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## INTRODUCTION

Asthma is a very common health problem of peoples, suffering over a 100 million people worldwide. Sensitization of allergy is very common risk factor for asthma in children and adults. A recent study that selected children and adults approximated population-attributable risk for 56% allergic sensitization. Furthermore more than half of patients with asthma in the United States can be categorized to Sensitization of allergy<sup>1</sup>. In population of paed, about 80% of school age children with asthma have conformation of allergic sensitization to at least one major environmental allergen<sup>2</sup>. Sensitization of allergy to the predominant allergen in a community confers a 4- to 20-fold increase in the risk of asthma<sup>3,4</sup>. Suggest the causes of relationship between allergen exposure and asthmatic development. Furthermore peoples with inadequately controlled asthma having greater incidence rates of sensitization than the well asthma controlled population. In a recent

## ASTHMATIC CHILDRENS; CLINICAL PATTERN AND FREQUENCY OF ASTHMA TRIGGERS

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**ABSTRACT... Objective:** Objective of this study to determine the clinical presentation and frequency of asthma triggers in the children suffering from asthma at Liaquat university of medical and health science. **Subjects & Methods:** This cross sectional study was carried out at Liaquat University Hospital Hyderabad. All the patients were selected from OPD and pediatric ward of LUMHS. Complete history of allergy was taken from the cases and their parents and all the triggers of asthma were documented on the proforma. **Results:** Total 100 patients were included in the study. Majority of the cases in the age group of 1- 3years and 2nd most common age group was 4- 7 years with the percentage of 39% and 33% respectively. Majority of the cases 51%, while moderate was present in 35% cases and 14% children were seen with severe asthma condition. Asthma triggers in the children was found as; Smoking, Exercise, Dust, Pets, Ice, Plants, Carpets, Eggs, Corn oil, Allergic rhinitis and Without triggers, with the percentage of 22.%, 55.%, 51.%, 10.%, 34.%, 05.%, 11.%, 12.%, 27.%, 46.% and 17.% respectively. **Conclusions:** In the conclusion of this study we concluded that allergic triggers perform the important role in the severity of asthma disease, these triggers attacks at night and early morning, so to avoid from the smoke, dust, allergens and proper management of asthma with good compliance and regular follow up of the patients.

**Key words:** Asthma, Triggers, Children.

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inner-city study of Childs with inadequately asthma controlled, a staggering 94% of Childs with evidence of allergic sensitization,<sup>5</sup> stress the potential consequence of allergic sensitization as a cause of poorly controlled asthma. Studies have also clearly reported that exposure can lead to both acute and chronic symptoms in sensitized asthmatic patients<sup>6,7,8,9</sup>.

Even though the seasonal allergens are called asthmatic triggers, generally revelation to indoor allergens may be greater given the substantial amount of time spent indoors as well as the year-round presence of many indoor allergens. In addition, among intercity asthmatic Childs, sensitivity to indoor allergens with great incidence than sensitivity to outdoor allergens, underscoring the significance of indoor allergen exposure in this population<sup>10</sup>. Even though, totally commonest allergens can be evaluated in inner city homes, sharing of allergens contains somewhat on geographic areas of the inner city<sup>11,12</sup>. Purpose of

this study to determine the clinical presentation and frequency of asthma triggers in the children suffering from asthma at Liaquat university of medical and health science.

**DATA COLLECTION PROCEDURE**

This cross sectional study was carried out at Liaquat University Hospital Hyderabad with the duration of time 6 months from January 2014 to June 2014. All of patients under the age of 12 years were selected in the study, who were registered with the diagnosis of Asthma at liaquat University Hospital Hyderabad were included in the study. In all the patients asthma was diagnosed on the basis of clinical presentation of (Wheezing, history of cough, cough worse particularly at night, recurrent wheeze, recurrent difficult breathing or recurrent chest tightness) and with the symptoms worse at night, awakening the patient, symptoms occur or worse in the presence of exercise, animal with fur, domestic dust mites, smoke and pollen or aerosol chemicals. All the patients with systemically disease such as lung cancer, congenital heart disease was excluded from the study. All the patients were selected from OPD and pediatric ward of LUMHS. Complete history of allergy was taken from the cases and their parents and all the triggers of asthma were documented on the proforma.

**RESULTS**

Total 100 patients were included in the study. Male were found in the majority with the percentage of 68% as compare to the females 32 %. Table-I.

In the present study majority of the cases in the age group of 1- 3years and 2nd most common age group was 4- 7 years with the percentage of 39% and 33% respectively, while 28% cases were noted with age group of 8-12 years. Majority of the children were found with the duration of 2-3 years and 33% of the illness duration was seen between the 3 -4 years. Table-I.

According to the classification of severity of asthma in this study acute asthma was noted in the cases with majority as 51%, while moderate was present in 35% in the cases and 14% children

were seen with severe asthma condition. Fig:No.1.

Characteristics	Frequency	%
<b>Gender</b>		
Male	68	68.0%
Female	32	32.0%
<b>Age groups</b>		
1-3	39	39.0%
4-7	33	33.0%
8-12	28	28.0%
<b>Illness duration</b>		
Less than 1 year	12	12.0%
2 to 3 years	34	34.0%
3 to 4 years	33	33.0%
Above 4 years	21	21.0%
<b>Family history</b>		
Present	44	44.0%
Absent	56	56.0%

Table-I. Baseline characteristics n= 100

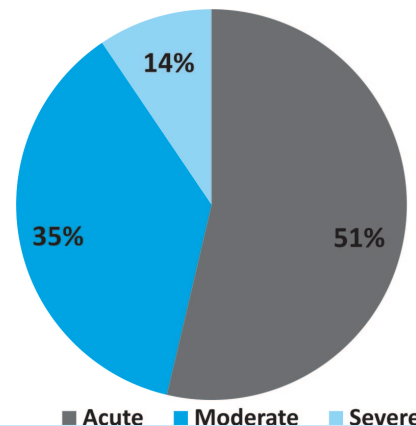


Fig-1. Distribution of disease n= 100

In the present study frequency of triggers asthma in the children was found as; Smoking, Exercise, Dust, Pets, Ice, Plants, Carpets, Eggs, Corn oil, Allergic rhinitis and Without triggers, with the percentage of 22.%, 55.%, 51.%, 10.%, 34.%, 05.%, 11.%, 12.%, 27.%, 46.% and 17.% respectively. Table No II.

Triggers	Frequency	%
Smoking	22	22.0%
Exercise	55	55.0%
Dust	51	51.0%
Pets	10	10.0%
Ice	34	34.0%
Plants	05	05.0%
Carpets	11	11.0%
Eggs	12	12.0%
Corn oil	27	27.0%
Allergic rhinitis	46	46.0%
Without triggers	17	17.0%

**Table-II. Frequency of Triggers of asthma  
(n = 100)**

## DISCUSSION

Total 100 patients were included in the study. Male were found in the majority with the percentage of 68% as compare to the females. Similarly in the study of Sharma BS, reported male in the majority in the series with the Male/ female ratio 1.56:1<sup>13</sup>.

In the study of Sue Crengle, et al showed 80% of children under 7 years of age and 34% of children 7 years or above<sup>14</sup>. While in this study majority of the cases in the age group of 1- 3years and 2nd most common age group was 4- 7 years with the percentage of 39% and 33% respectively.

76% of the children who were diagnosed with asthma after 6 years of age had a positive asthma predictive index before 3 years of age; 97% of the children who did not have asthma after 6 years of age had a negative asthma predictive index before 3 years of age<sup>15</sup>. In our study majority of the children found with the duration of 2-3 years and 33% of the illness duration was seen between the 3 -4 years. In the series of Yahya et al. showed 47% of asthmatic children to have family history of asthma<sup>16</sup>. In this study family history of asthma was documented in 44% of the cases.

Silvia de Magalhães Simões et al reported in the study Based on the modified GINA criteria, of the 397 children in the sample, 36% had intermittent asthma; 40% had mild persistent asthma; 12.8% had moderate persistent asthma; and 10.8% had severe persistent asthma<sup>17</sup>. While in this study acute asthma was noted in the cases with majority

as 51%, while moderate was present in 35% in the cases and 14% children were seen with severe asthma condition.

According to frequency of triggers asthma in the children was found as; Smoking, Exercise, Dust, Pets, Ice, Plants, Carpets, Eggs, Corn oil, Allergic rhinitis and Without triggers, with the percentage of 22.0%, 55.0%, 51.0%, 10.0%, 34.0%, 05.0% ,11.0%, 12.0% , 27.0%, 46.0% and17.0% respectively. Similar results were seen in the study of Mustafa senol, et al<sup>18</sup>.

In the controlled study of Osmorne M et al, reported that 554 HMO members with asthma found those with a dog in the home who were sensitized to dog allergen had a 49% increase in the risk of acute asthma after adjusting for other risk factors<sup>19</sup>.

A study by Suh et al, reported that incidence of allergic rhinitis and asthma to be 32.9% and 4.8% respectively<sup>20</sup>. In another study reported by Kimberly Nguyen et al, also reported similar results as compare to our study<sup>21</sup>.

## CONCLUSIONS

In the conclusion of this study we concluded that allergic triggers perform the important role in the severity of asthma disease, these episodes of attacks occur at night and early morning, so to avoid from the smoke, dust, allergens and proper management of asthma with good compliance and regular follow up of the patients will improve the quality of life of the patients and decrease the frequency of asthma attacks.

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## REFERENCES

1. Arbes SJ Jr, Gergen PJ, Vaughn B, et al. **Asthma cases attributable to atopy: results from the third National Health and Nutrition Examination Survey.** J Allergy Clin Immunol 2007;120:1139–45.
2. Huss K, AdkinsonNFJr, Eggleston PA, et al. **House dust mite and cockroach exposure are strong risk factors for positive allergy skin test responses in the Childhood Asthma Management Program.** J Allergy Clin Immunol 2001;107:48–54.
3. Squillace SP, Sporik RB, Rakes G, et al. **Sensitization**

- to dust mites as a dominant risk factor for asthma among adolescents living in central Virginia. Multiple regression analysis of a population-based study.** *Am J Respir Crit Care Med* 1997;156:1760–4.
4. Call RS, Smith TF, Morris E, et al. **Risk factors for asthma in inner city children.** *J Pediatr* 1992;121:862–6.
  5. Gruchalla RS, Pongracic J, Plaut M, et al. **Inner city asthma study: relationships among sensitivity, allergen exposure, and asthma morbidity.** *J Allergy Clin Immunol* 2005;115: 478–85.
  6. Litonjua AA, Carey VJ, Burge HA, et al. **Exposure to cockroach allergen in the home is associated with incident doctor-diagnosed asthma and recurrent wheezing.** *J Allergy Clin Immunol* 2001;107:41–7.
  7. Phipatanakul W, Celedon JC, Sredl DL, et al. **Mouse exposure and wheeze in the first year of life.** *Ann Allergy Asthma Immunol* 2005;94:593–9.
  8. Almqvist C, Wickman M, Perfetti L, et al. **Worsening of asthma in children allergic to cats, after indirect exposure to cat at school.** *Am J Respir Crit Care Med* 2001;163:694–8.
  9. Matsui EC, Eggleston PA, Buckley TJ, et al. **Household mouse allergen exposure and asthma morbidity in inner-city preschool children.** *Ann Allergy Asthma Immunol* 2006; 97:514–20.
  10. Kang BC, Johnson J, Veres-Thorner C. **Atopic profile of inner-city asthma with a comparative analysis on the cockroach-sensitive and ragweed-sensitive subgroups.** *J Allergy Clin Immunol* 1993;92:802–11.
  11. Cohn RD, Arbes SJ Jr, Jaramillo R, et al. **National prevalence and exposure risk for cockroach allergen in U.S. households.** *Environ Health Perspect* 2006;114:522–6.
  12. Cohn RD, Arbes SJ Jr, Yin M, et al. **National prevalence and exposure risk for mouse allergen in US households.** *J Allergy Clin Immunol* 2004;113:1167–71.
  13. Sharma BS, Kumar MG, Chandel. **Prevalence of asthma in urban school children in Jaipur, Rajasthan.** *Indian Pediatr.* 2012 Oct;49(10):835-6.
  14. Crengle S1, Robinson E, Grant C, Arroll B. **Pharmacological management of children's asthma in general practice: findings from a community-based cross-sectional survey in Auckland, New Zealand.** *N Z Med J.* 2011 Nov 25;124(1346):44-56.
  15. Castro-Rodriguez JA, Holberg CJ, Wright AL, Martinez FD. **A clinical index to define risk of asthma in young children with recurrent wheezing.** *Am J Respir Crit Care Med* 2000;162(4 Pt 1):1403–06.
  16. Mubashar Y, Hussain W, Maqbool S. **Distribution of risk factors in children with bronchial hyper-reactivity.** *Pak Pediatr J* 2000; 24: 61-4.
  17. Silvia de Magalhães Simões,1 Sergio Souza da Cunha,2 Maurício Lima Barreto,3 Álvaro Augusto Cruz4 **Distribution of severity of asthma in childhood.** *Jornal de Pediatria* .2010; 86;417-423
  18. Mustafa Senol, Atilla Ozcan, Basak Kandi, Semsettin Karaca, Tuba Aki and Nalan Bayram **Incidence of Atopic Stigmata and Prick Test Results in Patients with Asthma, Allergic Rhinitis and Conjunctivitis.** *ASIAN PACIFIC JOURNAL OF ALLERGY AND IMMUNOLOGY* (2006) 24: 105-109
  19. Osborne M, Pedula K, O'Hollaren M, et al. **Assessing future need for acute care in adult asthmatics: the Profile of Asthma Risk Study: a prospective health maintenance organization-based study.** *Chest* 2007;132(4):1151– 61.
  20. Suh M, Kim HH, Sohn MH, Kim KE, Kim C, Shin DC. **Prevalence of allergic diseases among Korean school-age children: a nationwide cross-sectional questionnaire study.** *J Korean Med Sci* 2011;26(3):332-338.
  21. Kimberly Nguyen, MS , MPH, Justin Peng, MPH, and Eileen Boulay, RN , BSN. **Effect of Smoking on the Association Between Environmental Triggers and Asthma Severity Among Adults in New England.** *Journal of Asthma & Allergy Educators.* Downloaded from [jaa.sagepub.com](http://jaa.sagepub.com) by guest on September 1, 2010;1-9.