

# Study Bronchial Asthma in school going children of Bihar

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## Abstract

**Background:** Bronchial Asthma has become an important public health problem especially in children because of over protection to children. Childhood asthma is mostly under diagnosed and under treated. Moreover prevalence of asthma varies from place to place but aggravation of asthma is multi factorial. **Method:** Out of 87 children 55 were Male and 32 were female Aged between 5 to 15 Blood examination, CBC, AEC, ESR, RBS, chest x-ray was carried out pulmonary function test also carried out in doubtful patients. **Results:** Clinical manifestation were 9 (10.3%) had asthma associated with obesity, In 125 (13.7%) onset of asthma > 2 years of age 7 (8.04%) had nocturnal exacerbation 10 (11.4%) got relief with branch dilators, 13 (14.9%) seasonal exacerbation 5 (15.7%) exercise induced asthma, 11 (12.6%) trigger induced attacks 8 (9.19%) A febrile episode, 12 (13.7%) had family history. The risk factors were 4 (4.59%) were in contact with cat 6 (6.89%) with dog, 11 (12.6%) were in contact with both. 66 (75.8%) with none 36 (41.3%) had exposure to smoke, 51 (58.6%) with dust. 15 (17.2%) used electricity as fuel for cooking, 38 (43.6%) used LPG, Gas, 34 (39.08%) used open fire for cooking. 33 (37.9%) staying at open residential locality 54 (62%) were at crowded locality 16 (18.3%) upper socio-economic, 30 (34.4%) middle, 41 (47.1%) were lower socio economic status. **Conclusion:** Apart from the treatment their contacts, risk factors have to be monitored to prevent morbidity and mortality among children because bronchial asthma is an idiopathic disease.

**Keywords:** Bronchitis, socio-economic, exposure, contacts, allergy, atopy.

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types receptors in airway makes distinct types of inflammation leads to excessive narrowing with consequent reduced air flow and symptomatic wheezing and dyspnoea<sup>2,3</sup>. Narrowing of the airways is usually reversible but in some patients with chronic asthma there may be an element of irreversible airflow obstruction which causes distress. The distress due to airflow obstruction varies 4 to 7% globally, but childhood asthma diverges widely from country to country because of variations in the climate, temperature, habit and habitat<sup>(4)(5)</sup>. Hence apart from treatment, a preventive measure has to be ruled out

## INTRODUCTION

Asthma is one of the most common chronic diseases. It is chronic inflammatory disorder of the air way. When unadorned, often results into augmented morbidity for the enduring and indirect economic fatalities for the community. Geographical location environmental, ethnicity, behaviour and life style are allied with the disease<sup>1</sup> Infact Asthma is a syndrome characterised by airflow obstruction that differs strikingly, both instinctively and with the treatment. There are different

## MATERIAL AND METHOD

87 school going children attending OPD of paediatric department of Lord Buddha Koshi Medical College hospital saharsa – 800027 (Bihar) were studied.

**Inclusive Criteria:** Out of 87, 55 were male and 32 were female Aged between 5 to 15 having symptoms of bronchial asthma were selected for study.

**Exclusion Criteria:** children having history of pulmonary tuberculosis (PT). Chronic lung disease (Bronchiectasies,

Interstitial lung disease, congenital heart disease), immune compromised patients were excluded from the study.

**Method:** History of each patient was noted. Majority of the children belonged to middle socio-economic status. Blood examination CBC, AEC, ESR, RBS, and chest x-ray was also carried out. Pulmonary function test (Spirometry) was done in only doubtful patients and treated accordingly. The duration of study was 25 March 2019 to 12 March 2020.

**Statistical Analysis:** Children were classified age wise gender wise clinical manifestation and risk factors for prevalence of Bronchial asthma in children were classified with percentage. The statistical analysis was carried out with percentage out in SPSS software.

This research paper was approved by ethical committee of Lord Buddha Koshi Medical College and Hospital, Saharsa, Bihar.

## OBSERVATION AND RESULTS

**Table-1:** Age wise classification of children suffering with Bronchial Asthma 3 (3.44%) were 6 years old, 4 (4.59) were 7 years old, 5 (5.74) were 8 years old, 8 (9.19%) were 9 years old, 7 (8.04%) were 10 years old, 11 (12.6%) were

11 years old 12 (13.7%) were 12 years old, 13 (14.9%) were 13 years old, 10 (11.4%) were 14 years old, 14 (16%) were 15 years old (Table-1).

**Table-2:** In the sex wise classification 55 (63.2%) were male, 32 (36.7%) were female.

**Table-3:** Clinical manifestations of children with Bronchial Asthma 9 (10.3%) had asthma associated with obesity 12 (13.7) had onset of Asthma after 2 years (> 2 years), 7 (8.04%) had Nocturnal exacerbation, 10 (11.4%) get relief with Bronchodilators 13 (14.9%) get seasonal exacerbation, 5 (5.74%) Exercise induced, 11 (12.6%) had trigger induced attacks 8 (9.19%) A febrile episode, 12 (13.7%) had family history or Atopy.

**Table-4:** Study of risk factors for children with bronchial asthma – 4 (4.59%) associated with cat, 6 (6.89%) contact with Dog, 11 (12.6%) contact with both (dog and cat), 36 (41.3%) had exposed to smoke, 51 (58.6%) exposed to Dust, 15 (17.2%) used electricity as fuel for cooking, 38 (43.6%) used LPG for cooking, 34 (39.08%) used open fire for cooking, 33 (37.9%) staying at open locality, 54 (62%) in crowded locality, 16 (18.3%) had upper socio-economic status, 30 (34.4%) were middle and 41 (47.1%) were lower socio-economic status.

**Table 1:** Total No 87 Age wise distribution of children suffering with Bronchial Asthma

Sl. No	Age of children	Number of Children	Percentage %
1	6	3	3.44
2	7	4	4.59
3	8	5	5.74
4	9	8	9.19
5	10	7	8.04
6	11	11	12.6
7	12	12	13.7
8	13	13	14.9
9	14	10	11.4
10	15	14	16.0

**Table 2:** Sex-wise distribution

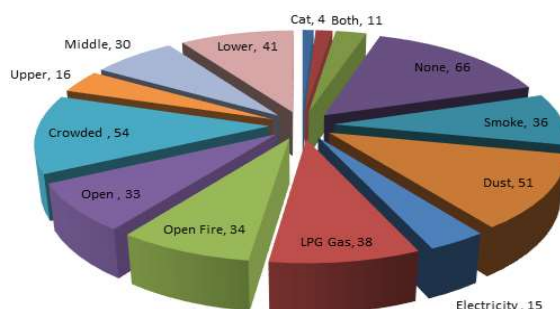
Sl. No	Gender	Number	Percentage %
1	Male	55	63.2
2	Female	32	36.7

**Table 3:** Total No 87 Clinical Manifestation of children with bronchial Asthma

Sl. No	Particular	No. of patients	Percentage %
1	Asthma associated with obesity	9	10.3
2	Age of onset > 2 years	12	13.7
3	Nocturnal exacerbation	7	8.04
4	Relief with Bronchodilators	10	11.4
5	Seasonal exacerbation	13	14.9
6	Exercise Induced	5	5.74
7	Trigger induced attacks	11	12.6
8	Febrile Episode	8	9.19
9	Family history or Atopy	12	13.7

**Table 4:** Risk factors for bronchial Asthma in children

Sl. No	Risk Factors	Particulars	No. of patients	Percentage %
1	Pet	Cat	4	4.59
		Dog	6	6.89
		Both	11	12.6
		None	66	75.8
2	Exposure	Smoke	36	41.3
		Dust	51	58.6
3	Fuel used for cooking	Electricity	15	17.2
		LPG Gas	38	43.6
		Open Fire	34	39.08
4	Locality of Residence	Open	33	37.9
		Crowded	54	62.0
5	Socio-economic Status	Upper	16	18.3
		Middle	30	34.4
		Lower	41	47.1

**Figure 1:** Risk factors for bronchial Asthma in children

## DISCUSSION

In the present study of bronchial asthma, in school going children of Bihar. The aged between 6 to 15 years old. The male children were 55 (63.2%) and female 32 (36.7%) (Table-2). The clinical manifestation were 9 (10.3%) had asthma associated obesity, 12 (13.7%) had onset of asthma > 2 years, 7 (8.04%) had natural exacerbation, 10 (11.4%) got relief with bronchodilators, 13 (14.9%) had seasonal exacerbation, 5 (5.74%) had exercised induced asthma, 11 (12.6%) had trigger induced attacks, 8 (9.19), A febrile episode 12 (13.7%), Family history or atrophy (Table-3). Risk factors for bronchial asthma was 4 (4.59%) had in contact with pets, 6 (6.89%) had in contract with dogs, 11 (12.6%) were in contact with both, 66 (75.8%) had no any such contacts, 36 (41.3%) exposed to smoke, 51 (58.6%) exposed to dust, 15 (17.2%) used electricity as fuel for cooking, 38 (43.6%) used LPG gas for cooking, 34 (39.08%) used open fir for cooking, 33 (37.9%) were resident of open locality, 16 (18.3%) were upper socio-economic status, 30 (34.4%) middle, 41 (47.1%) lower socio-economic status (Table-4). These findings were more or less in agreement with previous studies<sup>6,7,8</sup>. It was also confirmed that 80% children having bronchial asthma had an history of both parents had asthma and 40 % children having bronchial asthma had no history of any

family members<sup>9</sup>. The children who develop onset less than five years, due to placental transfer of allergens or cytokines to the fetus<sup>10</sup>. Moreover lower socio-economic status children were more prone for bronchial asthma in India and abroad too<sup>11</sup>. Asthma develops due to interaction between gene and environment, parental history or atophy sensitivity carries at all levels (like mild, moderate severe) of persistent asthma than for mild intermittent asthma. The symptoms include wheezing in the chest; sleep disturbance due to cough and exercised induced aggravations obesity is a co-morbid illness associated asthma.

## SUMMARY AND CONCLUSION

In the present study of branchial asthma in school going children of Bihar will be quite useful to cardiologist, chest physician, radiologist. Bronchial asthma is quite common due to rapid industrialisation, over growing low-socio-economic status, migration to urban area cause air, dust pollution. But this study demands further genetic histopathology, nutrition, hormonal, environmental study because exact pathogenesis bronchial asthma is still unclear.

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