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Confrontational Use Of Antibiotics In Pediatric Prescriptions

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Abstract

Antibiotics are commonly prescribed drugs in pediatrics. Monitoring and control of antibiotic usage and detailed knowledge of antibiotic prescribing practice is important these days. The main objective of this study is to analyze the prescription pattern of pediatrics in a tertiary care teaching hospital and to assess the antibiotics usage in pediatric population. A randomized study was done in a tertiary care teaching hospital. Patients less than 13 years of age and those visiting the hospital on regular basis were included in the study. The Antibiotic usage by the patients was examined and a high incidence of polypharmacy was reported. From this study it can be concluded that it is mandatory to prepare guidelines for antibiotic prescription and use appropriate drugs for the disease rather than prescribing multiple drugs.

Key words: Prescription pattern, Pediatrics, Antibiotic usages, Polypharmacy

Introduction

Worldwide, infants and children represent a higher proportion of the population. 28% of the world's total population is accounted by Children younger than 15 years of age. Across the globe this category has higher than average risk of developing infectious disease. The use of antibiotics has become a routine practice for the treatment of pediatric illnesses.^[1,2] Thus children and infants are subjected to innumerable discrepancies in antibiotic medications. There are various reports of irrational use of antibiotics in pediatrics.^[3, 4, 5] Drug resistance is the reduction in effectiveness of a drug in curing a disease or improving a patient's symptoms and it is an important factor in the development of antibiotic resistance^[6]. Prescription patterns for pediatric patients containing broad-spectrum antibiotics were analyzed in this study. Here, Broad spectrum antibiotic refers to an antibiotic with activity against a wide range of disease causing bacteria. A global perspective of safe and effective antibiotic therapy has become a necessity these days. Several professional societies have issued guidelines designed to reduce the use of antibiotics world- wide by means of various control strategies^[7,8].

Materials and methods

A prospective randomized study was undertaken in the pediatric department of a tertiary care teaching hospital for 3 months. Patients were enrolled after receiving verbal informed consent. Patient data collection form was prepared based on study objectives. Clinicians and nursing staff were also consulted for further details. Pediatric prescriptions dealing with antibiotic usage was analyzed. Patient who visits hospital regularly and below 12 years of age were included in this study. Total number of cases studied was 100.

The exclusion criteria were

- Age above 12 years
- Whose parents unwilling to participate
- Those with congenital anomalies
- Children with major illness

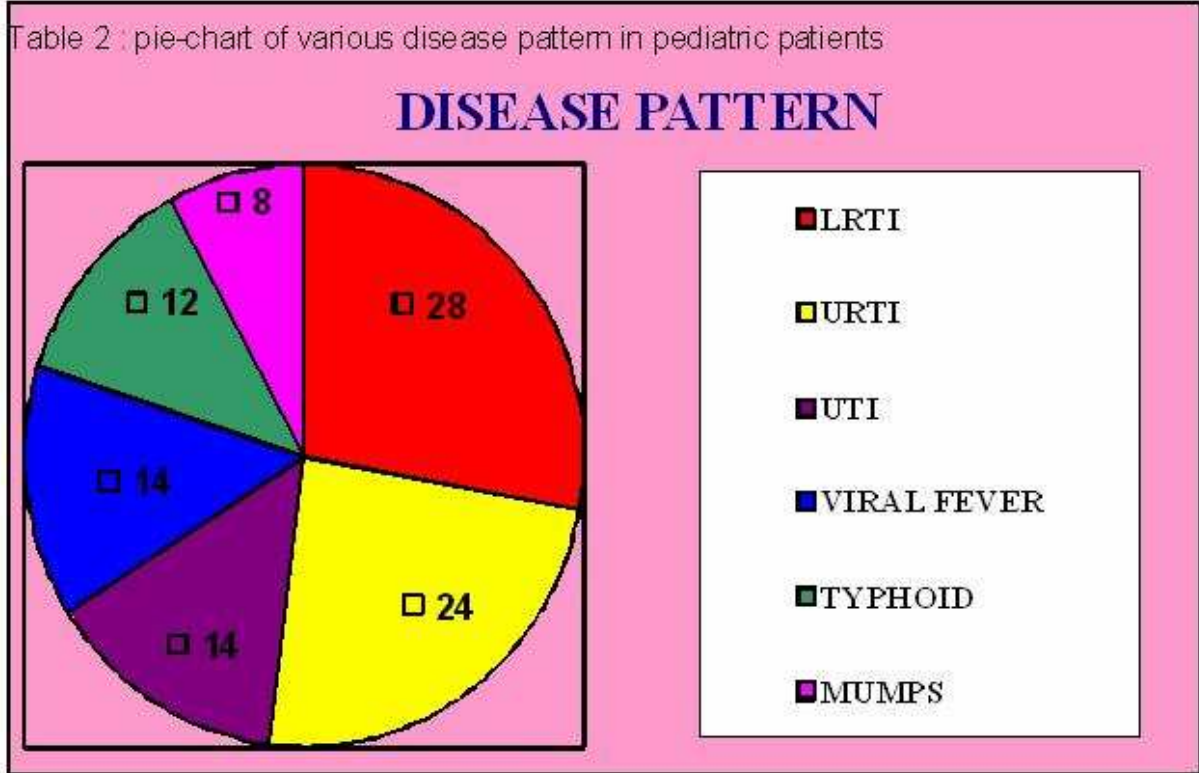
Patient characteristics like age, sex, body weight, cases with previous drug history, duration of hospitalization were noted. Admission, discharge diagnosis, the condition of the patients on admission, discharge, Dosage regimen (form, route, frequency and duration), type of drugs and quantity prescribed were also recorded.

Results and Discussion

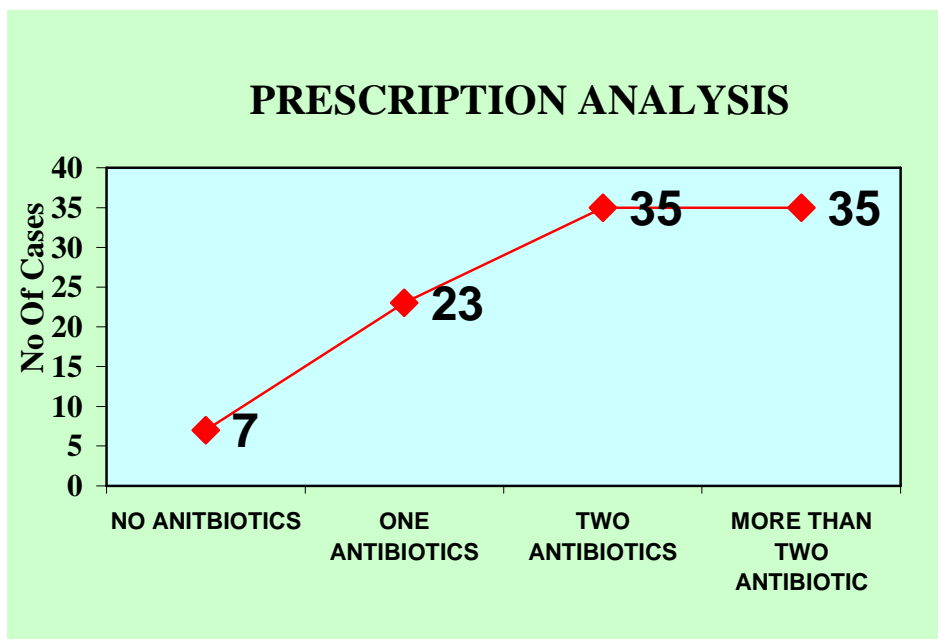
Out of 100 cases reviewed, children less than 5 years of age were most prone to repeated infections (table 1).



Analysis of disease pattern reveals that most of the patients suffered from Respiratory tract infections including both lower respiratory tract infections (LRTI) and upper respiratory tract infections (URTI). Other infections like Urinary tract infection (UTI), viral fever, typhoid etc were also seen to affect in some of the cases (table 2).

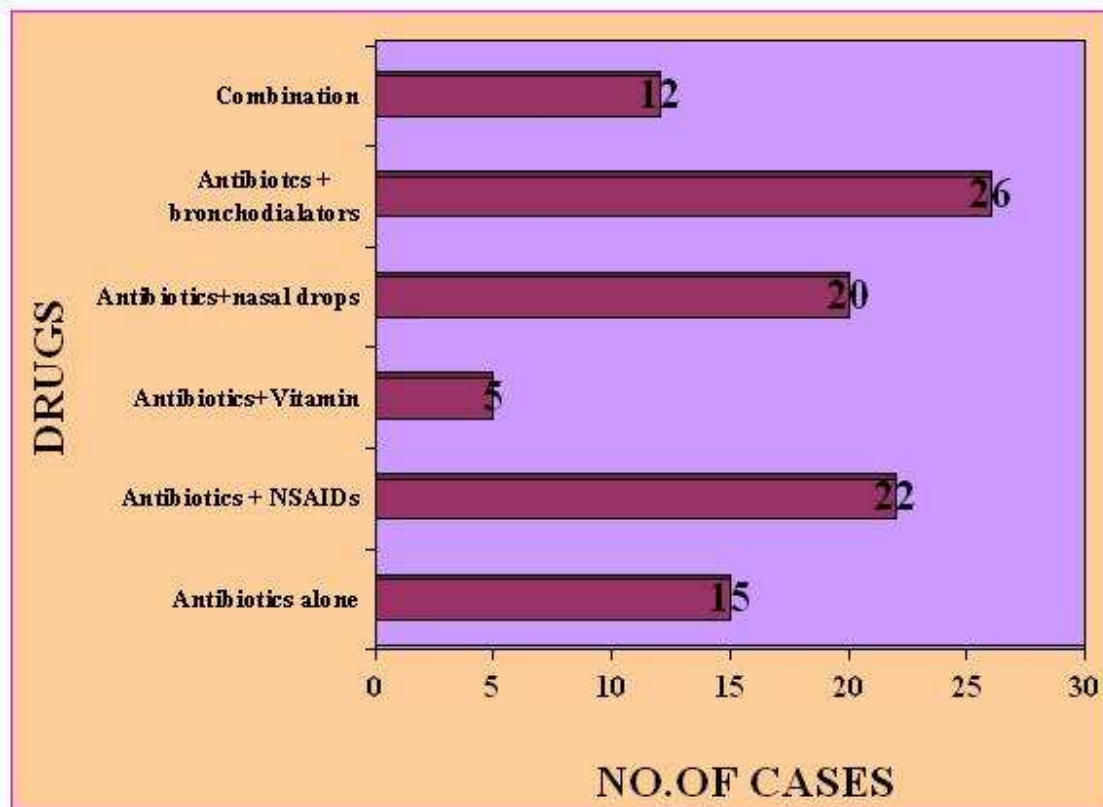


Antibiotic usage was examined carefully and a high incidence of polypharmacy was reported. Out of the 100 cases, 35 cases showed repeated infections due to development of antibiotic resistance. About 70% patients were prescribed two or more antibiotics. The average number of antibiotics per prescription was found to be very high (table 3).



On evaluating poly pharmacy prescriptions majority of them contained antibiotics, NSAIDS, vitamin supplements and bronchodilators in combination.

Most of the prescriptions contained broad spectrum antibiotics that lead to drug resistance (Table 4).



Conclusion

Thus in this study it was found that majority of prescription contained broad-spectrum antibiotics and it lead to drug resistance. Growing bacterial resistance to antibiotics represents a global threat to the health of pediatric population in the world. Although antibiotic resistance has been a long observed problem, there is a recent concern about the widespread use of antibiotics in both human and animals.^[9] From this study it can be concluded that it is mandatory to prepare guidelines for antibiotic prescription and use appropriate drugs for the disease rather than prescribing multiple drugs.

Detailed knowledge of antibiotic prescription pattern is important before the policies and measures can be implemented. Because antibiotic prescribing rates are particularly high for children aged 0-6 years many health care societies are making a special effort to reach the parents of young children with information about appropriate use.^[10] Further researches have to be done in this area to minimize the confrontational use of antibiotics especially in pediatric population.

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