Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies NLM ID: 101716117

Journal home page: www.jamdsr.com

doi: 10.21276/jamdsr

Index Copernicus value = 85.10

(e) ISSN Online: 2321-9599;

(p) ISSN Print: 2348-6805

Original **A**rticle

Assessment of cases of asthma- A clinical study

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ABSTRACT:

Background: Asthma is a heterogeneous disease, and among the various asthma characteristics involved in the phenotypic heterogeneity of the disease, both clinical observations and statistical cluster-based approaches identified age at asthma onset as a key differentiating factor. The present study was conducted to assess cases of asthma. **Materials & Methods:** 60 patients of Asthma of both genders were classified into group I (Non- severe asthma) and group II (Severe asthma). Parameters such as body mass index (BMI), socio-economic characteristics, education level, lifestyle factors such as smoking, parental asthma and/or allergy, severe childhood infections, non-steroidal anti-inflammatory drug (NSAIDS) – exacerbated respiratory disease (NERD), the number of siblings were recorded. **Results:** There were 22 males and 8 females in group I and 20 males and10 females in group II. The mean BMI was 26.3 in group I and 27.2 in group II, education level was primary level in 16 and 14 in group II, secondary level 22 in group I and 8 in group I and 13 in group I and 18 in group I and 17 in group I and 14 in group I and 10 in group II. The difference was significant (P< 0.05). **Conclusion:** Common risk factors were >2 sibling, parental history of smoking, asthma and primary education level.

Key words: Asthma, Smoking, BMI

Received: 18 November 2017

Accepted: 23 December 2017

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This article may be cited as: Srivastava A, Singh S. Assessment of cases of asthma- A clinical study. J Adv Med Dent Scie Res 2018;6(1):158-160.

INTRODUCTION

The prevalence of asthma has strongly increased over the past decades, and approximately 10% of the population in industrialized countries has had asthma at some point. Asthma is a heterogeneous disease, and among the various asthma characteristics involved in the phenotypic heterogeneity of the disease, both clinical observations and statistical cluster-based approaches identified age at asthma onset as a key differentiating factor.¹

Asthma often starts early in life, but asthma can appear in adulthood, and adult-onset asthma has been the focus of less attention.² In relation to childhoodonset asthma, adult-onset asthma is associated with more respiratory symptoms, asthma medication use. Although genetic predisposition is clearly evident, gene-by-environment interaction probably explains much of the international variation in prevalence rates for allergy and asthma.³ Environmental factors such as infections and exposure to endotoxins may be protective or may act as risk factors, depending in part on the timing of exposure in infancy and childhood. Some prenatal risk factors, including maternal smoking, have been firmly established, but diet and nutrition, stress, use of antibiotics and mode of delivery may also affect the early development of allergy and asthma.⁴ Later in childhood, putative risk factors include exposure to allergens, breastfeeding (which may initially protect and then increase the risk of sensitization), family size and structure, and sex and gender. In adulthood, recurrence of childhood asthma may be just as common as new-onset asthma, which may have an occupational basis. A better understanding of these risk factors may eventually lead to opportunities for primary prevention of asthma.⁵ The present study was conducted to assess cases of asthma.

MATERIALS & METHODS

The present study comprised of 60 patients of Asthma of both genders. The consent was obtained from all enrolled subjects

Data such as name, age, gender etc. was recorded. They were classified into group I (Non- severe

asthma) and group II (Severe asthma). Parameters such as body mass index (BMI), socio-economic characteristics, education level, lifestyle factors such as smoking, parental smoking, parental asthma and/or allergy, severe childhood infections, non-steroidal anti-inflammatory drug (NSAIDS) – exacerbated respiratory disease (NERD), the number of siblings were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Status	Non- severe asthma	Severe asthma
M:F	22:8	20:10

Table I shows that there were 22 males and 8 females in group I and 20 males and10 females in group II.

Table II Comparison of parameters

Parameters	Group I	Group II	P value
BMI (mean)	26.3	27.2	0.12
Education Primary level	16	14	0.05
Secondary level	22	8	
Ever smokers	10	18	0.04
>2 siblings	7	14	0.01
Parental smoking	8	13	0.02
Parental asthma	5	17	0.03
NERD	3	10	0.01

Table II, graph I shows that mean BMI was 26.3 in group I and 27.2 in group II, education level was primary level in 16 and 14 in group II, secondary level 22 in group I and 8 in group II, ever smokers were 10 in group I and 18 in group II, >>2 siblings 7 in group I and 14 in group II, parental smoking in 8 in group I and 13 in group I, parental asthma 5 in group I and 17 in group II and NERD 3 in group I and 10 in group II. The difference was significant (P< 0.05).



Graph I Comparison of parameters

DISCUSSION

Asthma in adults may have persisted from childhood, may have occurred as a relapse of earlier childhood asthma (whether or not recalled by the individual) or may be true adult-onset asthma with no symptoms in earlier life.⁶ New-onset asthma in adulthood may have environmental (especially occupational) causes with or without allergen sensitization.⁷ Although adult

asthma may develop in relation to specific drug treatments (e.g., β -blockers, nonsteroidal antiinflammatory drugs) or, in women, the use of hormone replacement therapy,188 occupational exposure to sensitizing agents or irritants is more common.⁸ Asthma related to workplace exposures has been documented in many occupational settings.⁹ Commonly associated occupations and exposures include car painting (isocyanates), hairdressing (various chemicals), domestic and commercial cleaning (cleaning solutions), health care professions (latex) and baking (flour dust), among many others.^{10,11} The present study was conducted to assess cases of asthma.

In present study, there were 22 males and 8 females in group I and 20 males and10 females in group II. Thomson et al¹² included 100 (7.4%) individuals with severe asthma. In a univariate analysis, severe asthma was associated with male sex, age, a low education level, no professional training, ever smoking, ≥ 2 siblings, ≥ 1 chronic comorbidity and non-steroidal anti-inflammatory (NSAID)-exacerbated drug respiratory disease (NERD) (p<0.05), and trends for association (p<0.2) were observed for severe childhood infection, the presence of chronic rhinosinusitis with nasal polyps, and being the 1st child. The 10 variables (being a 1st child was removed due to multicollinearity) were thus entered in a multivariate regression model, and severe asthma was significantly associated with male sex (OR [95% CI]=1.96 [1.16-3.30]), ever smoking (1.98 [1.11-3.52]), chronic comorbidities (2.68 [1.35-5.31]), NERD (3.29 [1.75-6.19]), and≥2 siblings (2.51 [1.17-5.41]). There was a dose-response effect of the total sum of these fve factors on severe asthma (OR [95% CI]=2.30 [1.81-2.93] for each one-unit increase in the score).

We observed that mean BMI was 26.3 in group I and 27.2 in group II, education level was primary level in 16 and 14 in group II, secondary level 22 in group I and 8 in group II, ever smokers were 10 in group I and 18 in group II, >2 siblings 7 in group I and 14 in group II, parental smoking in 8 in group I and 13 in group I, parental asthma 5 in group I and 17 in group II and NERD 3 in group I and 10 in group II. In a cohort of Finnish middle-age asthmatic patients (including early- and late-onset individuals) (n=529), it was shown that 8% of asthmatic patients with more severe asthma and comorbidities had poorer Work Ability Scores during the 10-year follow-up.¹³

Previous studies have shown that obesity increases the odds of a more persistent and severe asthma phenotype and that obesity-associated severe asthma may represent a distinct clinical phenotype. However, we did not detect an association between BMI and severe adult-onset asthma in the main analysis, but a trend for a positive association was observed when using the medication-based definition of severe asthma.¹⁴

CONCLUSION

Authors found that common risk factors were >2 sibling, parental history of smoking, asthma and primary education level.

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