2023

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

For the treatment of RTIs, most of the guidelines are based on a etiology, but in most developing countries, including India, the therapy is usually based on empirical therapy.

2. Literature Review

1) **Nivil Joseph. et al** Prescribing pattern of drugs in upper respiratory tract infections in pediatric outpatients. **Result:** A total of 120 patients aged less than 13 years were collected from the pediatric outpatient department of a tertiary care teaching hospital. The most common diagnosis was nonspecific upper respiratory tract infections (49.1%). Only 10 drugs were prescribed from the essential drug list. Amongst all drug classes, respiratory drugs were prescribed in more (29%), antihistamines (24.6%), antimicrobials (24.3%), non-steroidal anti-inflammatory drugs (18%) and nasal drops (4.1%). In antimicrobials, amoxicillin + clavulanic acid (45.8%) was the highly prescribed combination. The main drug interactions were between chlorpheniramine and terbutaline.

2) **Anagha V Naik. et al** Drug Prescription Pattern in Paediatric Respiratory Tract Infections. **Result:** A total of 211 prescriptions were analysed in the study, in which, 124(58.8%) patients were male and 87(41.2%) were female. The pediatric population of the age group 1-3 years were more prone to respiratory tract infections and the common disease diagnosed was unspecified lower respiratory tract infection. A total of 885 drugs were prescribed and the most commonly prescribed drug was found to be paracetamol-143(67.8%), followed by salbutamol-128 (60.66%), amoxicillin+ clavulanic acid-93 (44.1%) and budesonide-77 (36.5%). 261(29.49%) oral, 224(25.31%) inhalations, 231(26.1%) injectables were prescribed. 158 fixed-dose combinations were prescribed. Drugs per prescription were found to be 4.1. 14.01% of drugs were prescribed with generic names and 77.4% were prescribed from the WHO model list of essential drugs. The percentage of antibiotics prescribed was 93% and injection was 84.36%. The consultation time taken by the physician ranged between 8-12 minutes and the time taken by the pharmacist to dispense drugs was 6-14 minutes.

3) **Mrinali Thakur. et al** Analysis of Prescribing Patterns in Paediatric Respiratory Tract Infections with the Focus on Antimicrobial Use, Adverse Effects and Cost of Drug Therapy. **Result:** Out of a total of 74 patients, 54.05% were in the age group of <1 year an 67.57% were male. The most common diagnosis was pneumonia (48.65%). The average number of drugs per patient was 7.25 ± 1.57 (range 3 to 16) Most common drug groups prescribed were antibacterial (100%), analgesic/antipyretics (95.94%) and respiratory drugs (86.49%). Among the antibacterial, amoxicillin clavulanic acid (90.54%) and ceftriaxone (77.77%) were frequently prescribed. Among respiratory medicines, antihistamines and salbutamol were prescribed to 85.13% and 55.40% of patients respectively. 56.81% of drugs were prescribed by their generic name and 75% of drugs were prescribed from WHO-EML.

4) **Sujata Jadhav. et al** Prescribing Pattern of Drugs in Acute Respiratory Tract Infection in Children aged 1 To 5 Years at Tertiary Care Teaching Hospital. **Result:** they

included children from one to five years of age, diagnosed with ARTI and evaluated 298 prescriptions given to these children. Analysis of these prescriptions was done as well as they are compared with WHO prescription indicators. Cough (96%), fever (93%) and rhinitis (82.5%) were common symptoms observed, but sore throat, earache and breathlessness were also present in these children. The average number of drugs prescribed was 4.1/per patient. Following drugs were prescribed, Antipyretics 98.3%, antimicrobials 91.3%, antihistaminic and cough syrups 75.2%, Leukotriene antagonist in 25.1% of patients, Vitamin B complex 11% and glucocorticoids 4.6%. All drugs were prescribed by brand names and not by generic names. 97.3% of prescribed drugs were from the national list of essential medicine.

5) **Hania Hashmi. et al** Prescribing patterns for upper respiratory tract infections: a prescription-review of primary care practice in Quetta, Pakistan and the implications. **Result:** Over the 3 months, 50,705 prescriptions were screened and analysed according to the established inclusion and exclusion criteria. A total of 4,126 (8.13%) URTI prescriptions met the inclusion criteria, of which 2,880 (69.80%) prescriptions contained antibiotics Among all antibiotics, penicillin (Amoxicillin + Clavulanate) was the most prescribed antibiotic, constituting 1,323 (45.9%) of total antibiotics prescribed for all cases, followed by the Macrolide group 527 (18.2%).

6) **Hemamalini MB. et al** Prescribing pattern of antibiotics in lower respiratory tract infection among children aged less than 5 years. **Result:** A total of 250 inpatient case records of children with LRTI were analysed. In this study, less than 1 year of children constituted the highest percentage (59.2%). 56.8% were males and 43.2% were females. A total of 1045 drugs were prescribed in 250 prescriptions (4.18 drugs/prescription). Bronchiolitis (41.6%) was the most common diagnosis followed by Bronchopneumonia (33.6%). 32.77% of patients receive one antibiotic, 39.49% received 2 antibiotics and 27.73% of patients received 3 antibiotics. Most commonly prescribed antibiotic was Amoxicillin+ clavulanic acid (58%), followed by Amikacin (57%) and Ceftriaxone (53%).

7) **Dr D. Sharad Gedam. et al** Drug prescription pattern in the paediatric outpatient department in a teaching hospital in central India. **Result:** A prospective cross-sectional study was conducted for four months. A total of 645 prescriptions were collected and analysed. The average number of drugs per prescription was 1.69. The most common reason for Out Patient Department visits was Upper Respiratory Tract Infection (50.07%) followed by Acute Gastroenteritis (20.94 %). The most frequently prescribed drug classes were Antipyretics (44.18 %) followed by Antibiotics (37.2 %) & Antihistaminic (29 %). The most frequently prescribed antibiotics were ofloxacin & metronidazole combination (25%) followed by cefpodoxime (22.83 %). Most drugs are prescribed orally (99.32 %). The most common drug formulation was syrup (62.19 %) followed by drops (13.87 %).

8) **C N Gupta. et al** Prescription pattern of antibiotics in respiratory disorders in a tertiary care teaching hospital in the

Eastern part of India. **Result:** COPD, bronchial asthma, pneumonia and ARIs were the most frequent respiratory illnesses among patients attended Medicine OPD. The most common antibiotics prescribed were co-amoxiclav, ceftriaxone, moxifloxacin, clarithromycin, azithromycin and aminoglycosides.

9) Soumya Patra. et al Antibiotic prescribing pattern in paediatric patients with first-time wheezing. **Result:** The mean age of the study groups was 5.8 (+/- 5.1) months. Among the clinical and investigational parameters, the presence of predominant crackles and abnormalities on radiographs were the major determinants for antibiotic usage. There were no significant differences in the outcome between these groups.

10) Kafle D. et al Prescribing Pattern of Antibiotics in Respiratory Tract Infections in the Paediatric Indoor Patients at Manipal Teaching Hospital. **Result:** Among 170 patients, a maximum (43.3%) was in the age group of 1 day to 11 months with male predominance (74.1%). Bronchopneumonia was the most common respiratory tract infection (51.8%) followed by bronchiolitis (13%). Chest x-ray was done in all patients however blood culture was done only in 60.6% and an antibiotic sensitivity test (27.6%) before prescribing antibiotics. Cefotaxime was prescribed in maximum patients (62.4%) followed by ceftriaxone (17.1%). All the patients received at least one antibiotic by the i.v route during the hospital stay.

11) Pratibha Omkar. et al A study on evaluation of the prescription pattern of drugs in upper respiratory tract infections in children at a tertiary care hospital. **Result:** The most common clinical presentation was fever and cough. The common diagnosis noted in the study were non-specific URTI, tonsillitis, and sinusitis. Antipyretics (99.6%) and antibiotics (52%) were the most frequently prescribed drugs among the patients. Amoxicillin-clavulanic acid and cephalosporins were the common antibiotics prescribed. Beta- haemolytic streptococci were the common microbe isolated among the patients tested to know the aetiology.

12) Zhitong Zhanga. et al Antibiotic prescribing for upper respiratory infections among children in rural China: a cross-sectional study of outpatient prescriptions. **Result:** The antibiotic prescription rate was higher in township hospitals (593/877, 68%) compared to county hospitals (2736/8166, 34%) and village clinics (96/297, 32%) ($p < 0.001$). Among prescriptions containing antibiotics, county hospitals were found to have the highest use rate of broad-spectrum antibiotics (82 vs. 57% [township], vs 54% [village], $p < 0.001$), injectable antibiotics (65 vs 43% [township], vs 33% [village], $p < 0.001$) and multiple antibiotics (47 vs 15% [township], vs 0% [village], $p < 0.001$). Logistic regression showed that the likelihood of prescribing an antibiotic was significantly associated with patients being 6–14 years old compared with being 2–5 years old (adjusted odds ratio [aOR] = 1.3, 95%CI 1.2–1.5)

13) Rebecca Hayes. et al Antibiotic Prescriptions for Upper Respiratory Infections in a Paediatric Office Versus an Urgent Care Centre. **Result:** Paediatricians who were high antibiotic prescribers in the office setting were also high

prescribers in the urgent care. The highest prescribing physicians prescribed the appropriate recommended antibiotics for a particular diagnosis the lowest percentage of the time. Efforts to promote antimicrobial stewardship should be directed towards the individual physician and not toward the location where the patients are being evaluated.

14) Mona M. Ahmed. et al study of prescription patterns of antibiotics in treating lower respiratory tract infections at Sohag Chest Hospital. **Result:** Forty per cent of the physicians considered textbooks and thirty per cent of the physicians considered pharmaceutical companies as a main source of information about antibiotics. Ninety-five per cent of physicians used to prescribe empirically. Sixty per cent of physicians considered their own experience as a reference for empirical AB prescription. Almost all of the physicians considered the presence of co-morbid diseases during AB prescription. Eighty per cent of physicians considered the severity of infection as the most important factor affecting the route of AB administration. The results also showed that forty-five per cent of physicians considered quinolones as the most common AB prescribed for empirical therapy. Fifty per cent of physicians considered the 4–7 day duration for empirical therapy.

Rationale

Reason: Age groups play an important role in the overall prevalence of the LRTIs in children. Infants and young children have a higher risk of developing acute respiratory failure than adults because their respiratory systems are not fully developed. Most of the time, viruses cause upper respiratory infections. Viruses don't respond to antibiotics. You can most likely treat the symptoms at home through pain relievers, rest and drinking fluids. The majority (80–90%) of these infections are caused by viruses. Uncomplicated upper respiratory tract infections (URTIs) are usually self-limiting and do not require antibiotics.

Excessive use of antibiotics may lead to AMR in Children, especially those living in low-resource settings with limited access to health services face an even greater risk. Lack of safe water, poor sanitary conditions and hygiene practices, and inadequate infection control, further enables the spread of AMR. This study aims to ascertain the average number of drugs prescribed, the optimal quantity of drugs to use, and the rationality of prescriptions. This type of research would show the pattern of existing prescribing practices.

Significance and need:

- Providing Economical treatment.
- Minimize hospital stay for pediatric patients.
- Improve quality of life of child.
- Minimize antibiotic resistance in pediatric patients.
- To optimize the use of antimicrobial medicines.
- To improve awareness and understanding of antimicrobial resistance.

3. Materials and Methods

A prospective observational study was carried out in the paediatrics department of Nirmal multispeciality Hospital,

Surat (Gujarat), for six months. Ethical approval was obtained from the IEC. 150 patients fulfilling the inclusion and exclusion criteria were collected, assessed, compiled, and analysed. Sample size was selected who were aged between 1 month to 12 years diagnosed under the category of RTI. The information such as demographics data age, sex, gender, height, weight, UHID number, date, unit, and ward was recorded. the length of the hospital stay, the number of drug prescribed, the diagnosis and the specifics of the complaints made upon admission were all documented. CDC guidelines were used for evaluating these study data.

4. Statistics and Result

1) Gender-wise distribution(n=150):

A total of 150 prescriptions were analysed and out of which 101(67.33%) were male and 49(32.66%) were female. The incidence of RTI was found more in males as compared to females (graph.1).

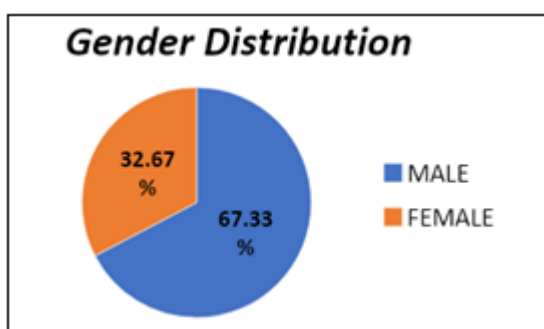


Figure 9: Pie chart- Gender Distribution

2) Age-wise distribution:

Patients were grouped into 3 groups based on their age.

107(71.33%) patients were found to be in the age group of 1-month years, 34(22.66%) were in the group of 4-8 years, 9(6%) were in the group of 8 -12 years. (Graph. 2).

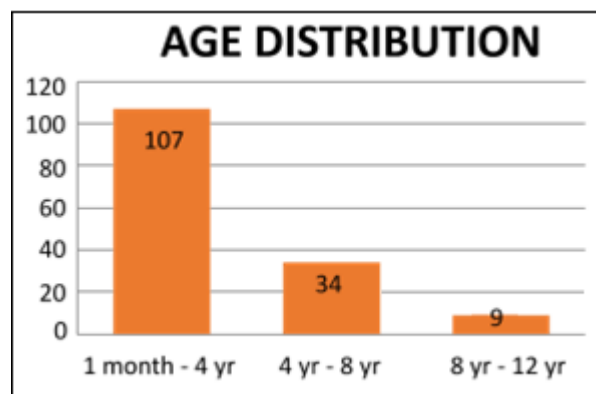


Figure 10: Bar Graph – Age-wise Distribution

3) Respiratory infections among RTI patients:

In this study the most commonly diagnosed disease was unspecified URTI, which was found in 53(35.33%) patients, followed by wheeze-associated respiratory infection (WARI) in 49(32.67%) patients, pneumonia in 17(11.33%) patients, unspecified LRTI in 13(8.67%) patients, then bronchiolitis in 9(6 %)patients, bronchitis in 4(2.67%) patients, allergic cough in 2(1.33%), pertussis in 1(0.67%) patient, otitis media in 1(0.67%), tonsilitis in 1(0.6%) patient.

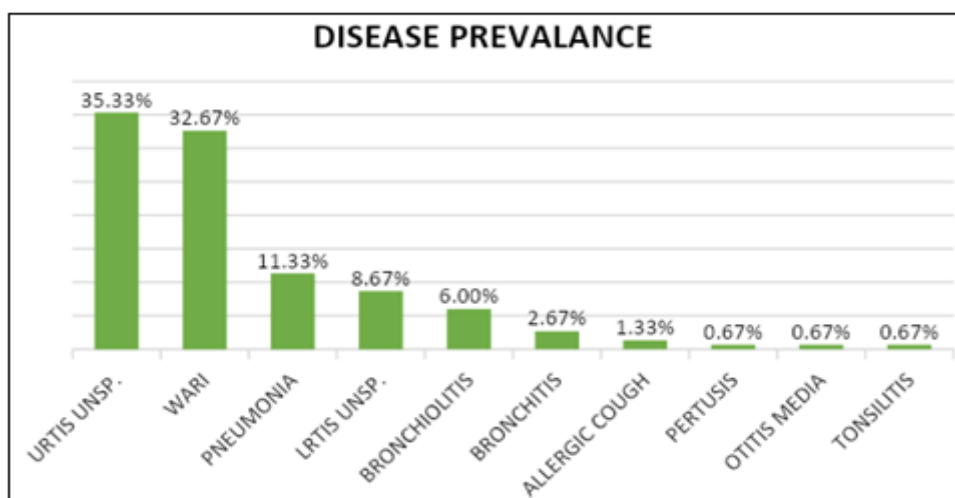


Figure 11: Bar Graph – Disease Prevalance

4) Length of hospital stay of RTI patients:

Among 79 patients admitted with RTI in the paediatrics department 56(70.89%) patients stayed for 1-3 days,

23(29.11%) patients stayed for 4-7days, and 0(0.00%) patients stayed for more than 7 day Table 1: Length of hospital stay of RTI patients.

Length of hospital stay	Frequency	Percentage
1 day to 3 days	56	70.89%
4-day to 7 days	23	29.11%
More than 7 days	0	0.00%

5) Drugs prescribed per encounter:

Out of 150 prescriptions analysed, 46 were prescribed with 1 to 3 drugs, 52 were prescribed with 4 to 6 drugs and 52 prescriptions were prescribed with more than 7 drugs.

Table 2: Drug prescribed per encounter

Drug prescribe per encounter	OPD	WARD	ICU	Total
1 to 3 drugs	44	1	1	46
4 to 6 drugs	24	20	8	52
>7 drugs	3	19	30	52

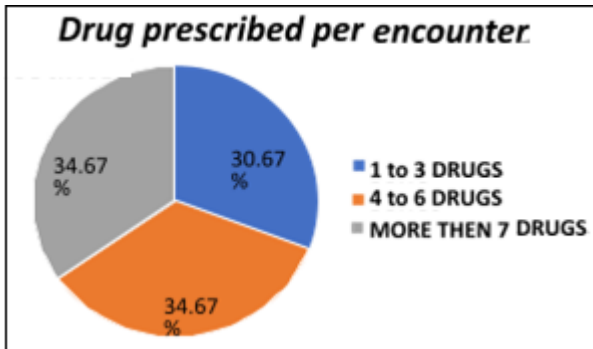


Figure 12: Pie Chart – Drug Prescribed per encounter

6) Route of the drug administration:

Out of 830 drugs prescribed, 517(62.28%) were oral formulation, 191(23.01%) were injectable, 122(14.69%) were per nasal.

Table 3: Different formulations prescribed among the study population

Formulations	Frequency	Percentage
Oral	517	62.28%
Injectable	191	23.01%
Per nasal	122	14.69%

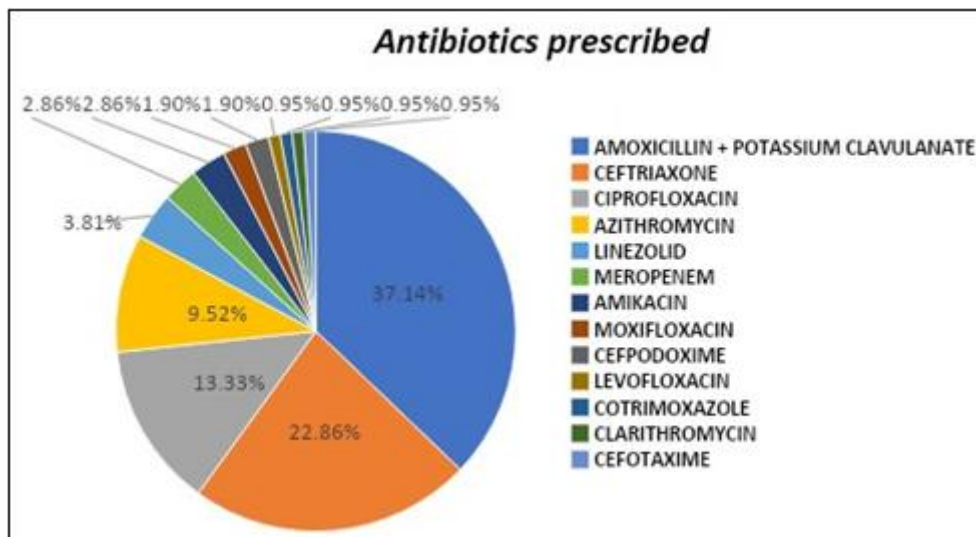


Figure 13: Pie Chart - Antibiotics prescribed

9) Pro-biotics prescribed in RTIs :

Of 150 cases 6 cases prescribed probiotics which in 5 cases prescribed Lactobicillus and in 1 case prescribed Enterogermina.

10) Bronchodilator Prescribed in RTI :

From 150 prescriptions in 79 prescription were prescribed

7) Different class of the drug

In this study, various drug classes that were prescribed are listed below.

Table 4: Different class of the drug

Drug class	Out patients (n=71)	In patients (n=79)	Total (n=150)
Antibiotics	6	61	67
Bronchodilator	17	62	79
Steroids	5	32	37
Antihistamine	61	57	118
PPIs	0	51	51
herbal	20	9	29
Pro-biotics	0	6	6

8) Antibiotic prescribed for RTI:

From 150 prescriptions in 67 cases prescribed antibiotics. In which mostly prescribed antibiotic is Amoxicillin + Potassium clavulanate 39(37.14%), Ceftriaxone 24(22.86%), Ciprofloxacin 14(13.33%), Azithromycin 10(9.52%), Linezolid 4(3.81%), Meropenem 3(2.86%), Amikacin 3(2.86%), Moxifloxacin 2(1.90%), Cefpodoxime 2(1.90%), Cefotaxime 1(0.95%), Cotrimoxazole 1(0.95%), Levofloxacin 1(0.95%), Clarithromycin 1(0.95%). Out of 150 study subjects, 5 were from opd (outpatient) and 62 were from ward and ICU (in-patient) prescribed antibiotics.

bronchodilators. In which mostly prescribed bronchodilator is Levosalbutamol 50(50.51%), Ipratropium with Levosalbutamol 32(32.32%), Salbutamol 16(16.16%), and Salmeterol 1(1.01%). And mostly combine drugs in bronchodilators in Ipratropium with Levosalbutamol.

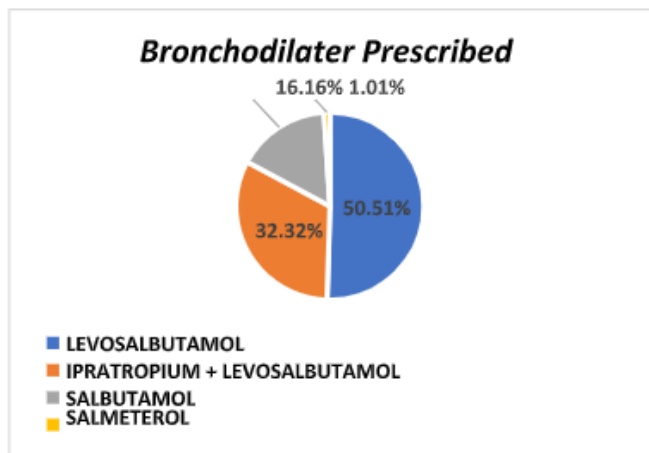


Figure 14: Pie Chart – Bronchodilator Prescribed

11) Steroids prescribed in RTI :

Out of 150 prescriptions 37 prescriptions were prescribed with steroids. In which ICU cases 23(62.16%), ward 9(24.32%), and OPD 5(13.51%) prescribed steroids. In all 37cases, a total of 51 steroids were prescribed. In all of these mostly prescribed steroids was Prednisolone 23(45.10%), Dexamethasone 10(19.61), Methylprednisolone 9(17.65%), Budesonide 5(9.80%), Hydrocortisone 2(3.92%), Mometasone 1(1.96%), Deflazacort 1(1.96%).

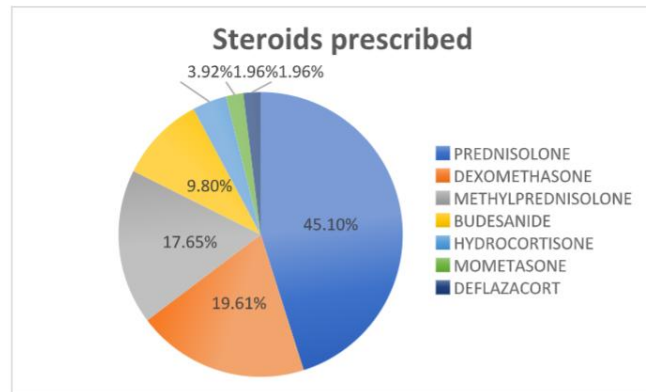


Figure 15: Pie Chart – Steroid

12) Antihistamine prescribed :

From 150 cases in 118 cases, a total of 85 antihistamines are prescribed. In which Phenylephrine HCL with Chlorpheniramine malate 37(43.53%), Levocetirizine with Montelukast 23(27.06%), Levocitizine 19(22.35%), Fexofenadine HCL 2(2.35%), Ranitidine 2(2.35%), Hydroxyzine hcl 1(1.18%), Cetirizine with Ambroxol 1(1.18%).

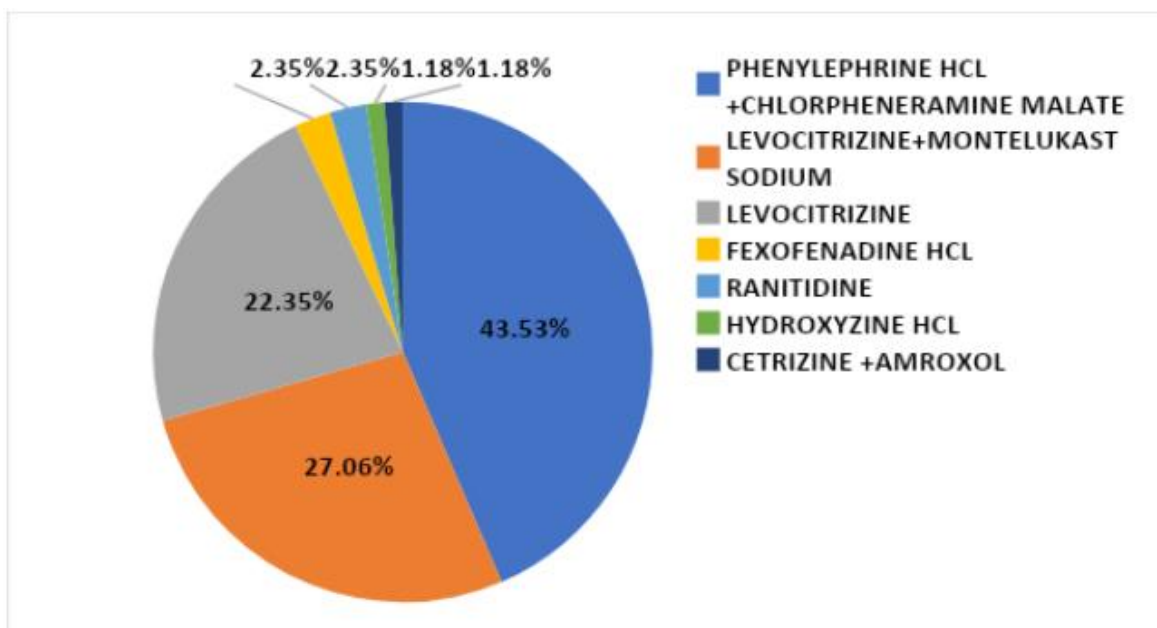


Figure 16: Pie Chart - Antihistamine Prescribed

13) Supportive medication:

From 150 cases in many cases prescribe supportive medication including vitamins, nasal spray with saline, herbals and antacids.

Table 5: Supportive medications

Drug of the class name	In patients	Outpatients	Total	Percentage
Vitamins	19	23	42	28 %
Herbal	9	20	29	19.33 %
Antacids	51	0	51	34 %
Nasal saline	12	9	21	14 %

14) Assessment of sing and symptoms:

In the assessment of signs and symptoms of 150 cases of cold and cough assess in (97.33%), fever (80.67%), weakness (8%), vomiting (16.67%), loose stool (8%), poor oral intake (16%), breathlessness (10%), wheezing (7.33%), sneezing(6%) and other symptoms (40%). Other included passing hard stool, Redness in mouth, Throat pain, Runny nose, Headache, Body pain etc.

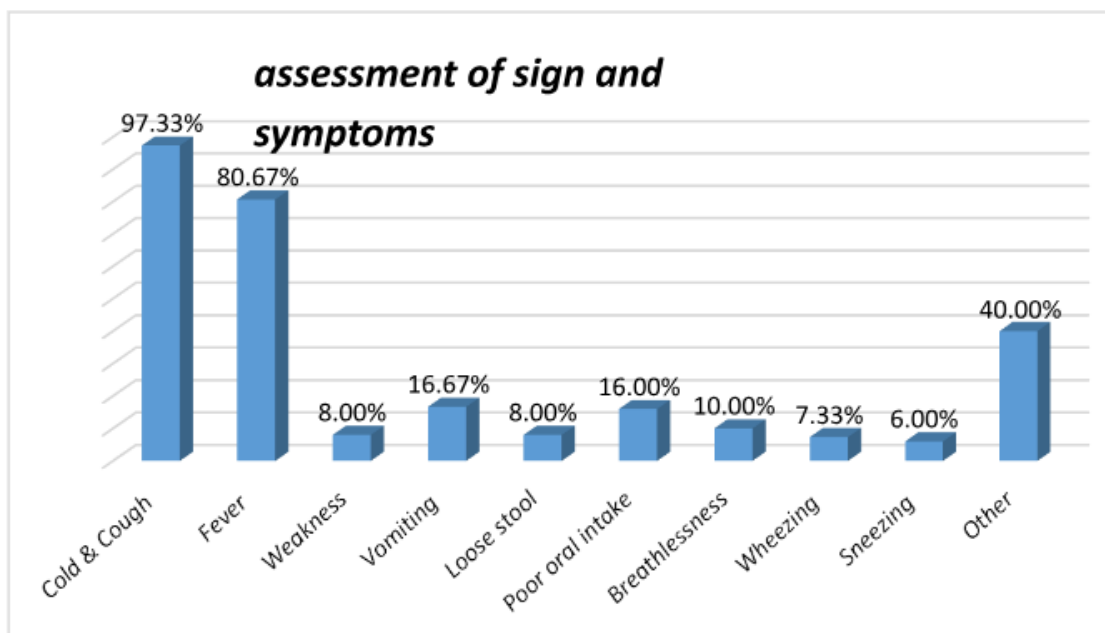


Figure 17: Bar Chart - Assessment of sign and symptoms

15) CDC indicators:

CDC Indicators used in the study of the paediatric population were prescribing and patient care indicators. In prescribing indicators, the average number of drugs prescribed per prescription was 5.5. The percentage of generic drugs prescribed in 150 prescriptions was 11.33%, the percentage of antibiotics prescribed was 44.66% and the percentage of

injections prescribed was 48%. The percentage of antibiotics drugs prescribed according to CDC indicators for children was 58.20% as AMOXICILLIN + POTASSIUM CLAVULANATE is the firstline treatment as antibiotics for RTIs. average consultation time taken per prescription was 8.56 minutes with a range of 7-10 minute

Table 6: Indicators

Indicators	Data	
Prescribing Indicators	The total number of prescriptions analysed	150
	The average number of drugs	5.5
	Percentage of drugs prescribed by generic name	11.33%
	Percentage of antibiotics prescribed	44.66%
Fixed dosage combination	Percentage of injections prescribed	48%
	antibiotics	1
	bronchodilator	1
Patient care indicators	antihistamine	3
	Average consultation time	8.56 (7-10) min
Facility indicators	Availability of essential drug list/hospital formulary	Yes
	Availability of clinical guidelines	Yes
Complementary indicators	Percentage of patients treated without drugs	Nil

5. Limitations

- 1) Prescribing of Antibiotics can Change on the bases of empirical therapy.
- 2) The treatment plan may be changed with other complications.

6. Conclusion

The present study was conducted to analyse the drug prescribing pattern in the paediatric department of a multispeciality hospital using CDC indicators. Males were more prone to respiratory tract infections and the majority of children in this study were in the age group of 1 month to 4 years.

Amoxicillin+ Clavulanic acid was the most prescribed

antibiotic and Paracetamol was the most commonly prescribed antipyretics drug. CDC indicators for children was 58.20% as AMOXICILLIN + POTASSIUM CLAVULANATE is the firstline treatment as antibiotics for RTIs. Out of 71 prescription from OPD antibiotics prescribed in only 6 prescription which indicates rational use of it and no need of antibiotics.

The mostly prescribed bronchodilator is Levosalbutamol. highly prescribed steroids were Prednisolone. Herbal products (dried ivy leaf extract cough syrup) have also been effective. Cough and cold, fever, breathlessness, poor oral intake and wheezing sound were the most commonly seen sign and symptoms.

In conclusion, the prospective observational study of current prescription practice for respiratory tract infections with an

evaluation of signs and symptoms in pediatric patients has shed light on important considerations for medical professionals when treating this patient population. The study has provided valuable insights into the current prescription practices for respiratory tract infections in children and the potential for overuse of antibiotics.

Overall, the study underscores the importance of continued research in this area to improve the care and outcomes for pediatric patient.

References

- [1] Parthasarathy A, Menon PS, Agarwal RK, editors. IAP textbook of pediatrics. 4th ed. New Delhi: Jaypee; 2009.212-218.
- [2] Joseph N, Bharathi DR, Sreenivasa B, Nataraj GR, George N, Safdar M. Prescribing pattern of drugs in upper respiratory tract infections in pediatric outpatients. *Int J Contemp Pediatr*. 2016; 3:1006-8.
- [3] Anagha V Naik, Hebsiba Joseph, Nidhina Mathew, Sumanth Shetty, Rajesh KS, Bharath Raj. KC, Juno J Joel, Gururaj MP, Nandakumar UP. Drug Prescription Pattern in Pediatric Respiratory Tract. *Res J Pharm Technol*. 2019;12(3):1280-4.
- [4] Thakur M, Shah R, Dave D, Buch JG. Analysis of prescribing patterns in pediatric respiratory tract infections with a focus on antimicrobial use, adverse effects, and cost of drug therapy. *J Pharm Pharmacology Research*; 2020(4 (1)):001-14
- [5] Jadhav S, Khandelwal C. Prescribing Pattern of Drugs in Acute respiratory tract Infection in Children aged 1 to 5 years at Tertiary Care Teaching Hospital. *Biomed Pharmacol J*. 2018;11(4):1903-11. doi: 10.13005/bpj/1563.
- [6] Hashmi H, Sasoli NA, Sadiq A, Raziq A, Batool F, Raza S et al. Prescribing patterns for upper respiratory tract infections: A prescription-review of primary care practice in Quetta, Pakistan and the implications. *Front Public Health*. November 2021;9 | Article 787933:787933. doi 10.3389/fpubh.2021.787933, PMID 34869195.
- [7] Hemamalini MB, Rekha MB, Basavaraj Bhandari AE. Prescribing pattern of antibiotics in lower respiratory tract infection among children aged less than 5 years. *Indian J Pharm Pharmacol*. October-December 2016;3(4):182-5.
- [8] Dr Gedam DS, Dr Patel U, Mrs. Verma M, Dr Gedam S. Dr. Ashutosh Chourishi. Drug prescription on the pattern in the pediatric patient department in Teaching Hospital Central India. *Int J Pharm Sci Rev Res*. 17(2). 2012; 07:42-5.
- [9] Gupta CN, Chatterjee K. Prescription pattern of antibiotics in respiratory disorders in a tertiary care teaching hospital in the Eastern part of India. *Int J Res Med Sci*. 2017 Apr;5(4):1430-3. Doi 10.18203/2320-6012.ijrms20171240.
- [10] Patra S, Singh V, Pemde HK, Chandra J. The antibiotic prescribing pattern in paediatric patients with first-time wheezing. *Ital J Pediatr*. 2011; 37:40. Doi: 10.1186/1824-7288-37-40, PMID 21892931.
- [11] Kafle D. Prescribing pattern of antibiotics in respiratory tract infections in the paediatric indoor patients at Manipal Teaching Hospital. *Nepal J Med Sci*. 2022;7(2):46-51. Doi: 10.3126/jams.v7i2.47258.
- [12] Omkar P, Vijayalaxmi MK, Hiremath G, Vinay PD. A study on evaluation of the prescription pattern of drugs in upper respiratory tract infections in children at a tertiary care hospital. *Natl J Physiol Pharm Pharmacol*. 2022;12 | Issue 12.
- [13] Zhanga Zhitong, Hub Y, Zou Gy, Lind M, Zengd J, Denga S et al. Antibiotic prescribing for upper respiratory infections among children in rural China: a cross-sectional study of outpatient prescriptions *Global Health Action*. Vol. 10; 2017. p. 1287334
- [14] Rebecca Hayes MD, Merritt MEHPB, Stacey Lewis MD, Jessie Shields MD, Gerlach J. MD Todd W. Gress MD MPH, and Joseph Evans MD. Antibiotic prescriptions for upper respiratory infections in a pediatric office versus an urgent Care Center. *Glob Pediatr Health*; 6:1-7.
- [15] Ahmed MM, ElMaraghy AA, Andrawas EW. Study of prescription patterns of antibiotics in treating lower respiratory tract infections at Sohag Chest Hospital. *Egypt J Chest Dis Tuberc*. 2016;65(1):143-55. doi:10.1016/j.ejcdt.2015.04.012.
- [16] Prevalence and factors associated with acute respiratory infection among under-five children in selected tertiary hospitals of Kathmandu Valley, pubmed central, national library of medicine, Pratima Ghimire, 7 apr 2022. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8989212/>)
- [17] WHO website: <https://www.who.int/data/gho/indicator-metadata-registry/indicator/3147>

Author Profile



Dr. Steffi John, (PHARM. D), Assistant Professor, Shree Dhanvantary Pharmacy College, KIM, Surat, Gujarat, India
Email Id: steffimfc@gmail.com



Dr. Jignesh Patel, (M.B.B.S, DCH, IDPCCM), (Pediatric Intensivist), Nirmal Multispeciality Hospital Pvt. Ltd, Surat, Gujarat, India



Nitin Ladumor, (PHARM. D) (INTERN), Shree Dhanvantary Pharmacy College, Surat, Gujarat, India
Email Id:- nitinladumor38[at]gmail.com
Contact No: 9879322337



Vrutika Paneriya, (PHARM. D), (INTERN), Shree Dhanvantary Pharmacy College, Surat, Gujarat, India
Email: vrutikapneriya[at]gmail.com



Aesha Kakadiya, (PHARM. D) (INTERN), Shree Dhanvantary Pharmacy College, Surat, Gujarat, India
Email: aeshakakadiya43[at]gmail.com



Priyanka Kosambi, (PHARM. D) (INTERN), Shree Dhanvantary Pharmacy College, Surat, Gujarat, India
Email: priyankakosambi1401[at]gmail.com