

A Clinical profile and Factors associated with Bronchial Asthma in Pediatric patients at tertiary health care center

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Abstract

Introduction: The prevalence of childhood asthma is increasing worldwide. Status asthmaticus refers to an acute severe asthma (ASA) exacerbation, in which bronchial obstruction is severe and continues to worsen, or not improve, despite the institution of adequate standard therapy. **Aims and Objectives:** To study Clinical profile and Factors associated precipitating factors with Bronchial Asthma in Pediatric patients at Teerthankar Mahaveer Medical College and Research Centre, Moradabad, UP. **Materials and Methods:** This was a cross-sectional study carried out at Pediatrics Department of a tertiary health care center during January 2015 to December 2015. A total of 82 children of age 1 to 12 years old, who were newly diagnosed with bronchial asthma were included in this study. Diagnosis was made on the basis of detailed history and clinical examination of each patient. After consent from Parents of the children they were interviewed and information was collected concerning history of asthma, allergy, comorbidities, number of hospital admissions and duration of symptoms prior to treatment. The data regarding the variables was collected by pre-tested, semi-structured questionnaire. The statistical analysis done by proportions and percentages. **Result:** The majority of patients were in the age group of 5-8 yrs. i.e. 54.87% followed by 9-12 yrs. -34.14% followed by 1-4 yrs.- 10.97%. The majority of the patients were males i.e. 62.19% followed by females 37.80%. The majority of the patients were having Moderate persistent- 35.36% followed by Mild persistent in 26.82%; Severe persistent-21.95%; intermittent persistent - 15.85% symptoms. The majority of the precipitating factors for asthma were Cold air and Dust i.e. in 82.92% followed by Only Cold air in 74.39%, Only to Dust in 71.95%, H/o URTI -67.07%, Exposure to Smoke (Chulha) in 39.02%, Exposure to pollens in 35.36%, Exposure to passive smoking in 24.39%, H/o Ingestion of peculiar food in 23.17%. **Conclusion:** The majority of patients in our study were in the age group of 5-8 yrs. and was more common in males. The majority of the patients were having Moderate persistent symptoms followed by Mild persistent symptoms. The majority of the precipitating factors for asthma were Cold air and Dust, followed by Only Cold air, Only to Dust, H/o URTI, Exposure to Smoke (Chulha) , Exposure to pollens , Exposure to passive smoking in H/o Ingestion of peculiar food. **Key words:** Pediatric Bronchial Asthma, URTI (Upper Respiratory Tract infection), Triggering factors of asthma.

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Received Date: 19/05/2016 Revised Date: 12/06/2016 Accepted Date: 05/07/2016

| Access this article online | |
|---|--|
| Quick Response Code: | Website: www.medpulse.in |
|  | DOI: 10 July 2016 |

INTRODUCTION

The prevalence of childhood asthma is increasing worldwide.^{1,2} Status asthmaticus refers to an acute severe

asthma (ASA) exacerbation, in which bronchial obstruction is severe and continues to worsen, or not improve, despite the institution of adequate standard therapy. Respiratory mucosal inflammation and bronchospasm result in dyspnea, increased work of breathing, hypoxemia, and hypercapnia that may progress to respiratory failure. Although the majority of acute asthma attacks are managed at the emergency department (ED) or general ward, admission to Pediatric Intensive Care Unit (PICU) for severe cases may be life-saving. Early and appropriate therapy of ASA result in improved outcome.^{3,4,5,6} Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation causes an associated increase in airway hyper- responsiveness that

leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment⁷. Factors that may trigger or worsen asthma symptoms include viral infections, domestic or occupational allergens (e.g. house dust mite, pollens, and cockroach), tobacco smoke, exercise and stress⁸. So in our study we have seen such precipitating factors.

MATERIALS AND METHODS

This was a cross-sectional study carried out at Pediatrics Department of a tertiary health care center during January 2015 to December 2015. A total of 82 children of age 1 to 12 years old, who were newly diagnosed with bronchial asthma were included in this study. Diagnosis was made on the basis of detailed history and clinical examination of each patient. After consent from Parents of the children they were interviewed and information was collected concerning history of asthma, allergy, comorbidities, number of hospital admissions and duration of symptoms prior to treatment. The data regarding the variables was collected by pre-tested, semi-structured questionnaire. The statistical analysis done by proportions and percentages.

RESULT

Table 1: Age distribution of patients with bronchial asthma

| Age group | No. of cases | Percentage (%) |
|--------------|--------------|----------------|
| 1-4 yrs. | 9 | 10.97% |
| 5-8 yrs. | 45 | 54.87% |
| 9-12 yrs. | 28 | 34.14% |
| Total | 82 | 100.00% |

The majority of patients were in the age group of 5-8 yrs. i.e. 54.87% followed by 9-12 yrs. -34.14% followed by 1-4 yrs.- 10.97%.

Table 2: Gender wise distribution of the Patients as per

| Sex | No. | Percentage |
|--------------|-----------|----------------|
| Male | 51 | 62.19% |
| Female | 31 | 37.80% |
| Total | 82 | 100.00% |

The majority of the patients were males i.e. 62.19% followed by females 37.80%

Table 3: Distribution of cases according to severity of Symptoms

| Severity of Symptoms | No. of Cases | Percentage (%) |
|----------------------|--------------|----------------|
| Intermittent | 13 | 15.85% |
| Mild persistent | 22 | 26.82% |
| Moderate persistent | 29 | 35.36% |
| Severe persistent | 18 | 21.95% |

The majority of the patients were having Moderate persistent- 35.36% followed by Mild persistent in 26.82%; Severe persistent-21.95%; intermittent persistent -15.85% symptoms

Table 4: Distribution of the Patients as per Associated Precipitating factors

| Precipitating factors | No. | Percentage (%) |
|--------------------------------|-----------|----------------|
| Cold air and Dust | 68 | 82.92% |
| Only Cold air | 61 | 74.39% |
| Only to Dust | 59 | 71.95% |
| H/o URTI | 55 | 67.07% |
| Exposure to Smoke (Chulha) | 32 | 39.02% |
| Exposure to pollens | 29 | 35.36% |
| Exposure to passive smoking | 20 | 24.39% |
| H/o Ingestion of peculiar food | 19 | 23.17% |
| Total | 82 | 100.00% |

*More than one Precipitating factors were associated with the patients

The majority of the precipitating factors for asthma were Cold air and Dust i.e. in 82.92% followed by Only Cold air in 74.39%, Only to Dust in 71.95%, H/o URTI - 67.07%, Exposure to Smoke (Chulha) in 39.02%, Exposure to pollens in 35.36%, Exposure to passive smoking in 24.39%, H/o Ingestion of peculiar food in 23.17%.

DISCUSSION

A number of factors are thought to increase your chances of developing asthma. These include: Having a blood relative (such as a parent or sibling) with asthma, Having another allergic condition, such as atopic dermatitis or allergic rhinitis (hay fever), Being overweight, Exposure to second-hand smoke, Exposure to exhaust fumes or other types of pollution. Exposure to occupational triggers, such as chemicals used in farming, hairdressing and manufacturing.⁹ In our study we have seen that the majority of patients were in the age group of 5-8 yrs. i.e. 54.87% followed by 9-12 yrs. -34.14% followed by 1-4 yrs.- 10.97%. This was similar to Gergen PJ.¹⁰ also The majority of the patients were males i.e. 62.19% followed by females 37.80%. The majority of the precipitating factors for asthma were exposure to Cold air and Dust i.e. in 82.92% followed by Only Cold air in 74.39%, Only exposure to Dust was in 71.95%, also it was precipitated by History of Upper Respiratory Tract Infection in - 67.07%, Exposure to Smoke (Chulha/Chimneys) were also precipitated the symptoms in 39.02%, Exposure to pollens in 35.36%, Exposure to passive smoking by their close relative like fathers, grandfather, uncle etc. in their vicinity were associated with 24.39% of the patients , H/o Ingestion of peculiar food like some fruits like bananas ,Orange, Grapes and foods like eggs, drinking butter milk etc. were also found associated with the triggering factors in 23.17%. This was similar to Amr S¹¹, Luskin AT¹², Janssens T¹³ and Balaji MD.¹⁴

CONCLUSION

The majority of patients in our study were in the age group of 5-8 yrs. and was more common in males. The majority of the patients were having Moderate persistent symptoms followed by Mild persistent symptoms. The majority of the precipitating factors for asthma were Cold air and Dust, followed by Only Cold air, Only to Dust, H/o URTI, Exposure to Smoke (Chulha) , Exposure to pollens , Exposure to passive smoking in H/o Ingestion of peculiar food.

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Source of Support: None Declared
Conflict of Interest: None Declared