IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Human Journals
Research Article
February 2024 Vol.:30, Issue:2

Assessment of Prescription Pattern in Children Suffering from Infectious and Non-Infectious Diseases in Secondary Care Hospital

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ISSN 2349-7203
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Submitted: 25 January 2024
Accepted: 31 January 2024
Published: 29 February 2024

Keywords: antibiotic resistance, pharmacist, collaboration, rationale, indicators.

ABSTRACT

Aim: To assess the prescription pattern in children suffering from infectious and non-infectious diseases. **Objective**: To assess the most commonly prescribed drug. To assess average number of medicines per encounter. To assess encounters with antibiotics and injections. To assess medicines prescribed with generic names and from essential drug lists. **Methods:** A prospective observational study was conducted. After obtaining patient's parent consent to participate, these patients were included in this present study. Total 100 patients data was collected and documented in data collection form. WHO core prescribing indicators were utilized. **Results:** The most commonly 58.2% prescribed drug was ceftriaxone. The average number of drugs per prescription was 8.07. The percentage of encounters with antibiotics was 100%. The percentage of drugs prescribed by generic name was 59.55%. The percentage of encounters with injections was 100%. The percentage of drugs from the essential drug list was 50.74%. **Conclusion:** Based on results it can be concluded that WHO core prescribing indicators were not as per WHO limits. All the prescriptions comprised of antibiotics. Antibiotics were prescribed for self limiting infections and it indicated empirical prescribing. Additionally, pharmacist need to collaborate along with the pediatrician for promoting rational and patient-centered treatment.

INTRODUCTION

The evaluation of drug use is significant for clinical, informative and commercial perseverance. Pediatric patients represent a large part of the population in developing countries. To abide by, rational drug therapy, the use of a drug must be effective, nontoxic, recommended to the related illness. [1]

Medication errors and other drug-related problems like antibiotic resistance are the most concerning issues. Drug- related problems are those events that interfere with desired health outcomes. Instituting drug maintenance sectors by pharmacists in health care departments offers drug care facilities.[2]

There is a necessity to assess the prescription pattern among children suffering from infectiousdiseases and non-infectious diseases.

Thus aim of this present study was to assess the prescription pattern in children suffering from infectious and non- infectious disease. Objectives of this present study were: To assess the most prescribed drug. To assess average number of medicines per encounter. To assess encounters with antibiotics and injections. To assess medicines prescribed with generic name and from essential drug list.

Methodology

A prospective observational study was conducted in an inpatient department of pediatrics in a secondary care district hospital located in Hyderabad. The duration of the study was six months from September 2022 to February 2023. The sample size was one hundred patients.

Inclusion criteria comprised of patients from the age of new born to less than or equal to 28 days and less than or equal to 18 years and patient's care taker willing to provide consent. Exclusion criteria comprised of patients in critically ill condition, patients of age above18 years and patient's caretakers not willing to provide consent.

Data collection:

Data collection form (DCF) was specially designed for this present study. The data collected from the patient's medical record was documented in it. DCF included demographics of the patient, present complaints, history of the patient, physical examination, provisional

diagnosis, heamatological data, clinical biochemistry, final diagnosis and treatment chart.

WHO core prescribing indicators includes (Priyadarshani Galappatthy *et. al.*2021).

The average number of drugs per prescription- It was calculated by dividing the total number of drugs, by the total number of prescriptions of this present study.

Percentage of the drugs prescribed by generic name – It was calculated by dividing the total number of drugs prescribed by generic name by the number of drugs prescribed, then multiplied by 100.

Percentage of the drugs prescribed from the essential drug list – It was calculated by the total number of drugs prescribed from the essential drug list by the total number of drugs prescribed, and then multiplied by 100.

Percentage of injectable drugs prescribed per encounter- It was calculated by dividing the number of prescriptions prescribed with an injectable drug by the total number of prescriptions, then multiplied by 100.

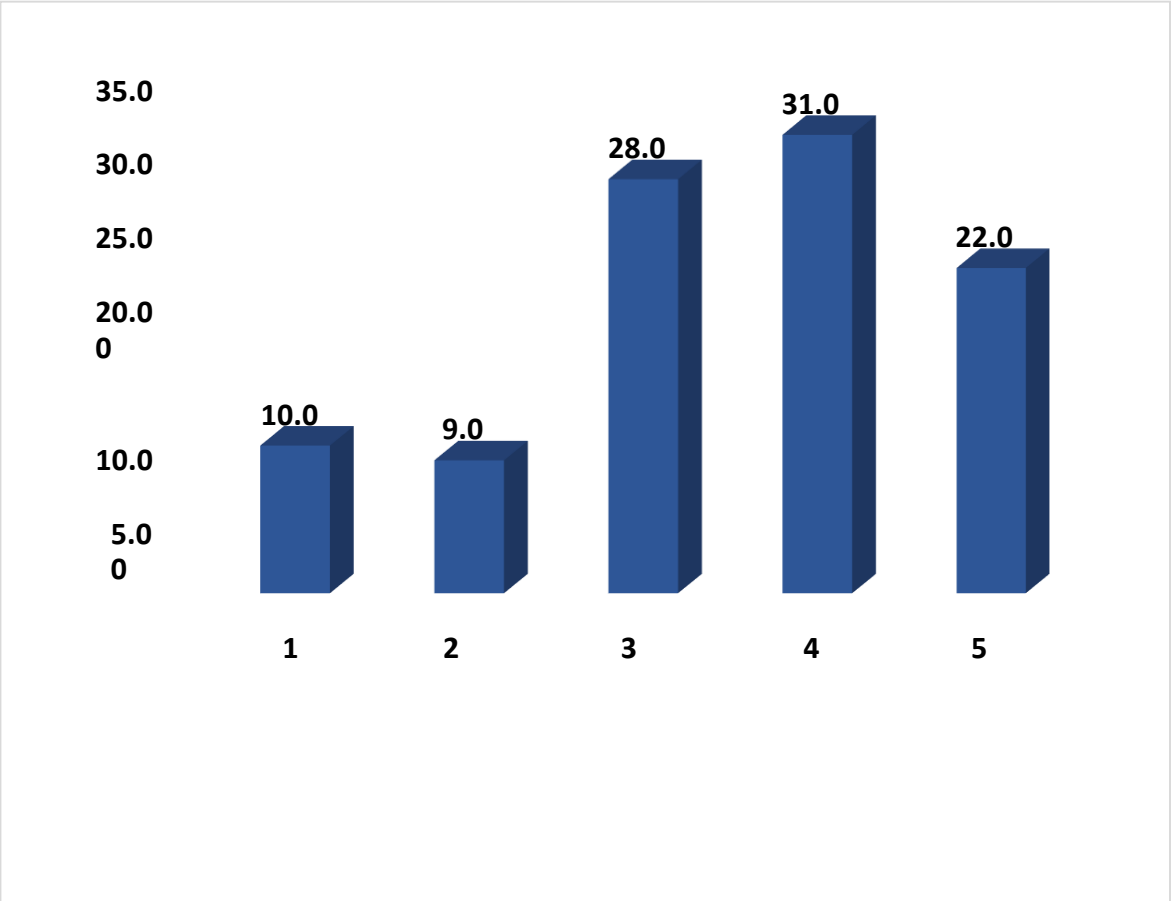
Percentage of antibiotics prescribed per encounter – It was calculated by dividing the number of prescriptions prescribed with antibiotics by the total number of prescriptions, then multiplied by 100.

Statistical analysis:

The data obtained were entered into Excel. Descriptive statistical analysis of data was carried out.

Results:

In this present study, 100 patients were included after obtaining written consent.



Categorization based on age:

Fig. No. 1.: Categorization based on age (N=100) . 1. More than 28 days to less than or equal to 12 months. 2. More than 12 months to less than or equal to 3 years. 3. More than 3 years to less than or equal to 5 years. 4. More than 5 years to less than or equal 10 years. 5. More than 10 years to less than or equal 14 years.

The data related to categorization based on age is represented in Fig. No. 1.

Categorization based on gender:

Table No.1.: Categorization based on gender (N=100):

S.No.	Gender	Number (N)	Percentage (%)
1	Male	46	46.00
2	Female	54	54.00
	Total	**100**	**100.00**

The data related to categorization based on gender is represented in Table. No. 1.

Categorization based on diagnosis:

Table No.2.: Categorization based on diagnosis (N=100):

S.No.	Provisional diagnosis	Total number*	Total percentage (%)*
1	AFI	54	54.00
2	AFI with LRTI	2	2.00
3	AFI with URI	1	1.00
4	AFI with VSD	1	1.00
5	AFI with pneumonia	1	1.00
6	AFI with URTI	2	2.00
7	AFI with UTI	1	1.00
8	Viral pyrexia	10	10.00
9	Viral pyrexia with microcytic anaemia	1	1.00
10	Viral pyrexia with URTI	2	2.00
11	GE	2	2.00
12	AGE	8	8.00
13	LRTI	3	3.00
14	LRTI with acute tonsillitis	1	1.00
15	LRTI with bronchopneumonia	1	1.00
16	Bronchopneumonia	2	2.00
17	URTI	2	2.00
18	URI	1	1.00
19	Dengue	2	2.00
20	Acute laryngitis	1	1.00
21	HRAD	1	1.00
22	Tachypnea with right sided expitation	1	1.00
	Total	100	100

***= Patients from more than or equal to 28 days to less than or equal to 14 years**

The data related to categorization based on diagnosis is represented in Table. No. 2.

Prescription pattern of drugs prescribed in pediatric patients.

Table No.3.: Prescription pattern of drugs prescribed in pediatric patients (N=100):

S.No.	CLASS OF DRUGS	NUMBER(N)	PERCENTAGE (%)
1	IVF	134	16.63
2	Antibiotics		
2.1	Cephalosporins	92	11.41
2.2	Quinolones	3	0.37
2.3	Aminoglycosides	25	3.10
2.4	Penicillins	11	1.36
2.5	Macrolids	10	1.24
2.6	Nitromidazole	2	0.25
8	Nuraminidase	1	0.12
9	Anti staphylococcol	1	0.12
10	NSAIDS	101	12.53
11	Antihistamines	53	6.58
12	Corticosteroids	8	0.99
13	Bronchodilators	67	8.31
14	Mucolytics	47	5.83
15	Nasal decon- gesants	7	0.87
16	Antispasmodic	9	1.11
17	Anthelmintic	1	0.12
18	Antiemetics	58	7.2
19	PPI	74	9.18
20	Ulcer protective	2	0.25
21	Probiotics	19	2.36
22	Benzodiazepines	2	0.25
23	Urine alkalizer	1	0.12
24	Multi vitamins	34	4.22
25	Nutrients & minerals	41	5.09
26	Local anesthetics	1	0.12
27	Antifungal	2	0.25
	Total	806	100

The data related to prescription pattern of drugs prescribed in pediatric patients is represented in Table. No. 3.

WHO core prescribing indicators in the pediatric population

Table No. 4.: WHO core prescribing indicators in the pediatric population (N=100):

S.No.	Prescribing Indicator	Number and percentage (%) of this present study	Number and percentage (%) according to the WHO
1	Average number of drugs per prescription	8.06	1.6–1.8
2	Percentage of encounter with antibiotics	100%	20–26.8%
3	Percentage of drugs prescribed by generic name	59.55%	100%
4	Percentage of encounter with injections	100%	13.4–24.1%
5	Percentage of drugs from essential drug list	50.74%	100%

The data related to WHO core prescribing indicators in the pediatric population is represented in Table. No. 4.

Discussion:

In this present study majority 31.00% of patients were in the age group more than 5 years to less than or equal to 10 years. T. Rajavardhan *et.al*. reported that majority 53.69% of patients were in age group of 13 months and 5 years [(1)].

In this present study majority 54% of the patients were females. Author reported that majority 50.6% of patients were males. These results were contrary to results of it [(3)].

In this present study, the majority of the patients 54%, were suffering from acute febrile illness. Author reported majority of the patients 43.7%, were suffering from upper respiratory tract infection. It was contrary to results reported by T. Rajavardhan *et.al.* [(1)].

In this present study, the main class of drug prescribed were antibiotics, Author reported that, the the main class of drug prescribed antibiotics. The present study results were similar to results reported by N. Venkatewaramurthy *et.al.* [(2)].

In this present study, there were 100% antibiotics and 100%, injections prescribed in 100

prescriptions. The present study results were similar to results reported by T. Rajavardhan *et.al.* [(1)].

Conclusion

This study provided an insight about prescribing pattern in pediatric patients. In this present study all these five indicators were not in accordance with WHO core prescribing indicators. Pharmacist should work in collaboration with pediatrician to promote patient-centered care and encourage rational prescribing.

Conflict of interest:

The study's authors jointly affirm that there is no potential conflict of interest.

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