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Research Article

Drug Therapy in Upper Respiratory Tract Infections in Paediatric Patients and Parental Attitude: A Survey in a Multicenter Hospital

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Abstract: A cross-sectional study involved 262 parents with their children affected with URTI was surveyed between March 2014 to December 2014 in a multicenter hospital, Kirumampakkam, Puducherry. The research was to assess the parental knowledge, attitudes and practice on antibiotic use for childhood upper respiratory tract infection. The results conclude that 43% parents believed that weather was the main cause of acute URTI, 26% was due to intake of chilled food & 22% was by germs. In the treatment therapy 33 % parents believed that antibiotics were helpful to treat URTI, 30% antibiotics were unnecessary and 23 % left it to physician's discretion. The study showed that parents have inadequate knowledge, negative attitude and poor practice on antibiotic use foracute URTI in children. Improved parental education may reduce unnecessary antibiotic prescription and antimicrobial resistance in the community.
Keywords: URTI, Antibiotics, Parental attitude, Knowledge.

INTRODUCTION

Common cold induced by different viruses and the incubation period, ranging from 48-72 hrs. Most colds are caused by rhinovirus infection and others like *Coronavirus*, *Adenovirus*, *Para-Influenza Virus*, respiratory *Syncytial virus* and *Influenza virus (A + B)*. *Influenza virus* has been shown to produce consistently more severe symptoms in all age groups when compared to rhinovirus [1]. The infections of the upper respiratory tract including nose, the para nasal sinuses, adenoids, tonsils, nasopharynx and Eustachian tube is the most frequently occurring illness of childhood. Viral infections have been found to cause the majority of upper respiratory tract infections (URTI) and resolve spontaneously, antibiotic treatment is needed only if symptoms persist [2]. In present scenario antibiotics are highly misused and lead to resistant microbe's hence new drugs, and modes of therapy are also steadily being introduced in the worldwide was supported by several studies [3, 4]. The current study explores the parental attitudes and knowledge, physician practices regarding antibiotic use for children ages 1 to 5 years old, with a primary focus to monitor and reduce antibiotic misuse in children.

METHODOLOGY

The study was carried out in a multicenter hospital, Kirumampakkam, Puducherry from March 2014 to December 2014. The inclusion criteria were all consenting parents whose wards are between the ages 1 to 5 years with symptoms suggestive of URTI (less than 7 days duration of running nose or blocked nose, cough, sore throat, Acute suppurative otitis media without any other localizing symptoms)were included in the study. 262 parents who fulfilled the criteria were included and the questionnaires were answered by the parents. The data's were kept confidential in accordance with ethics. A pilot study was conducted on 40 parents in February 2014; with the questionnaire used in the study. The details of the data collected were entered using Epi-Info 3.1.0 and were analyzed with SPSS.

RESULTS AND DISCUSSION

In total, 262 primary caregivers participated in the study (Table 1), of them 187 (71.37%) were mothers and remaining (29.62%) fathers. Among the participants 84 (32.06 %) were in 26 to 30 years age group followed by 66 (25.19%) in 30 to 35 years age group. Surprisingly one third of the participants 86 (32.82%) were graduates and less than 15.26% had not completed high school. Nearly one half 49.23% of the primary care takers belonged to class IV and less than 1.56 % belonged to class I reflecting the poor economic conditions of the participants.

The Table 2 illustrates the Parent's knowledge on URTI, out of 262 Parent's 113 (43.12%) attributed acute respiratory infection due to weather change, 68 (25.94%) are consumption of chilled foods, 58 (22.13%) microbes, 15 (5.72 %) other affected family members and the remaining 8 (3.05%) has no idea about the etiology of URTI.

The Table 3 reveals Parent's attitude and practice on antibiotic use and nearly one third of the parents 86 (32.82%) believed that antibiotics shorten the duration of illness and insists to be prescribed, 79 (30.15%) parents insisted the physician not to prescribe, 60 (22.9%) parents were unaware of antibiotics and left to free hands to physicians and whereas 37 parents (14.12%) indulged in self-medication.

The Table 4 notifies that, among the 147 children prescribed with antibiotics 112 (76.19%) parent's stopped it prematurely as the symptoms subsided, 17 (11.56 %) complaints that child not taking, 15 (10.20%) children did not take antibiotics prescribed due to financial constraints whereas in 3 (2.04%) children antibiotics were stopped because of adverse effects thus the study ended with the complete course of antibiotics was not taken by not even a single child for 5 to 7 days as recommended by the physician. This is the first study on parental attitude and practice on antibiotic use in young children with URTI. This is a cross-sectional study that included 262 parents of children aged 1 to 5 years with symptoms suggestive of URTI, who attended multicenter hospital, Kirumampakkam, Puducherry. A standard treatment guideline as shown in the Table 5 was followed to treat URTI [5-9]. Out of 262 patients only 147 children prescribed with antibiotics and others are due to viral.

Table 1: Demographic characteristics of parents

Demographic characteristics	Total	Percentage (%)
Gender		
Female	187	71.37
Male	75	29.62
Age of parents (yrs)		
20-25	30	11.45
26-30	84	32.06
31-35	66	25.19
36-40	34	12.97
41-45	30	11.45
>46	18	7.87
Education		
Primary & middle	40	15.26
High	80	30.53
Secondary	56	21.37
Graduates & PG	86	32.82
Socio-economic status		
Class I	4	1.56
Class II	20	7.63
Class III	51	19.46
Class IV	129	49.23
Class V	58	22.13

Table 2: Parent understands on cause of URTI

URTI causative factors	Total	Percentage (%)
Change in weather	113	43.12
Intake of chilled foods	68	25.94
Organisms	58	22.13
Other members affected in the family	15	5.72
Don't know	8	3.05

Table 3: Parent's attitude on antibiotic use

Parent's response	Total	Percentage (%)
Requested antibiotics	86	32.82
Don't want- refused antibiotics	79	30.15
Left to the decision of the doctor	60	22.9
Self-medicated	37	14.12

Table 4: Parental practices on prescribed antibiotics

Usage of antibiotics	Total	Percentage (%)
Antibiotics stopped prematurely	112	76.19
Child not taking	17	11.56
Unaffordable	15	10.20
Adverse effects	3	2.04
Antibiotics taken for 5 to 7 days	0	0

Table 5: URTI treatment pattern

Streptococcal pharyngo tonsillitis	Amoxycillin, 25 mg/kg twice daily/ Azithromycin, 10 - 20 mg/kg once daily/ Cefpodoxime, 4 mg/kg.
Acute otitis media and Acute bacterial sinusitis	Paracetamol (10 - 15 mg/kg 4 - 6-hourly) 3 days and Amoxycillin / Amoxycillin-clavulanate BD / Cefpodoximeproxetil 8 - 16 mg/kg BD/Cefprozil, 15 - 30 mg/kg BD/ Cefuroxime axetil, 15 - 30 mg/kg BD.
Antibiotics for β-lactam allergy	Azithromycin, 10 mg/kg OD 3 days/ Clarithromycin, 7.5 - 15 mg/kg BD for 5-7 days Erythromycin estolate, 40 mg/kg BD for 5 - 7 days.
Antihistamines	Chlorphemramine / Cetirizine
Additional supplements	Vitamin C/multivitamin/ Zinc

CONCLUSION

This study had documented lack of knowledge about URTI, negative attitude towards antibiotic usage and poor practice among parents of URTI affected children. Out of 262 patients only 147 children prescribed with antibiotics and others are due to viral. By initiating parental educational interventions, strict enforcement of over-the-counter sale of antibiotics, establish evidence-based guidelines of URTI for doctors and with regular medical audit of treatment for acute URTI we can reduce unnecessary antibiotics prescription and curtail the burgeoning problem of bacterial resistance in children. Thus the study concludes improved parental education may reduce unnecessary antibiotic prescription and antimicrobial resistance in the community.

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