

# Antibiotics Prescribing Pattern in Pediatrics Ward in Tertiary Care Hospital.

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## ABSTRACT

**Background:** Aims & Objective:- The present study was suggested with the objective to of antimicrobial drug use in different indication in the tertiary care hospital. **Methods:** The case study was carried out in the Departments of pharmacology and pediatrics of carrier institute of Medical sciences Lucknow. **Results:** In the present study, total 250 cases were included. Among the 250 cases 70% were male and 30% were female. In this study we found that 49.2% cases were belong to between 1year to 5 year age group followed by 1 month – 1 year (14.8%) & >5 year (36%). In our study , 43.2% cases had 6-12 kg weight followed by 28%(12-18 kg) , 16.8%(18-30 kg), 12%(<6kg). **Conclusion:** This study conclude that, common use of antibiotic without culture and sensitivity, may leads to high cost burden and commonly resistance to antibiotics. This situation comes from parents' pressure of quick relief using strong medication.

**Keywords:** Children, pharmacology, antimicrobial drug, cephalosporin's

## INTRODUCTION

Fever is one of most common clinical symptoms managed by pediatricians and other health care providers and accounts up to one third of all presenting conditions in children.<sup>[1]</sup> Fever is not an illness but a physiologic mechanism that has beneficial effects against infection.<sup>[2-4]</sup> Fever primarily enhances neutrophil production and T-lymphocyte proliferation, retards the growth and reproduction of bacteria and viruses, and aids in the body's acute-phase reaction.<sup>[5-9]</sup> Data show beneficial effects on certain components of the immune system in fever, and limited data have revealed that fever actually helps the body recover more quickly from viral infections, although the fever may result in discomfort in children.<sup>[5,10-12]</sup>

Children constitute about 40% of India's population. Infants and children suffer from frequent but usually non serious illnesses. Most of these are self-limiting and are often treated not only inappropriately, but also resorting to poly-pharmacy.<sup>[13,14]</sup> The key role of antibiotics for the treatment of infectious diseases that are prevalent everywhere in developing

countries may not be denied. However, there are also reports of an irrational use of antibiotics which may even lead to infections that are worse than the originally diagnosed ones.<sup>[15,16]</sup>

## MATERIALS AND METHODS

### Study population

250 cases were included in this study.

### Study Area

The case study was carried out in the Departments of pharmacology and pediatrics of carrier institute of Medical sciences Lucknow.

### Study duration

Duration of this study was one year.

### Sampling technique & Data collection

Study population included of patients who were admitted in pediatrics who had with primary complain of fever. Therefore, all of the cases admitted on the data collection period were covered and it came to by complete enumeration method. Patient related information such as age, sex, diagnosis and drug related information like drugs, dose, dosage form, route of administration were collected in a pre-designed, structured schedule in accordance with WHO criteria for Drug Utilization Survey and Research.

### Data Analysis

Data were analyzed by using Microsoft excel.

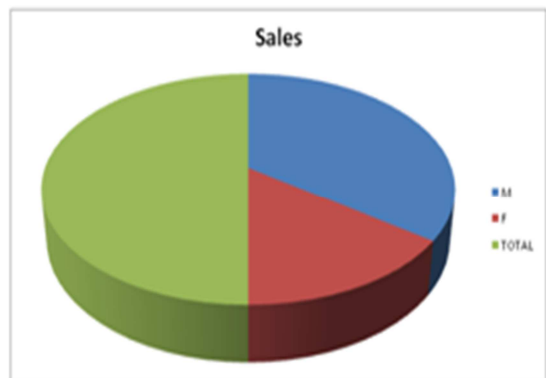
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**RESULTS**

**Table 1: Gender Wise Distribution**

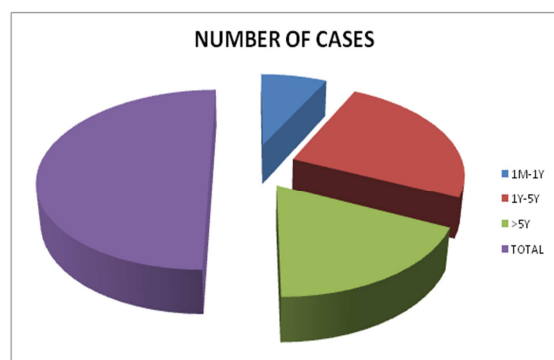
Gender	Number Of Cases	Percentage
Male	175	70%
Female	75	30%
Total	250	100%



**Figure 1:** This chart shows distribution of cases in males & females

**Table 2: Age Wise Distribution.**

Age	Number Of Cases	Percentage
1 M – 1 Y	37	14.8%
1Y – 5 Y	123	49.2%
>5 Y	90	36%
TOTAL	250	100%



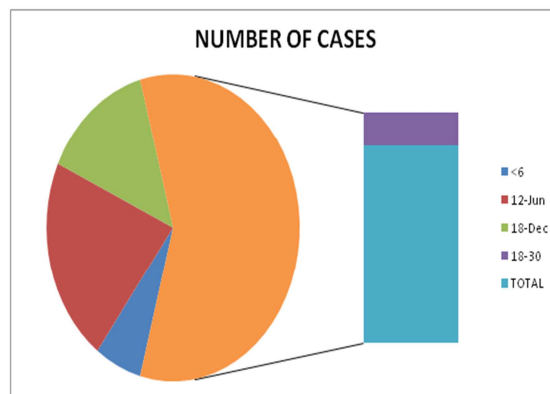
**Figure 2:** This chart shows distribution of cases accordingly age in all cases

**Table 3: Weight Wise Distribution**

Weight	Number Of Cases	Percentage
<6	30	12%
6-12	108	43.2%
12-18	70	28%
18-30	42	16.8%
TOTAL	250	100%

In the present study, total 250 cases were included. Among the 250 cases 70% were male and 30% were female. In this study we found that 49.2% cases were belong to between 1year to 5 year age group followed by 1 month – 1 year (14.8%) & >5 year (36%). In our study, 43.2% cases had 6-12 kg weight followed by 28% (12-18 kg), 16.8%(18-30 kg),

12%(<6kg). Among the all cases we found that 24.8% diagnosis had of gastrointestinal tract infection followed by LRTI (22.4%) ,labor pneumonia (1.2%), bronchopneumonia(0.8%), emphyma (0.8%), UTI(16.4%), viral fever(21.2%), unknown fever (12.4%). In the all cases, most prescribing the drug were from cephalosporin group (40.8%) followed by penicillin(21.2%), aminoglycoside (27.2%) and other group (10.8%).



**Figure 3:** This chart shows distribution of cases according to weight

**Table 4: Diagnosis in all cases**

Diagnosis	Number Of Cases	Percentage
Lower Respiratory Tract Infection	56	22.4%
Labor Pneumonia	3	1.2%
Bronchopneumonia	2	0.8%
Emphyma	2	0.8%
Gastrointestinal Infection	62	24.8%
Urinary Tract Infection	41	16.4%
Viral Fever	53	21.2%
Uknown Fever	31	12.4%
Total	250	100%

**Table 5: WHO recommended Prescribing Indicators**

Average number of drugs prescribed per day	3.21%
Percentage of the drugs prescribed by generic name	24.39%
Percentage of the drugs prescribed from essential drug list	96.58%
Percentage of the drugs supplied from hospital pharmacy	65.71%
Percentage of inject able drugs prescribed per day	67.60%
Percentage of prescription containing antimicrobial agent	94%

**Table 6: Precribing All Group Of Drug In All Cases**

Group Of Drug	Number Of Cases	Percentage
Penicillin	53	21.2%
Cephalosporin	102	40.8%
Aminoglycoside	68	27.2%
Other	27	10.8%
Total	250	100%

**Table 7: Prescribing Penicillin Group Of Drug In All Cases**

Penicillin Group	Number Of Cases	Percentage
Penicillin	1	1.9%
Ampicillin	8	15.1%
Amoxicillin	9	16.9%
Amoxicillin+clavulanic acid	31	58.4%
Piperacillin + tazobactam	4	7.5%
TOTAL	53	100%

**Table 8: Prescribing Cephalosporin Group Of Drug In All Cases**

Cephalosporin Group	Number Of Cases	Percentage
Ceftriaxone	38	37.2%
Ceftriaxone + Sulbactam	14	13.7%
Ceftriaxone + Tazobactam	7	6.8%
Cefotaxim	19	18.6%
Cefepime	16	15.6%
Cefpodoxim	2	1.9%
Ceftazidime	6	5.8%
TOTAL	102	100%

**Table 9: Prescribing Aminoglycoside Group Of Drug In All Cases**

Aminoglycoside group	Number of cases	Percentage
Amikacin	12	17.6%
Gentamycin	49	72.1%
Tobramycin	7	10.3%
TOTAL	68	100%

## DISCUSSION

In our study, was noted to be high in male cases than the female and in patients of 1 year to 5 years of age. These might be related to prevalence of infectious diseases in these segments of pediatric populations. Antibiotic use is seemed to be indiscriminate as 98.8% of patients admitted with fever got at least one antimicrobial drug whereas documented diagnoses revealed that in 21.2% cases the cause was viral. Some of the patients who received antimicrobial drugs, take three or more antibiotics simultaneously which might be predispose to higher chance of antibiotic resistance. Moreover in case of prescriptions of UTI, culture and sensitivity reports were not documented which indicate those patients were treated empirically with antimicrobial drugs.

WHO define that the rational use of drugs when “patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community”.<sup>[17]</sup> The irrational use of drugs is known to lead to an increase in the cost of treatment, incidence of ADR and development of resistance against antimicrobials.<sup>[18]</sup> There is enough evidence to demonstrate that prescribing of drugs has shifted

from generics to branded and prescribing out of NLEM.<sup>[19-21]</sup>

The results of studies found to help policy makers to develop policy regarding quality of rational drug use in a health facility.<sup>[22-24]</sup>

## CONCLUSION

Frequent use of antibiotic without frequent culture sensitivity, leads to high cost burden and resistance to antibiotics. This situation comes from parents' pressure of quick relief using strong medication.

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