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Original Research Article

Prospective study to assess knowledge regarding wheezing disorders among mothers of children aged between 6 months to 10 years: hospital based study

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ABSTRACT

Background: Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by history of Respiratory symptoms, most common being wheeze, shortness of breath, chest tightness and cough that vary over time. Medical professionals are trained to manage and prevent asthma exacerbations, however prevailing environmental triggers along with non adherence to medical advice are major challenges in prevention of asthma exacerbations. This occurs because of poor parental knowledge regarding the disease. Parents specially Mother play crucial role in preventing & Management of acute exacerbation of Asthma at home. The objective of this study was to assess maternal knowledge regarding wheezing disorders a among children aged between 6 month - 10 years.
Methods: The present study is a prospective study, carried out at department of pediatrics, at Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar from October 2016 - January 2018 over period of 15 months. Total 275 mothers of children aged between 6 month -10 years when enrolled as sample. The Aim of the study was to assess knowledge of mothers of wheezing children between 6 month-10 years and to educate and counsel mothers about home management of wheezing episode.
Results: Early recognition of asthma exacerbations at home in order to intensify treatment early can often prevent worsening of asthma. Lack of skill and cooperation is most common cause for aerosol delivery problems in children. The present study shows that although 80% of the mothers were aware of aerosol therapy but only 37.8% were using it at time of sudden wheezing attack at home. About 14.9% mothers considered using steam inhalation and 37% mothers using medications prescribed at time of previous attack beneficial.
Conclusions: The present study was conducted to asses knowledge about asthma in mothers of children aged between 6 month-10 years having wheezing disorders. Study revealed that mothers had poor knowledge about home management of an acute attack of asthma. Asthma management programmes should focus on augmenting awareness of parents, eliminate social stigma and misconceptions regarding asthma in community. This study is a step towards it.

Keywords: Asthma, Aerosol, Peak expiratory flow, Wheezing

INTRODUCTION

Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by history of Respiratory symptoms, most common being wheeze, shortness of breath, chest tightness and cough that vary over time. The GINA (Global Initiative for Asthma) committee crafted this definition to portray the

characterstics that are typical of Asthma and highlight the features that distinguish it from another lung disease.

Asthma is a chronic inflammatory disorder of the airways. Chronically inflamed airway is hype responsive, they become obstructed and airflow is limited due to bronchoconstriction, Mucus plugs and inflammation. This is aggravated when airways are exposed to various risk factors.[1]

Asthma affects an estimated 300 million individuals worldwide. The prevalence of asthma is increasing, especially in children. Annually, the World Health Organization (WHO) has estimated that 15 million disability adjusted life years (DALY) are lost and 2.5 lacs asthma deaths are reported worldwide. Approximately 5 Lac annual Hospitalization in individuals aged 18 years or younger are due to asthma.[2]

Common Risk factors include exposure to allergens such as domestic dust, mites (in carpets, beddings, furnishings) Animal fur, pollen, molds, occupation irritants like tobacco, smoke, air pollutions. Respiratory infections, exercise, emotional expressions, chemicals and drugs. There is good evidence of hereditary occurrence of asthma in families. Interaction between environmental and genetic factors results in Asthma exacerbations. Genetic factors have very important influence.[3] Research on genetic mutations further reveal synergistic nature of multiple Mutations in path physiology of Asthma. Some studies highlight the importance of genotypes in contributing to asthma susceptibility and allergic sensitization, as well as specific asthma treatments.[4]

In most children, asthma develops before age of 5 years. Among Infants 20% have wheezing with only upper Respiratory tract infection (URTI). Children in whom wheezing begins early in conjunction with allergies are more likely to have wheezing when they one aged between 6-10 years. Similarly, children in whom wheezing begins after age of 6 years, wheezing is more likely to continue when they are aged 10 years.[5]

Wheezing in children is the most common symptom. Results from various longitudinal studies indicate that term "ASTHMA" include different phenotypes like transient early wheezing, non atopic wheezing and atopic wheezing (asthma). Asthma can begin at any age and is determined by a more chronic condition, provoked by various triggers and is frequently associated with family history of atopy. The diagnostic and therapeutic challenges in diagnosing asthma among children aged between 6 months to 10 years require comprehensive approach.

Medical professionals are trained to manage and prevent asthma exacerbations, however prevailing environmental triggers along with non adherence to medical advice are major challenges in prevention of asthma exacerbations. This occurs because of poor parental knowledge regarding the disease. This is not seen only in India but it's a global problem.

A study in china including 29 provinces showed that only 18% of parents had knowledge of Asthma.[6]

Prevention of Asthma exacerbations is one of the Major challenges of public Health. Parents specially Mother play crucial role in preventing and Management of acute exacerbation of Asthma at home.

The objective of this study was to assess maternal knowledge regarding wheezing disorders an among children aged between 6 months - 10 years.

METHODS

The present study is a prospective study, carried out at department of pediatrics, at Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar from October 2016 - January 2018 over period of 15 months. Total 275 mothers of children aged between 6 month -10 years when enrolled as sample. The Aim of the study was to assess knowledge of mothers of wheezing children between 6 months - 10 years and to educate and counsel mothers about home management of wheezing episode.

The following inclusion and exclusion criteria were adopted for the purpose of study.

Inclusion criteria

- Mothers of children aged between 6m -10 years, having atleast two episodes of wheezing in preceding six months.
- Mothers of children diagnosed as asthma.

Exclusion criteria

- Mothers of children ages between 6 months.
- Mothers of children having any congenital abnormalities.
- Mothers belonging to Medical or paramedical profession.

The method adopted for the collection of data was a structured interview questionnaire after obtaining of prior written informed consent from the participating mothers. The questionnaire was prepared in vernacular language Punjabi and English and Hindi too.

Questionnaire was asked as a face to face interview and responses of mothers were recorded in Performa.

Socio economic status was assessed by modified kuppuswamy scale. Estimated time required to fill one questionnaire was approximately 20-25 minutes.

The data collected in the study was statically analyzed using SPSS Software to reach conclusion.

Questionnaire included 2 sections:

- Demographic variables of the participants.
- Questionnaire related to maternal knowledge regarding asthma.

RESULTS

Sample description

The sample of present study comprised of mothers of children aged between 6 months to 10 tears having wheezing disorder. As per above mentioned inclusion criteria total 275 mothers were enrolled in this study.

Table 1: Demographic variables of the study participants.

Demographic variables	Frequency (n)	Percentage
Age of children		
6 months - 3 years	162	58.9%
3-6 years	75	27.0%
6-10 years	38	13.8%
Sex		
Male	173	62.9%
Female	102	37.1%
Education of Mother		
Iuetcete	45	16.3%
Less than High School (>10th Std)	154	56.1%
More than high school (>10th Std)	76	27.6%
Type of Residence		
Rural	177	64.3%
Urban	98	35.7%
Type of household		
Kutcha	39	14.1%
Pucca	236	85.9%
Type of final used for cooking at home		
Firewood	10	3.8%
LPG	237	86.1%
Mixed	28	10.1%
Any Pet in house		
Yes	108	39.2%
No	167	60.8%
SES of family (as per Modified kuppusiverty classification)		
Upper	38	13.5%
Upper middle	53	19.2%
Lower middle	88	32%
Upper middle	76	27.7%
Lower	20	7.2%

Out of total 275 mother, maximum number had children aged between 6 months- 3 years (n=162) 58.9%, followed by 3-6 years (n=75) 27.2%, 6-10 years (n=38) 13.8%. 62.9% (n=173) were male and 37.1 were female.

Table 2: Questionnaire related to knowledge of mother on wheezing disorders.

Question	N (number)	Percentage
Age of onset of wheezing in your child?		
6 months - 3 yrs.	143	52%
3-6 years	94	34.1%
6-10 years	38	13.8%
Does your child have Asthma?		
Yes	72	26.18%
No	203	73.22%
If yes, how did you come to know?		
Medical staff	82	29.8%
Paramedical staff	108	39.2%
Friends/ relatives	2	0.9%
Others	83	30.1%
If No what disease do you think your child has?		
Allergy	129	46.9%
Recurrent resp. tract infection	56	20.3%
Don't know	90	32.72%
Is Asthma a Hereditory disease?		
Yes	69	25.0%
No	206	75%
Is asthma a contagious disease?		
Yes	88	32%
No	182	68%
Which of the following factor precipitate Asthma in your child?		
Weather change	186	67.6%
Dust	38	13.8%
Food/drinks	18	6.5%
Exercise/ sports	33	12%
What measures you take avoid asthma attack?		
Avoid dust exposure	110	40%
Avoid outside Food/drinks	125	45.45%
No. pets at home	40	14.5%
What will you do if your child develops sudden wheezing at home?		
Give oral medicine	102	37.0%
Steam inhaler	41	14.90%
Aero sor therapy	104	37.81%
Immediately visit doctor	28	10.18%
Do you know about aerosol therapy?		
Yes	220	80%
No	45	20%
Do you know about peak flow meter?		
Yes	57	20.73%
No	218	79.27%
Do you think asthma is curable?		
Yes	68	24.73%
No	218	17.09%
Don't know	160	58.18%

Among 275 mothers only 16.3% (n=45) mother were illiterate, 56.1% (n=154) studied less than high school and 27.6% (n=76) studied more than high school.

As shown in Table 1, out of 275 mothers only 3.8% (n=10) used firewood and rest 86.1% (n=237) used LPG for cooking. 13.8% (n=38) belonged to upper class, 19.2% (n=53) belonged to upper middle socio economic status while 7.2% (n=20) belonged to lower SES status as per kuppuswamy scale.

Table 2 indicates the knowledge of mothers regarding wheezing disorders. It reveals that among total 275 children aged between 6 months - 10 years maximum that is 52.1% (n=143) had onset of wheezing between 6 month- 3 years of age followed by 34.1% (n=94) between 3-6 years. Among 275 mothers, 26.18% (n=72) mothers knew that their child had asthma while 73.2% (n=203) were not aware. 46.9% (n=129) denied that their child had asthma and considered it to be allergy and 25 (n=69) knew that it's a hereditary illness and 32% (n=88) said its contagious.

DISCUSSION

The present study was conducted at department of Paediatrics, SGRD Medical College over period of 15 months and included 275 mothers, having children aged between 6 month 10 years with wheezing disorders.

Out of 275 mothers, who accompanied wheezing children, maximum 58.9% belonged to age group 6 motnh-3years and minimum 13.8% between 6-10 years. 64.3% belonged to rural areas and 35.7% to urban area. 86.1% used LPG as fuel of choice for cooking while only 10% used firewood. Approximately 86% of all asthmatic patients enroled in study had onset of disease prior to 6 years of age.

Asthma management is a global problem due to ignorance and improper knowledge of patients about their disease.[7]

Shivbalan S in their study had shown that only 39% parents of asthmatic children accepted their child illness as asthma whereas 46% labelled it as a wheeze, 8% as recurrent chest infections and 1% as allergy.[8] In present study 26.18% (n=72) accepted that their child has asthma, 29.8% (n=82) came to know about disease by medical professional. Out of 203 parents who refused that there has asthma, 46.95% (N=129) attributed it as allergy, 20.3% (n=56) as recurrent chest infections.

It is widely known that various allergen exposure in sensitized individual can initiate airway inflammation and hypersensitivity to other irritant exposures and are strongly linkedto disease severity and persistence. In a study by Hazir T et al, rice and oily food were found to be responsive for exacerbations of asthma in 57% cases.[9] In this study, maximum 67.6% (n=186) mothers reported change in weather as most important precipitating factor for their childs illness, 13.8% dust, 6.5% outside food and drinks.

Proper and successful administration of aerosol therapy to infant or child require a comprehensive amount of skill and knowledge on part of respiratory therapy practioner. early recognition of asthma exacerbations at home in order to intensify treatment early can often prevent worsening of asthma. Lack of skill and co-operation is most common cause for aerosol delivery problems in children.

The present study shows that although 80% of the mothers were aware of aerosol therapy but only 37.8% were using it at time of sudden wheezing attack at home. About 14.9% mothers considered using steam inhalation and 37% mothers using medications prescribed at time of previous attack beneficial.

Peak expiratory flow monitoring (PEF) devices provide simple and inexpensive home use tool to measure airflow. PEF monitoring can be used as an indicator for assessing asthma severity. Zhao J et al, found that 25% of patients had knowledge about PEF monitoring whereas in this study it was observed that 20.7%knew about PEF.[6]

Parents have diverse view regarding the prognosis and treatment of asthma. In a study by Mavel Manuel et al, 50% parents answered that asthma is curable.[10] In present study 24.73% mothers thought it was curable whereas large number 58.18% were not aware of prognosis.

CONCLUSION

The present study was conducted to asses knowledge about asthma in mothers of children aged between 6 month - 10 years having wheezing disorders.

Study revealed that mothers had poor knowledge about home management of on acute attack of asthma.

Asthma management programmes should focus on augmenting awareness of parents, eliminate social stigma and misconceptions regarding asthma in community. This study is a step towards it.

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