

ORIGINAL RESEARCH

Assessment Of Antibiotic Usage In Upper Respiratory Tract Infections In Children

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ABSTRACT

Background: Acute respiratory tract infection (ARTI) is the most common reason for antibiotic prescription in children and adults. The present study was conducted to assess antibiotic usage in upper respiratory tract infections in children

Materials & Methods: 80 children with upper respiratory tract infection of both genders were recorded. A thorough physical examination was carried out in all children. Weight in kgs and height was measured in meters. Month of ARTI and type of antibiotic prescribed was recorded

Results: Out of 80 patients, boys were 30 and girls were 50. Age group 5-7 years had 10, 7-9 years had 15, 9-11 years had 30 and 11-13 years had 25 children. The difference was significant ($P < 0.05$). Antibiotic prescribed in children were co-amoxiclav in 28, amoxicillin in 24, ofloxacin in 18 and cefuroxime in 10. The difference was significant ($P > 0.05$). The month of upper respiratory tract infections in children was January- February in 34, March-April in 12, May- July in 4, Aug- Oct in 10 and Nov- Dec in 20. The difference was significant ($P < 0.05$).

Conclusion: The most commonly antibiotic prescribed in children were co-amoxiclav, amoxicillin, ofloxacin and cefuroxime. Common month of use was December, January and February.

Key words: Acute respiratory tract infection, Children, Antibiotics

INTRODUCTION

Acute respiratory tract infection (ARTI) is the most common reason for antibiotic prescription in children and adults. The benefits of antibiotics for the management of most cases of ARTI such as sore throat are marginal. Inappropriate prescribing of antibiotics for patients with mainly URTI is common.¹ It is calculated that 75% of overall antibiotic prescribing takes place in primary care. Many medical practitioners do not think that antibiotic prescription in children is responsible for the development of antibiotic resistance where acute cough can last from 9 to 18 days while public expectation is for a duration of 7-9 days.²

Antibiotic use is associated with increased risk of isolation of antibiotic-resistant organisms. Prescription behavior of general practitioners and over-the-counter dispensing of medicines

by pharmacists often mimic that of the specialists. Therefore, it becomes necessary that prime institutions lead the way in prescription behavior.³

A well-known method for reducing antibiotic prescriptions for ARTI is the use of delayed prescriptions.⁴ These are valid prescriptions issued at the time of the consultation. The PCP usually negotiates with the patient that they are not to be used immediately but only if the patient feels that their symptoms deteriorate or do not improve as expected.⁵ The present study was conducted to assess antibiotic usage in upper respiratory tract infections in children

MATERIALS & METHODS

The present study comprised of 80 children with upper respiratory tract infection of both genders. Parental consent was obtained for the participation in the study.

Data such as name, age, gender etc. was recorded. A thorough physical examination was carried out in all children. Weight in kgs and height was measured in meters. Month of ARTI and type of antibiotic prescribed was recorded in case history proforma. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 80		
Gender	Boys	Girls
Number	30	50

Table I shows that out of 80 patients, boys were 30 and girls were 50.

Table II Age wise distribution

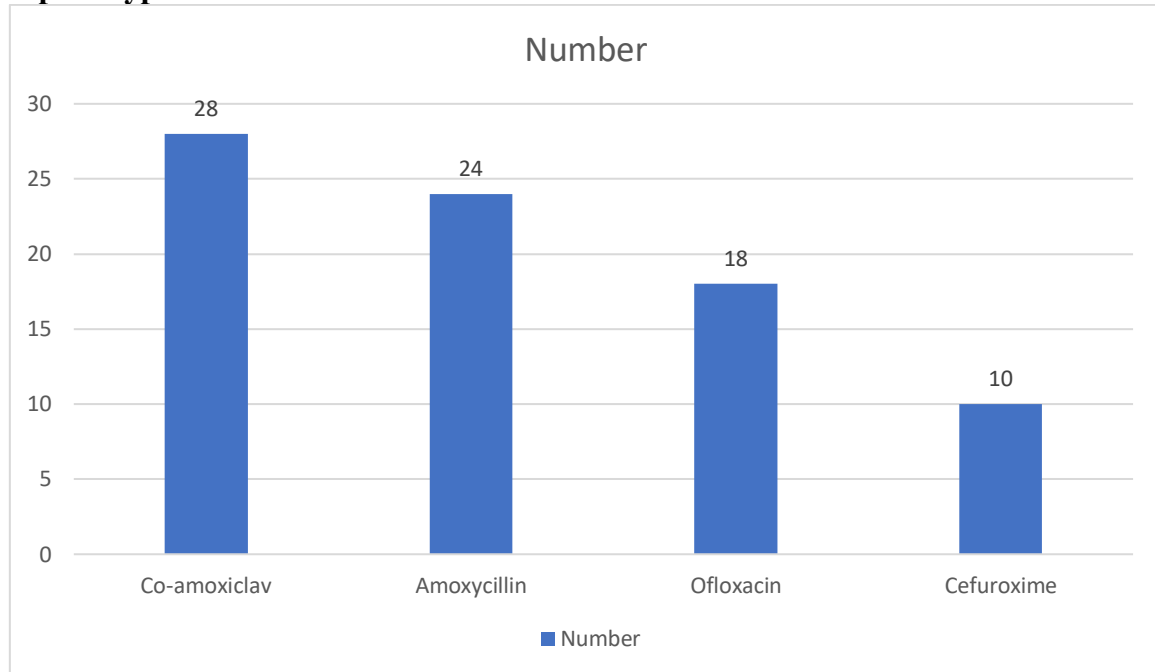
Age group (years)	Number	P value
5-7	10	0.05
7-9	15	
9-11	30	
11-13	25	

Table II shows that age group 5-7 years had 10, 7-9 years had 15, 9-11 years had 30 and 11-13 years had 25 children. The difference was significant (P< 0.05).

Table III Type of antibiotic used

Antibiotic used	Number	P value
Co-amoxiclav	28	0.12
Amoxycillin	24	
Ofloxacin	18	
Cefuroxime	10	

Table III, graph I shows that antibiotic prescribed in children were co-amoxiclav in 28, amoxycillin in 24, ofloxacin in 18 and cefuroxime in 10. The difference was significant (P> 0.05).

Graph I Type of antibiotic used**Table IV Month of upper respiratory tract infections in children**

Month	Number	P value
January- February	34	0.04
March- April	12	
May- July	4	
Aug- Oct	10	
Nov- Dec	20	

Table IV shows that month of upper respiratory tract infections in children was January-February in 34, March- April in 12, May- July in 4, Aug- Oct in 10 and Nov- Dec in 20. The difference was significant ($P < 0.05$).

DISCUSSION

Doctors may overestimate the pressure to prescribe antibiotics for acute cough or other acute respiratory illnesses, often prescribing antibiotics for patients who did not request them.^{6,7} There is mounting evidence that patients' expectations for antibiotics for ARTI have lessened in recent years, especially where the consultation is more patient centred.^{8,9} The present study was conducted to assess antibiotic usage in upper respiratory tract infections in children. We found that out of 80 patients, boys were 30 and girls were 50. Mishra et al¹⁰ found that the baseline APR was 14.7%. There was wide variation in APR (4.1%–53.1%) among consultants. Three consultants had a rate of 53.1%, 29.7%, and 28.6%, which was very high. Postintervention, the average APR decreased to 8.7%, a reduction of 40.8%. There was a reduction in APR among consultants with high APR as well. There was reduction in the use of azithromycin, a drug recommended for patients with penicillin allergy, from 21.2% to 14.4% (32.1% reduction). Amoxicillin plus clavulanic acid combination and amoxicillin alone continued to be the most prescribed antibiotics.

We observed that age group 5-7 years had 10, 7-9 years had 15, 9-11 years had 30 and 11-13 years had 25 children. Connor et al reviewed the published literature pertaining to antibiotic prescribing in order to identify and understand the factors that affect primary care providers' prescribing decisions. Primary care providers are highly influenced to prescribe by patient expectation for antibiotics, clinical uncertainty and workload induced time pressures.

Strategies proven to reduce such inappropriate prescribing include appropriately aimed multifaceted educational interventions for primary care providers, mass media educational campaigns aimed at healthcare professionals and the public, use of good communication skills in the consultation, use of delayed prescriptions especially when accompanied by written information, point of care testing and, probably, longer less pressurised consultations. Delayed prescriptions also facilitate focused personalised patient education.

We found that antibiotic prescribed in children were co-amoxiclav in 28, amoxicillin in 24, ofloxacin in 18 and cefuroxime in 10. We observed that month of upper respiratory tract infections in children was January- February in 34, March- April in 12, May- July in 4, Aug-Oct in 10 and Nov- Decin 20. Educational interventions for GPs and other PCPs Multifaceted educational interventions in general practice including visits by peer academics, regional 1-day seminars, internet-based training in communication skills and C-reactive protein (CRP) testing, all aiming to reduce antibiotic prescription rates for ARTI and to reduce the use of broad-spectrum antibiotics, have been shown to be effective.¹²

The DESCARTE study has been looking at the symptomatic outcome of acute sore throat in a random sample of 2876 adults according to antibiotic prescription strategy in routine care. It concludes that in the routine care of adults with sore throat, a delayed antibiotic strategy confers similar symptomatic benefits to immediate antibiotics.¹³

The limitation the study is small sample size.

CONCLUSION

Authors found that most commonly antibiotic prescribed in children were co-amoxiclav, amoxicillin, ofloxacin and cefuroxime. Common month of use was December, January and February.

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