Original Article

The Factors Leading to Parental Self Medication of Antibiotics in Children

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ABSTRACT

Objective: To determine the factors leading to parental self-medication of antibiotics in children.
Study Design: Descriptive Cross sectional study
Place and Duration of Study: This study was conducted at the Department of Paediatrics of Al- Nafees Medical College and Hospital, Isra University Islamabad from June 2022 till November 2022.
Materials and Methods: In this study 100 children aged less than 12 years were enrolled who were administered antibiotics by their parents without consulting a doctor. Parents were interviewed via pre designed structured questionnaire that was designed in English and translated into Urdu. We explored the factors that lead self-administration of antibiotics by parents to their children and parental understanding about disadvantages of irrational use of antibiotics.
Results: 30% parents were aware about disadvantages of irrational use of antibiotics. Most misused antibiotic was Cefixime which was used by 23.7% subjects. Most common cause of self-administration of antibiotic was fever (80.6%). Mothers started antibiotic in 65.6% cases. Educated parents were more involved in self-medication of antibiotics. 42% parents started antibiotic themselves as the previous child responded to same antibiotic in past. Most common source of antibiotic was previous prescription paper (43%).
Conclusion: Self administration of antibiotics by parents to children is quite common and is contributing to irrational use of antimicrobial agents which is resulting in antimicrobial resistance. Awareness regarding this issue should be spread among masses especially parents to prevent this global health hazard. More over effective policies should be made to limit easy access to antibiotics.
Key Words: Antibiotcs, self-medication, parents, children, irrational, resistance

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INTRODUCTION

The discovery of antibiotics is considered as the biggest achievement of the last century.[1] They are life-saving drugs that have played a pivotal role in improving quality of life and increasing life span of people. But another aspect of this picture is the dilemma of rapidly increasing antibiotic resistance which is considered a major health concern throughout the world. Major cause of antibiotic resistance is its irrational use.[2]

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Every year around 7 lac people die due to antibiotic resistance.[3] Pakistan is the 3rd largest consumer of antimicrobial agents in the third world countries.[4] The practice of self-administration of medications have risen in both third world nations and developed countries. Antimicrobials are amongst the most frequent medicines that are taken by patients without advice of the doctors.[5] A research performed in Luthiana revealed that prevalence of self-antibiotic administration is 22%.[6]

Wise et al. found that twenty percent of antibiotics consumed are prescribed within the hospital settings where as eighty percent of them are used without prescription.[7] Antibiotics are usually considered to be "magic drugs" that have the potency to treat any illness.[8]

In paediatric population parental belief and knowledge is a key determinant for prescribing antibiotics for common childhood infections.[9] Although most of the upper respiratory tract infections in children are caused by viruses, still antimicrobial agents are frequently used to treat them. Research has proved that around fifty percent of the infections of the upper part of respiratory tract are managed by the use of antimicrobial agents worldwide.[10] Parents have no clear concepts about

benefits and side effects of antibiotic usage.[11] Availability of antibiotics without appropriate medical prescription at the pharmacies have paved the way for parents for self-administration of antimicrobial agents in children which has worsen the scenario.[12] Around 75% of all oral antibiotics are purchased without appropriate prescription from a medical practioner.[13]

The aim of this study is to determine and explore the factors that lead to self-administration of antibiotics by parents among paediatric population along with knowledge of parents regarding use of antibiotics in common paediatric infections, so that recommendations can be made to limit easy access of antibiotics to common people thus contributing in decreasing the rapidly spreading antibiotic resistance globally.

MATERIALS AND METHODS

The present study was conducted in the outpatient and inpatient department of Al- Nafees medical College and Hospital (ANMCH), Isra University Islamabad from June 2022 till November 2022. ANMCH is a teaching hospital located in Islamabad capital territory. This study was approved by Ethical review board committee of ANMCH. Subjects of the study were parents of 100 children less than 12 years of age who have self-medicated their children with antibiotics without prescription from a doctor in previous 1 month. Parents were informed about the research prior to the interview and all the information was documented in a pre-designed proforma. Confidentiality of the patient was strictly maintained. All interviews were conducted by trained research physicians. The questionnaire designed consisted of 2 sections described as follows.

1. Section I was comprised of socio-demographic details of the respondents.
2. Section II reflected the parent's knowledge, attitude and practice about parental self-antibiotic administration in children.

RESULTS

Our study was conducted on 100 patients of which 50 (50%) were male & 50 (50%) were female. The average age of participants was 47.2 ± 36.4 months. Fever and cough were the most common indications to start antibiotics. 81% parents started antibiotics in response to fever, whereas 53% parents started antibiotics in response to cough as shown in Figure 1.

Cefixime was found to be the most common antibiotic given by the parents (23%), followed by metronidazole (17%) and Amoxicillin-Clavunate (15%) as shown in Figure 2.

The reasons that parents did not seek medical help were explored and it was noted that most parents started antibiotics because another child had used the same antibiotic previously (42%). Some parents (28%) believed that infections are not treatable without antibiotics, whereas others believed that high grade fever by itself was in indication to start antibiotics (23%) as shown in Table 1.

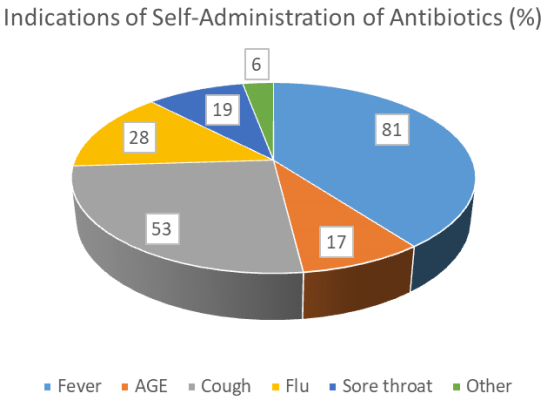

Figure No.1: Indications of Self-Administration of Antibiotics (n=100)

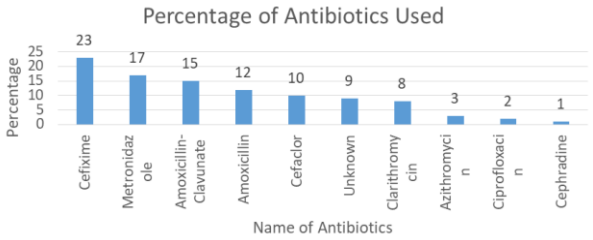

Figure No.2: Percentage of antibiotic used (n=100)

Table No.1: Depicts the various reasons parents opted to start antibiotics (n=100)

Reason for Administration	Number	%
Sibling used same Antibiotic	42	42
No response without Antibiotic	28	28
High grade fever is an indication for antibiotic use	23	23
Antibiotic speed recovery	13	12
Antibiotic reduce complications	2	2
Access to health not feasible	2	2
Financial constraints	2	2
Other	2	2

Table No.2: Illustrates Correct dose and frequency of antibiotics used and source of antibiotics (n=100)

	Frequency	Percentage
Correct dose	34	34
Correct frequency	36	36.6
Course completed	24	24.7
Prescribed by whom		
Antibiotic at home	10	10
Directly form pharmacy	35	35
Left over drug	5	5
Previous prescription	42	42
Telephonic advise	8	8

Our study showed that 34% gave correct dose of antibiotics, 36% gave antibiotics in the correct frequency and only 24% completed the antibiotic course. Antibiotics were started by mothers in 64% cases and fathers in 28% cases. In 42% cases parents had a previous prescription, whereas in 35% cases the antibiotics were taken directly from the pharmacy as shown in Table 2. Our study also showed that 30% parent were aware of misuse of antibiotics while 24% were aware of the disadvantages of improper use of antibiotics.

DISCUSSION

Overuse of antibiotics can cause uprise in antimicrobial resistance. To address the issue of antimicrobial resistance due to misuse in community, parental understanding about correct use of antibiotics is of utmost importance. [12]

Our study found out that only 30 % parents were aware about disadvantages of excessive use of antibiotics. A similar study conducted in Peshawar showed that 26% parents were not aware of side effects of antibiotic use. While a study carried out in China found that 61% parents agreed that there is irrational use of antibiotics in China and 63% knew that it is causing resistance against antimicrobial agents.[13]

In our study most misused antibiotic was Cefixime which was taken by 23.7% of patients, followed by Metronidazole (17.2%) and amoxicillin clavulanic acid (15.1%). Similar study conducted in Yemen found that most self-administered antibiotic was Amoxicillin (30%), followed by amoxicillin clavulanic acid i.e 20%.[14]

Most common reason for parental self-administration of antibiotic was fever (80.6%), cough (51.6%) and flu (26.9%). Similar results were seen in a study done in China which showed most common reason was fever (60.98%), cough (58.54%) and sore throat (34%).[15] Another study from China showed that reason for self-medication by parents in children was cold (85.6%) and sore throat (53.9%).[16]

Our study found out that 35.5% used correct dose of antibiotic, 36.6% administered antibiotics in correct frequency and 24.7% completed course of antibiotics. In 65.6% cases mother started antibiotics while father started antibiotics in 27% cases. Similar results were found in a study from Jordan where it was found that mothers were more likely to start antibiotics in children without prescription.[17]

Most common reason for self-administration of antibiotic according to our study was parental perception that the child's sibling responded to same antibiotic when he had similar symptoms (42%). Next most common reason was parent's belief that the disease will not settle without antibiotic (24.7%).

Most common source of antibiotic was previous prescription paper (43%) followed by direct purchase from pharmacy 34.4%. it was found that 10.8% parents self-medicated their children by antibiotics kept at home, while data from Trinidad and Tobago showed 21.8% parents used antibiotics stored at home without consulting a physician.[18] A study conducted in Beirut, Lebanon showed that 22% parents kept left over antibiotics at home for future use.[19]

Educated parents are more involved in self-administration of antibiotics. In around 38% cases both parents had master's degree. It was consistent with a study carried out in Peru which showed that parents with less education level were less likely to self-medicate their children probably because of low socio economic status.[20]

CONCLUSION

Self-administration of antibiotics by parents to children is quite common and is contributing to irrational use of antimicrobial agents which is resulting in antimicrobial resistance. Health care professionals need to educate parents about irrational use of antibiotics and globally alarming antimicrobial resistance. More over policies should be made to limit access to antibiotics for general public unless prescribed by a qualified health physician. This will help in reducing antimicrobial resistance worldwide.

Author's Contribution:

Concept & Design of Study:	Huma Bashir Janjua
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Data Analysis:	Syed Saif Ur Rehman
Revisiting Critically:	Taimur Khalil Sheikh, Hafsa Hashmi
Final Approval of version:	Huma Bashir Janjua

Conflict of Interest: The study has no conflict of interest to declare by any author.

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