SELF ADMINISTRATION OF ANTIBIOTICS IN RESPIRATORY TRACT INFECTIONS BY PARENTS TO THEIR CHILDREN

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ABSTRACT

Background: Currently self-medication of antibiotics in respiratory tract infection by parents to their children is one of the major public health issue worldwide and an important factor contributing to the development of bacterial antibiotic resistance.

Objectives: To assess the knowledge, practices and extent of self medication of antibiotics by the parents in their children with upper respiratory tract infections (URTI), and determined the factors related to it in Hayatabad township Peshawar.

Methodology: A community based cross sectional descriptive study was conducted in Hayatabad township Peshawar, from 1st March 2012 to 30th August 2012. A total of 400 parents of different literacy and income level were interviewed through structured questionnaire.

Results: Out of 400 parents 62.5% were female with age more than 30 years. 86% parents educational level was high school and above. Majority of parents (81%) had satisfactory economic status and access to health services (89.5 %).

Majority of the parents (92.5%) agreed that their children were suffering from URTI. 69.75 % parents believe that they knew about antibiotics and their source of information was physician 65%, TV & newspaper 6.5% and friends & family relatives 28.5%. Around 47.25% parents believed that antibiotic cure all infections when received on time.

The most common symptoms for self-administration of antibiotics were cough 23.4%, ear pain 18.11%, fever 17.66%, sore throat 12.6%, nose discharge 12.94%, hoarseness 9.55% and other symptoms 5.74%. 50.25% parents believe that antibiotic decreases complications of URTI. 71% parents check expiry dates before using antibiotics. Overall there was poor awareness with regard to side effects, antibiotic resistance and drug efficacy.

Conclusion: The results of the study confirm that antibiotic self-medication is a relatively common problem in Hayatabad township Peshawar. Despite good access to health care facilities parents self administered antibiotics in children without prescription due to various reasons.

Key Words: Parents, children, antibiotics, upper respiratory tract infection, antibiotic resistance.

INTRODUCTION

Misuse of antibiotics is currently one of the major public health issues worldwide. Although antibiotics have no effect on viral agents it is often inappropriately used by parents to treat viral infections e.g. upper respiratory tract infections in children. Such use can lead to the development of antibacterial resistance, emergence of new strains, slows down child growth, increasing the burden of chronic diseases, increasing financial burden and development of side effects. The new resistant microbial strain is easily spread within environments where poor sanitary conditions are common and immune system of substantial proportion of the population is compromised[1,2].

Several contributing factors are evidently associated with the overuse of antibiotics for instance cultural factors, behavioral characteristics, socio-economic status, level of education, lack of health education and parent's pressure on the doctors[3,4].

Self-medication is more common in developing countries including Pakistan, due to various factors such as unrestricted access to antibiotics, lack of regulation over drugs, physician and pharmacist prescribing and dispensing antibiotics without regard to the cause of infection.[5] It is estimated that 70% of the world antibiotics are used in the developing countries[6].

Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms[7,8].

This study was conducted to assess the knowledge of correct use and side effects of antibiotics by parents, literacy level of parents and the extent of self administration of antibiotics, and determined the factors related to it in Hayatabad township Peshawar.

MATERIAL AND METHODS

This community based cross sectional descriptive study on parents' knowledge, attitudes and practices on antibiotic use in children with URTI in Hayatabad township Peshawar was conducted over

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six months period. The sample size included 400 parents of different literacy level. Selection of the participants was based on non probability convenient sampling technique. A structured questionnaire was prepared and distributed. Informed consent was obtained after briefing them on the objectives of the study. Parents were asked questions related to demographic information such as age, gender, social status and level of education. Questions were aimed to estimate the degree of awareness toward antibiotics and symptoms which prompts them to use these medicines. Lastly they were asked about factors leading to the use of antibiotics without prescription.

The statistical analysis was conducted by using Microsoft Excel version 2010. Parents' answers were analyzed using the 5-point Likert scale.

RESULTS

The sample size was 400 parents, mothers were 250 (62.5%) and fathers were 150 (37.5%). With regard to age, less than 30 years were 88 or 22%, between 30-40 years were 182 or 45.5% and above 40 years were 130 or 32.5%. In case of literacy, matriculate were 100 (25%), graduates were 109 (27.25%), postgraduates were 134 (33.5) and illiterate were 57 (14.25%). Family income showed that 76 (19%) fall in low category, 212 (53%) in moderate where as 112 (28%) in high income category. Access to health services showed that 256 (64%) had good access, 102 (25.5%) had moderate access and 42 (10.5%) had poor access. Children suffering from upper respiratory tract infection (URTI) were 370 (92.5%) and 30 (7.5%) had no infection. With regard to source of information 260 (65%) indicated physician, 26 (6.5%) as TV & newspaper and 114 (28.5%) friends and family relatives. Parent knowledge about antibiotics use showed that 279 (69.75%) had some knowledge whereas 121 (30.25%) had no knowledge. 25% people were in favor of using antibiotics for viral infections while 43.75% were uncertain.

Figure 1: Antibiotics must be administered in any case once a child has fever.

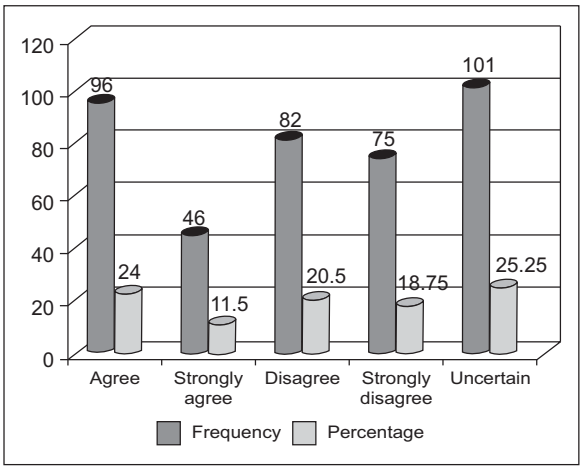

Figure 2 : As most of the URTI are of viral cause, they must not be cured with antibiotics

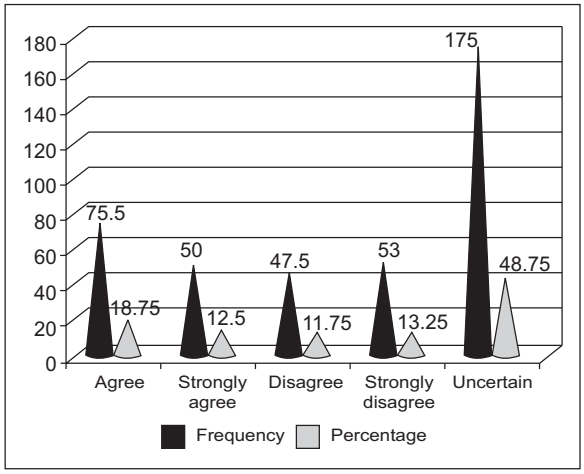

Figure 3: Child will be quickly cured if it receives antibiotics on time

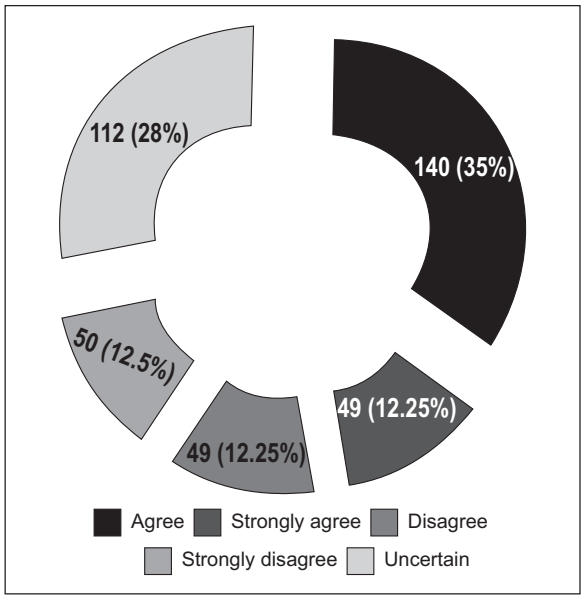

Figure 4: Scientists can always produce new antibiotics that are able to kill the resistant bacteria

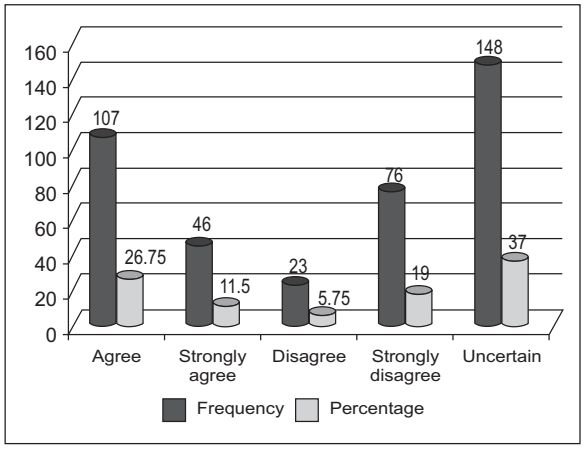

Figure 5: Antibiotics do not have side effects.

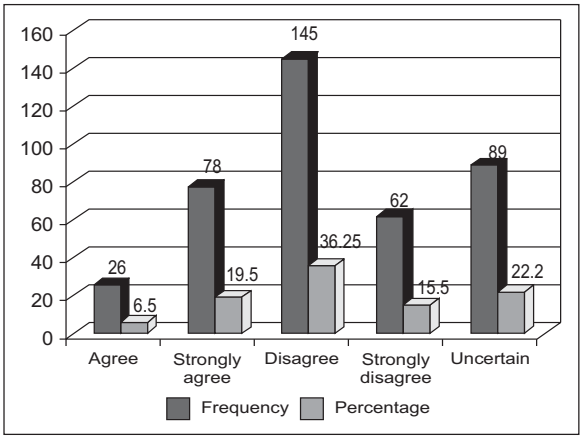

Figure 6: Repeated administration without any reason decreases their efficacy

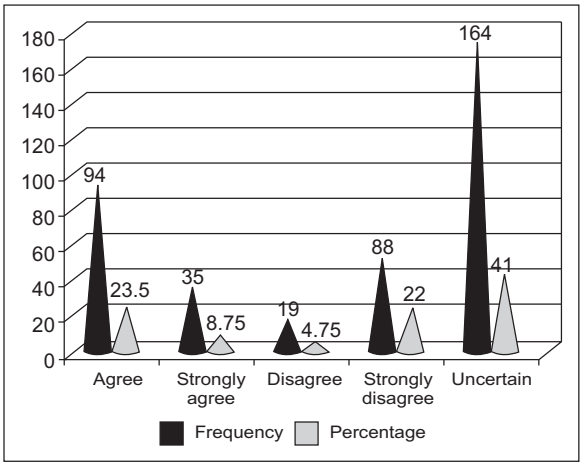

Table 1: Antibiotics decrease complication of URTI

Category		Frequency	Percentage
Antibiotics decrease complication of URTI	Agree	139	34.75
	strongly agree	62	15.5
	Disagree	12	3
	strongly disagree	35	8.75
	Uncertain	152	38

Table 2: Parents checking expiry dates before using antibiotics

Category		Frequency	Percentage
Parents checking expiry dates before using antibiotics	Yes	284	71
	No	116	29

Table 3: Knowledge about side effects of antibiotics use

	Category	Frequency	Percentage
Knowledge about side effects of antibiotic use	Yes	153	38.25
	No	247	61.75

Figure 6: Therapy to expect from pediatrician for the child suffering from URTI

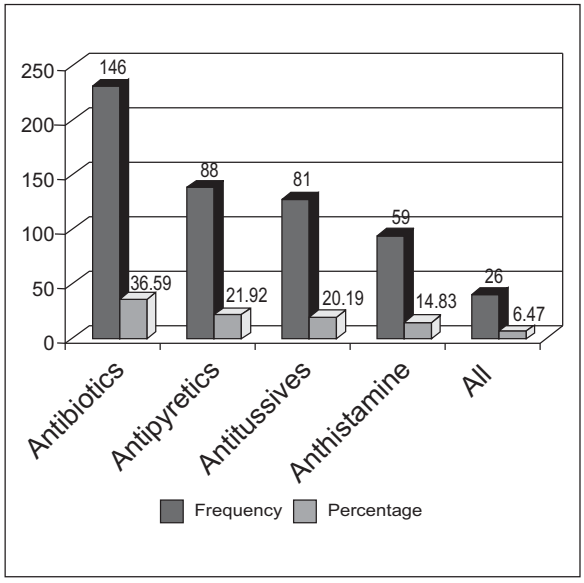

Figure 7: Symptoms which prompts parents to self administer antibiotics to their children

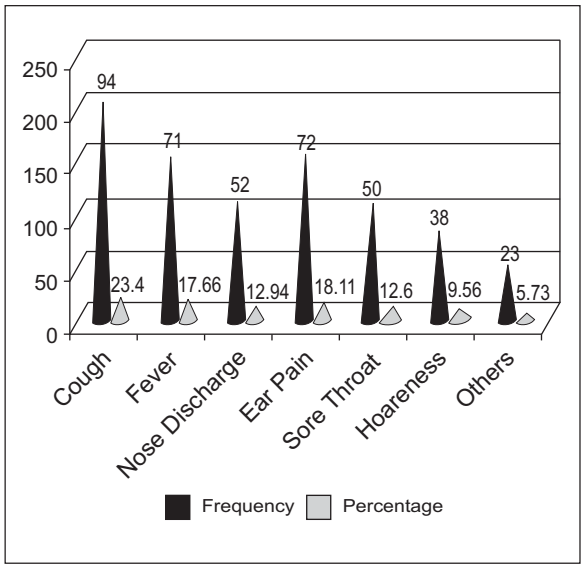

Table 4: How often would you like your pediatrician to prescribe antibiotics for your child when suffers from:

Symptoms		Frequency	Percentage
Cold	Always	75	18.75
	Most of the time	80	20
	Never	117	29.25
	Often	65	16.25
	Sometimes	63	15.75
Nose Discharge	Always	33	8.25
	Most of the time	63	15.75
	Never	131	32.75
	Often	96	24
	Sometimes	77	19.25
Sore throat	Always	98	24.5
	Most of the time	64	16
	Never	71	17.75
	Often	99	24.75
	Sometimes	68	17
Cough	Always	78	19.5
	Most of the time	74	18.5
	Never	80	20
	Often	100	25
	Sometimes	68	17
Vomit	Always	64	16
	Most of the time	95	23.75
	Never	103	25.75
	Often	58	14.5
	Sometimes	80	20
Fever	Always	110	27.5
	Most of the time	60	15
	Never	67	16.75
	Often	65	16.25
	Sometimes	98	24.5
Ear pain	Always	130	32.5
	Most of the time	59	14.75
	Never	67	16.75
	Often	76	19
	Sometimes	68	17

Table 5: How often would you give your child antibiotics without the pediatrician's advice for the following reasons

Symptoms		Frequency	Percentage
Because you didn't have enough time or money	Always	51	12.75
	Most of the time	82	20.5
	Never	126	31.5
	Often	64	16
	Sometimes	77	19.25
Because you thought that your child's condition was not serious enough	Always	87	21.75
	Most of the time	66	16.5
	Never	74	18.5
	Often	89	22.25
	Sometimes	84	21
Because your pediatrician had prescribed the same antibiotics in the past for the same symptoms	Always	107	26.75
	Most of the time	71	17.75
	Never	89	22.25
	Often	71	17.75
	Sometimes	62	15.5
Because a pharmacist recommended the antibiotic	Always	55	13.75
	Most of the time	111	27.75
	Never	119	29.75
	Often	75	18.75
	Sometimes	40	10

DISCUSSION

Antibiotics are the most commonly used medications worldwide and are of tremendous value to the public health. Despite importance, the efficacy of antibiotics therapies is threatened by resistance to it and main cause is indiscriminate self-administration of antibiotics.

According to our study the practice of administration of antibiotics to children is done more by mothers (69.5%) as compared to fathers (37.5%).

In a study conducted in different countries like, Sri Lanka, India, Palestine and Egypt, involving edu-

cated persons, it was noticed that self administration of antibiotics was quite high e.g. it was 52.5% in Egypt and 47% in Palestine. The results were comparable with our study which showed that self medication was around 85.35% in literate and 14.25% in illiterate persons.[9,5,10,11]

Self-medication of antibiotics thus surprisingly increases with higher educational background. Normally, education is strongly connected with better employment chances, higher income and holding some forms of medical insurance. But in our community we noticed that low income may be one of the reasons to avoid a practitioner fee and administer antibiotics without prescription. Another reason for this practice may be that educated people think themselves as quite capable of diagnosing symptoms of minor ailments and feel no need to consult doctor.

A KAP study done in Greece revealed that 74% of the parents expected that antibiotics will treat their children having URTI's.[12] While in our study 92% parents believed that URTI's can be treated with antibiotics. In Pakistan antibiotics are available at pharmacies or drug shops without doctor's prescription. The easy access to antibiotics develops a health culture where people engage in self-diagnosis by noticing treatment outcomes, return to old prescription medication for what they see as recurring illness. They try to acquire medication in early stages of the illness to avoid more severe symptoms, and put off the expense and effort of seeing medical practitioners until known medications fail.

The study of Bragshaw and Keller[13] that patients do not have complete knowledge about the indications and adverse effects of antibiotics go parallel to our study which shows 61.75% people are unaware of side effects of antibiotics, hence incomplete or lack of knowledge is the major problem in antibiotics overuse.

The people cannot differentiate between viral and bacterial infection and use antibiotics for viral infection too. A study conducted by Cespedes and Larson[14] confirm that people inaccurately believe that antibiotics treat's viral infections. Our study also indicates that 25% people were in favor of using antibiotics for viral infections while 43.75% were uncertain. The normal course of viral infection is usually 4-5 days and antibiotics are also used for this much time. Thus people feel that they have been cured by use of antibiotics. This encourages them to use antibiotics without prescription. This problem is quiet evident in family setting, because both antibiotics and viruses are shared.

In our study 47.25% of parents belief that use of antibiotics lead's to quick recovery as compared to 32% in the UK study,[15] and 19% in a Swedish study.[16]

According to a study done by Hoan Le T, Ottosson E, Chue T.K et al, people were unaware of the phenomenon of resistance and decrease efficacy on repeated use of antibiotics.[17] In our data 41% people were unaware of these facts hence the finding coincided. The degree of resistance arises from genetic or adaptive changes. Bacteria produce resistance due to overuse and misuse. When people stop using the antibiotic before the completion of the course they make bacteria stronger and more resistant against antibiotics.

In terms of practice and attitude of parents towards antibiotics use in their children, our findings showed that it's use was 23.4% for common cold and 12.6% for sore throat. The results are similar to the study conducted in Vietnam i.e. 34% for cough and 32% for sore throat.[18]

CONCLUSION

The results of this study confirm that antibiotic self-medication is a relatively frequent problem in Hayatabad area, one of the posh and modern town of Peshawar. Without the knowledge about the cause of URTI or fever, whether bacterial or viral, some of the parents were in favour of giving antibiotics. It is seen that whenever the parents visit pediatricians regarding the cure of their child, they expect some specific kind of therapy, which when do not meet their expectations they do self-administration of antibiotics.

Other Factors aggregating self-medication were perception of illness in child, high cost of health care, prior experience with antibiotics, and free access to antibiotics in the pharmacies without prescription.

Recommendations:-

- Health education campaigns as well as public awareness campaigns to reduced the misuse of antibiotics in children with upper respiratory tract infections.
- Legislation to stop sale of antibiotics without prescription on pharmacies.

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