Original Research Paper

Volume-8 | Issue-8 | August-2018 | PRINT ISSN No 2249-555X

Community Medicine

# "STUDY OF SOCIO-DEMOGRAPHIC AND CLINICAL PROFILE OF ASTHMA PATIENTS IN RURAL AREA OF NAGPUR DISTRICT."

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**ABSTRACT**

**Background:** Asthma is a chronic inflammatory condition of airway characterized by recurrent symptoms of variable airflow limitation.

**Objectives:** To study socio-demographic and clinical profile of asthma patients.

**Methodology:** A cross-sectional study conducted during September-November 2013 in RHTC Hingna, IGGMC, Nagpur. Self reported 50 asthmatics were interviewed. Socio-demographic and disease related details were inquired. Spirometry was done.

**Results:** Mean age was 43.4±20.8 years. About 36% had addiction. Chief complaints were cough(72%), chest tightness(32%), wheeze(34%) and dyspnoea(64%). Dust, exertion, stress, respiratory infections were precipitating factors. Past history of hospitalization was present in 10%. On PFT 58% had obstruction. Obstruction was very severe(4%), severe(6%), moderate(12%) and probable(36%). Mean FEV1 was 68.58±18.15. Statistical analysis was done by calculating mean, percentage and t test for internal comparison.

**Conclusion:** Self reported asthma should be confirmed by trained health personnel. Health education & early screening can prevent morbidities.

**KEYWORDS :** Asthma, Pulmonary Function Test, FEV1, spirometry.

## Introduction:

Asthma is a chronic inflammatory disorder of the airways which, in susceptible individuals, can cause episodic coughing, wheezing, shortness of breath, and chest tightness. It can be exacerbated by many different triggers.[1] In the past, asthma was mainly considered a childhood illness. However, recent epidemiological studies indicate that new incident asthma can occur at any age, and it is in fact highly prevalent in the older adult population and its prevalence ranges from 4.5% to 12.7%.[2] Because of its increased prevalence, as well as the increased morbidity and mortality from this disease, asthma has come to be recognized as a major worldwide public health issue.[3] Although recognition of a high risk profile is useful as a warning to physicians and patients, patients with moderate and even mild asthma are also at risk of a life-threatening exacerbation. The study of the clinical characteristics of asthma in the elderly is of utmost importance in terms of providing evidence to identify those diagnostic and therapeutic methods that are safe and effective[4].

## Aims and objectives

To study the socio-demographic and clinical profile of asthma patients in rural area.

## Methodology

- **Study type:** A cross sectional study.
- **Study place:** Rural health training centre area of IGGMC, Nagpur.
- **Study period:** September to November 2013.
- **Study participants:** Self reported 50 asthma patients attending OPD during study period.
- **Data collection:** Data was collected by using questionnaire through face-to-face interview. Socio-demographic profile, chief complaints and duration, precipitating factors, seasonal or diurnal variation, family history, treatment history, pets, etc were inquired.
- **Spirometry:** Baseline spirometry was done in all cases and post bronchodilator testing was done in selected cases.
- **Statistical analysis:** was done by percentage, mean and standard deviation.

## Results

**Table 1: Socio-demographic Characteristics Of Study Participants**

| Character | Number (n = 50) | Percentage |
|---|---|---|
| Mean age ± SD (years) | 43.4 ± 20.8 | - |
| Male : Female | 28:22 | 1.3:1 |
| Mean duration of complaints ± SD (months) | 24.5 ± 20.8 | |
| Addiction of tobacco and smoking | 18 | 36 |
| Already diagnosed by physician | 21 | 42 |
| h/o hospitalization in past | 5 | 10 |
| h/o asthma in childhood | 9 | 18 |
| Family h/o asthma | 24 | 48 |

**Table 1** shows socio-demographic characteristics of the study participants. Mean age of the participants was 43.4 ± 20.8 years. Out of 50 participants 28 (56%) were male and 22 (44%) were female. Mean duration of complaints was 24.5 ± 20.8 months. About 36% participants had h/o addiction to tobacco chewing and/or smoking. 42% participants were already diagnosed by the physician. H/o previous hospitalization was present in 10% participants. About 18% participants gave h/o asthma in childhood whereas 14% had family h/o asthma.

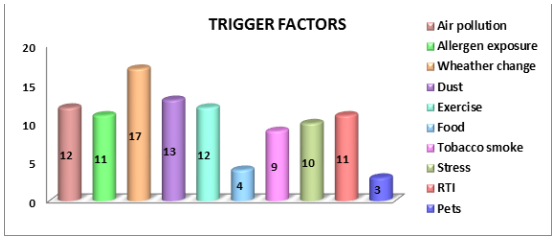
**Table 2: Chief Complaints In Study Participants**

| SYMPTOMS | NUMBER | PERCENTAGE |
|---|---|---|
| Dry cough | 36 | 72 |
| Cough with expectoration | 29 | 58 |
| Dyspnoea | 32 | 64 |
| Wheeze | 17 | 34 |
| Chest discomfort | 16 | 32 |
| Nocturnal symptoms | 32 | 64 |
| Seasonal variation | 38 | 76 |
| Worsening in winter | 50 | 100 |
| Worsening in summer | 6 | 12 |

**Table 2** shows distribution of study participants according to their chief complaints. The chief complaints were Dry cough (72%), Cough with expectoration (58%), Dyspnoea (64%), Wheeze (34%), Chest discomfort (32%), Nocturnal symptoms (64%), Seasonal variation (76%), Worsening of symptoms in winter (100%) and Worsening of symptoms in summer (12%)

Participants gave history of various trigger factors which aggravated their symptoms. The distribution of these trigger factors is shown in **Graph 1.**

**Graph 1: Trigger Factors In Study Participants**



Major trigger factors were Air pollution (12%), Allergen exposure (11%), Whether change (17%), Dust (13%), Exercise (12%), Food (4%), Tobacco smoke (9%), Stress (10%), RTI (11% ) and Pets (3%).

**Table 3: Results Of Pft In Study Participants**

| Character | Values |
|---|---|
| Mean FEV1 ± SD | 68.58±18.15 |
| Mean FVC ± SD | 69.32±16.95 |
| Mean PEFR ± SD | 62.41±20.23 |
| Very severe obstruction | 8 (4%) |
| Severe obstruction | 3 (6%) |
| Moderate obstruction | 6 (12%) |
| Probable obstruction | 18 (36%) |
| Normal spirometry | 21 (42%) |

**Table 3** shows results of Pulmonary Function Test i.e. Spirometry in the study participants. Mean FEV1 was 68.58±18.15. Mean FVC was 69.32±16.95 whereas Mean PEFR was 62.41±20.23. About 4% had very severe obstruction, 6% had severe obstruction, 12% had moderate obstruction whereas 36% had probable obstruction. Spirometry was normal in 42% study participants.

## Discussion

In our study, the mean age of study participants was 43.4 ± 20.8 years. This was nearly similar to the study done by **A Halim et al**[5] where mean age of patients was 36.64±4.91.

In our study 56% were male and 44% were female with a male: female ratio 1.3:1. Similarly **A Halim et al**[5] found 63% male 36% female with a male: female ratio 1.7:1

In our study mean duration of complaints was 24.5 ± 20.8 months. In a study by **Yanez et al**[2]**.** average duration of complaints was 34.2 years ± 21.9.

In our study 36% participants had h/o addiction to smoking. Whereas in the study conducted by **A Halim et al**[5] where 40% participants were smokers.

In our study total 42% participants were already diagnosed by the physician. While in a study conducted by **Zaman at al**[6] 75% were already diagnosed by the doctor whereas 25% were self diagnosed asthmatics.

H/o previous hospitalization was present in 10% participants.
About 18% participants gave h/o asthma in childhood whereas 48% had family h/o asthma. Similarly **A Halim et al**[5] got positive family history in 73% participants.

The chief complaints in study participants were Dry cough (72%), Cough with expectoration (58%), Dyspnoea (64%), Wheeze (34%), Chest discomfort (32%), Nocturnal symptoms (64%), Seasonal variation (76%), Worsening of symptoms in winter (100%) and Worsening of symptoms in summer (12%). These findings were similar to **A Halim et al**[5] where almost all patients had classical triad of dyspnoea, wheeze and cough. Expectoration of scanty mucoid sputum was recorded in 60% cases. Chest tightness or discomfort was noted in 33% cases. Nocturnal or early morning exacerbations of symptoms were noted in 76% cases. Seasonal variation present in 25 (78%) cases, 66% patient's asthma worse in winter and 16% patient's in summer.

Major trigger factors were air pollution (12%), allergen exposure (11%), whether change (17%), dust (13%), exercise (12%), food (4%), tobacco smoke (9%), stress (10%), RTI (11% ) and pets (3%).

On spirometry in the study participants, mean FEV1 (forced expiratory volume) was 68.58±18.15, mean FVC (forced vital capacity) was 69.32±16.95 whereas mean PEFR was 62.41±20.23. Spirometry was normal in 42% study participants. In a study by **Yanez et al**[2]. the mean FEV1 was 73±21 and FVC was 69±12. In addition, 39% presented normal values of FEV1 (higher than 80%), with 59% reversibility. Similarlly . **Zaman at al**[6]. found that the mean FEV1 was 71.8±29.5, FVC was 72.2±26.9 and mean PEFR was 65.9±31.5.

About 4% had very severe obstruction, 6% had severe obstruction, 12% had moderate obstruction whereas 36% had probable obstruction. Similarly **Yanez et al**[2] found that with regard to the severity of asthma, 74.3% of the patients were diagnosed with moderate persistent asthma, 15.7% with mild persistent asthma, 7.2% presented with severe persistent asthma, and 2.6% with intermittent asthma,

## Conclusion

These results may provide a better understanding of the clinical characteristics of asthma in terms of severity and thus enable the development of future therapeutic strategies and a better quality of life in asthmatic patients.

## Recommendations

Regular check up, timely treatment and good self care is essential in a chronic intermittent condition such as asthma.

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