

Original Research Article

Knowledge, attitude and practice of parents regarding antibiotic use in children

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ABSTRACT

Background: Antibiotic resistance has become an emerging issue worldwide due to the rampant and excessive use of antibiotics for any and every condition. At present, antibiotics are the most commonly sold drugs in the developing countries which have been the cause for escalation of antibiotic resistance. Lack of knowledge, awareness and practice among parents regarding antibiotics use is the most important cause for antibiotic misuse.

Methods: Cross sectional hospital based questionnaire study conducted among 200 parents of children attending the outpatient or inpatient department at Yenepoya Medical College Hospital, Mangalore; using personal interview method. Parents were asked to answer the statements on a 5-point Likert scale (“strongly agree”, “agree”, “uncertain”, “disagree”, “strongly disagree” or “never”, “sometimes”, “often”, “most of the time”, “always”). Statistical Package of social science (SPSS) software was used for analysis of data.

Results: Out of the 200 parent’s majority of the respondents (69%) were mothers. There was very little difference in percentage of respondents that disagreed with notion that antibiotics must be administered in any case of fever (43.3%). 42.3% mentioned that antibiotics were always necessary in ARI. Most common symptoms to visit pediatrician included cough (23.4%), followed by ear pain (18.1%) and nasal discharge (12.9%). 17.5% of parents never questioned the pediatricians if antibiotic administration was necessary and more than 2/3rd of the parents declared that pediatricians provided sufficient information regarding diagnosis and therapy.

Conclusions: Majority of parents admitted to self-administration of antibiotics. There is a need of intervention to increase awareness regarding judicious use of antibiotics and to check un-prescribed dispensing of antibiotics. Strategies for effective communication with patients and prudent prescription of antibiotics should be included in physician education to ensure patients’ adherence to advice and consequently to reduce self-medication with antibiotics.

Keywords: Antibiotic misuse, Antibiotic resistance, Attitude, Knowledge, Practice

INTRODUCTION

Infectious diseases contributed to high mortality and morbidity throughout the world before the invention of antibiotics; which was considered one of the greatest inventions of 20th century. And in the following years,

antibiotic resistance became an emerging issue worldwide due to the rampant and excessive use of antibiotics for any and every condition. At present, antibiotics are the most commonly sold drugs in the developing countries which have been the cause for escalation of antibiotic resistance.

In India similar to other developing countries, it is not necessary to bring a valid prescription for buying the prescription only drugs. Most of the medicines including antibiotics can be bought even without a prescription.¹

A major role is played by the public in the emergence and spread of bacterial resistance to antibiotics.² In 2000, the WHO Report Overcoming Antimicrobial Resistance identified three key issues for public involvement: improving access to medical services, reducing unnecessary use of antimicrobial drugs and not sharing medication with other people or keeping part of the course for another occasion.³

The rate of self-medication is also found to be rising worldwide including India.⁴ The prescribing patterns of antibiotics are not well controlled in many countries especially the developing ones.⁵ Due to all these factors, there is a necessity to investigate and prevent such unhealthy practices.

The comparatively less regulation and weak implementation of health policy in the developing world has led to the increasing bacterial resistance.⁶ A recent example implicating the Indian subcontinent is the discovery of NDM-1 gene plasmids conferring resistance to gram-negative bacteria and its potential to be a worldwide public health problem.⁷ The editorial by A. Ghafur draws our attention to the widespread nonprescription use of antibiotics in India, and postulates that the NDM-1 problem is likely to further worsen in the future aptly described by A. Ghafur: "The art of war is deception; that is deceiving the enemy, in which we have deceived ourselves by misusing, under using and overusing antibiotics".^{6,7}

Acute respiratory infections (ARI) are a major cause of mortality in children in developing countries.⁸ In a paediatrics one of the most common prescriptions of antibiotics are in cases of upper respiratory tract infections.⁹ Physicians need to be aware of the consequences of unnecessary prescription of antibiotics and the public also needs to be cognizant on this matter.^{10,11} Majority of the infections are due to viral infection (which do not require antibiotics) and less than 5% are complicated by bacterial infections, due to which antibiotics should be used judiciously. This can be better tackled by continued education of doctors.¹² A number of studies have been done to investigate the prescribing practices of physicians.¹³

METHODS

The present study was a cross sectional hospital-based questionnaire study conducted among 200 parents of children attending the paediatric outpatient department or treated at the inpatient department at YMCH Hospital using personal interview method in a time period of 2 months. All those parents who satisfy the inclusion criteria were included in the study. Data was collected

from parents by standard questionnaire method as per case record format. Questions were prepared from previously published studies and prepared format validated by the institutional ethical committee. Filled up questionnaires were collected and was attached along with the filled up proforma. Parents were asked to answer the statements on a 5-point Likert scale ("strongly agree", "agree", "uncertain", "disagree", "strongly disagree" or "never", "sometimes", "often", "most of the time", "always"). Statistical Package of social science (SPSS) software was used for analysis of data.

Aim

The lack of knowledge of parents regarding antibiotic use and the feasibility of purchase of antibiotics over the counter has led to increased unreasonable use of antibiotics by parents for their children. Through this study, we aim to analyze the knowledge, attitude and practice of antibiotics use by the parents for their children.

Study design

This study was hospital based cross sectional study within a time period of 2 months parents of children attending the pediatric OPD or treated in the pediatric inpatient at YMCH, Mangalore, India).

Materials and methods

The present study obtained Institutional Ethical Committee clearance. Parents will be consecutively selected from the outpatients of the pediatric department or treated in the pediatric inpatient at YMCH, Mangalore, India. Data analysis will be done using the SPSS software.

Source of data

Consecutively selected parents of children attending the pediatric outpatient or treated in the pediatric inpatient at YMCH, Mangalore, India within a time period of 2 months.

Inclusion criteria

Parents of children attending pediatric outpatient or treated in the pediatric in patient at YMCH, Mangalore, India. Parents who were willing to participate in the study included with consent.

Exclusion criteria

Parents not willing to participate.

Statistical analysis

Cross sectional Study. Statistical Package of social science (SPSS) software was used for analysis of data.

The analysis of answers for questions involved descriptive quantitative statistics, e.g., frequency and percentage for categorical variables and means ± standard deviation (SD) or medians (lower upper quartiles) for numerical variables.

Work plan

This study will be conducted for a period of 2 months in Yenepoya Medical College Hospital, in consecutively selected parents of children who attended the pediatric outpatient or were treated in the pediatric inpatient as per the inclusion criteria. The data will be collected after the clearance is obtained from Institutional ethical committee. Parents will be numbered serially. Readings obtained will be recorded and tabulated. Results will be expressed in terms of proportion and percentage. Zero to 3 months- synopsis presentation, data collection. Fourth month- Statistical analysis, Result interpretation and Final presentation.

RESULTS

Out of the 200 parent’s majority of the respondents (69%) were mothers and 74% of parents were under middle/ lower middle income according to Kuppuswamy Socio Economic Scale.

Knowledge

There was very little difference in percentage of respondents that disagreed with notion that antibiotics

must be administered in any case of fever (43.3%) as compared to those who disagreed to this statement (38.3%) while 18.4% were uncertain [Table 1], 42.3% mentioned that antibiotics were not always necessary in ARI and 41.1% were uncertain . A total of 78% of the parents were aware of the fact that antibiotic misuse drives bacterial resistance; still 54.7% parents would still give antibiotics because they thought that recovery would be faster when antibiotics were used and 22.1% disagreed [Table 1], 50.8% agreed that antibiotics have their own side effects [Table 1]. Finally, half of the respondents believed that new stronger antibiotics are always available.

Practice

Statistically 17.5% of parents never questioned the pediatricians if antibiotic administration was necessary and more than 2/3rd of the parents declared that pediatricians provided sufficient information regarding diagnosis and therapy, while 41% of parents received antibiotic recommendation from their pediatrician over the phone. The most common reason to administer un prescribed antibiotics was that the same antibiotic was prescribed by physician earlier followed by family member or pharmacist recommending use of antibiotic. Lack of resources was rejected as a reason of self-administration of antibiotics by majority of parent. A total of 36% of parents did not always follow the pediatrician’s advice.

Table 1: Important queries to assess knowledge of parents.

Query	Agree	Disagree	Uncertain
Antibiotics must always be administered in case of fever	87(43.3%)	77(38.3%)	36(18.0%)
As most ARI are of viral origin, antibiotics must not be administered	85(42.3%)	33(16.6%)	82(41.1%)
Antibiotics decrease recovery time	109(54.7%)	44(22.1%)	47(23.5%)
Antibiotics do not have side effects	52(26.2%)	102(50.8%)	46 (23%)

DISCUSSION

In our study, similar to other studies, parents and physicians have a trusted relationship because most parents were content with the information provided to them and also would not change their doctor’s whether antibiotics were used too much or too little.¹⁴ Parents also believed that upper respiratory tract infections are mostly self-limited (76%) although 71% of them, similar to other studies, expected to possibly receive antibiotics when such a diagnosis was given.^{14,15} Majority of the parents also preferred other drugs given for symptomatic therapy. Most common symptoms to visit pediatrician included cough (23.4%), followed by ear pain (18.1%) and nasal discharge (12.9%); whereas in other similar

studies major complaint for which they went to the doctor was for running nose.¹⁴ Majority of parents expected the pediatrician to prescribe antibiotics for sore throat, cough, and fever and ear pain, similar to other studies in which majority of the caregivers requested antibiotics for earache: whereas in another study less than one fourth (21.5%) considered ear infection in children always doesn’t require antibiotic treatment.^{14,16} However similar to previously done studies, symptoms for which parents never expected their pediatrician to prescribe antibiotics were cold (29.3%) and nasal discharge (32.8%).¹⁶ Similar to other studies 12%percent of parents would consider giving their children antibiotics without previous medical advice which demonstrates a lack of knowledge regarding its consequences, 66% of parents confused

antibiotics with other medicines used for symptomatic relief for a child with upper respiratory tract infections symptoms.^{4,14-16}

Limitations of the study were invalid answers that may have occurred because of embarrassment. Additionally, the language used to form the questions may not have been fully understood by parents of low socioeconomic status (because of the use of medical terms) leading to wrong answers or even to no answers at all.

CONCLUSION

Majority of parents admitted to self-administration of antibiotics. They contribute less than we expected on misuse of antibiotics and buying over the counter antibiotics. Parents also realize the benign course of most upper respiratory tract infections and that unnecessary antibiotic use is harmful. We need to invest more time in educating mostly physicians on the potential benefit of reducing antibiotic prescribing for children with URTI. There is a need of intervention to increase awareness regarding judicious use of antibiotics and to check un-prescribed dispensing of antibiotics. Strategies for effective communication with patients and prudent prescription of antibiotics should be included in physician education to ensure patients' adherence to advice and consequently to reduce self-medication with antibiotics.

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