

Parental history of migraine and bronchial asthma in children

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SUMMARY

Background: a possible association between migraine and various allergic disorders have been reported. It was aimed in this study to inquire the association between bronchial asthma in children and parental history of migraine.

Methods and results: parental history of allergic diseases and migraine were inquired among 140 asthmatic children (91 males, 49 females) and 110 age and sex matched control subjects who had not any allergic or hypersensitivity disorders, followed-up at Pediatric outpatient clinics of Dicle University Hospital. While 13 of 140 asthmatic children (9.3%) had parental history of migraine, 2 of 110 control subjects (1.8%) had parental migraine history. Difference between asthmatic and control subjects was significant (OR: 5.5, 95% CI: 1.3-25.0). Children who had parental history of migraine also had significantly more frequent parental history of asthma, eczema and particularly allergic rhinitis ($p = 0.007$).

Conclusions: our results suggest that children are at increased risk of asthma if their parents have a history of migraine. Migraine in one generation and asthma in the next lead to the conclusion that the two disorders may have a relationship to a common denominator.

Key words: Asthma in children. Migraine. Headache. Parenteral atopy.

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INTRODUCTION

Atopy is characterized by certain clinical findings and frequently by derangement of the immune and

autonomic nervous systems (1). Relationship between various atopic diseases such as eczema, asthma, vernal conjunctivitis and rhinitis has been well confirmed, but association between these atopic disorders and a group of seemingly unrelated conditions like hypertrophic sinusitis and migraine remains a question. A possible association between migraine and various allergic disorders has been reported (2). Migraine and asthma have been reported to occur in the same person more commonly than would be expected, however migraine in one generation and asthma in the next have rarely been studied. For this purpose, it was aimed in this study to inquire the presence of parental history of migraine in asthmatic children.

MATERIAL AND METHODS

140 asthmatic children (91 males, 49 females) and 110 age and sex matched control subjects who had not any allergic or hypersensitivity disorders were compared for their parental history of allergic diseases and migraine. The study was performed at Pediatric outpatient clinics of Dicle University Hospital during 1995-1997. Those children having been diagnosed and treated for asthma were recruited into the study group. The hyperresponsiveness as bronchoconstriction following exercise and acute decrease in airway irritability after administration of beta receptor agonists (FEV_1 increased by more than 10% at the reversibility test) were accepted as objective indicators of asthma. The parents of the asthmatic children and the control subjects were asked to fill in a questionnaire including the presence of doctor-diagnosed allergic diseases and migraine in the family members. The diagnosis of migraine made by the physician was in keeping with the Ad-hoc Committee

classification system of headache (3). The diagnosis of parental asthma was confirmed by the American Thoracic Society guidelines (4).

For statistical analysis Odds ratio's and Fisher's exact test were used.

RESULTS

Parental history of migraine was found to be present in 13 (9.3%) of 140 asthmatic children (aged 3-15 years) and 2 (1.8%) of 110 control subjects. Difference between asthmatic and control subjects was significant (OR: 5.5, 95% CI: 1.3-25.0). Among 13 patients who had parental migraine history in the asthmatic group, 11 patients had allergic rhinitis and 8 patients had parental history of allergic diseases such as asthma, allergic rhinitis and eczema. Parental migraine history was suggested to be associated with parental allergic diseases as children who had parental history of migraine also had significantly more frequent parental history of allergic diseases ($X^2 = 7.3$, $p = 0.007$). Seventy-seven (55%) of all 140 asthmatic children had parental history of allergic diseases. Frequency of parental allergic diseases and migraine in the asthma and control groups is summarized in table I.

DISCUSSION

Urticaria, eczema, rhinitis and asthma have been reported to be the most frequently seen clinical signs of food allergy in children (5, 6). Children with severe frequent migraine were also reported to have no longer disease provocation while they were on oligoantigenic diet (7, 8). Migraine and chronic respiratory inflammation like rhinitis, sinusitis, and

asthma have been reported to be the most commonly seen disorders in chemical sensitivity patients (9). It is common knowledge that chemical sensitivity, food preservatives and even food allergy may be associated with migraine headache, however it is not well known whether asthma or other atopic conditions are associated with migraine.

Higher male rates in childhood and higher female in early-mid adolescence were observed in an examination of the rates of asthma and migraine, which could lead us to postulate that the two diseases may possibly be related (10). Incidence of asthma during childhood was found to be independently associated with history of migraine in a national British cohort study (11).

Mortimer MJ et al have reported the prevalence of migraine to be significantly higher in children with atopic disorders compared to those without (12). Association between childhood migraine and atopy was found to be strongest with rhinitis and rhinitis in children was found to be associated with maternal migraine in this study. They have suggested that a history of atopy should support the diagnosis of migraine in young children with paroxysmal headaches.

There are no adequate studies showing an association between migraine in one generation and allergic disease in the other. Headaches in adults were found to be more prevalent among those whose family members were reported to have allergy, asthma and migraine (13). In the study of Chen TC and Leviton A (14), among children whose mothers had neither migraine nor asthma/allergies, 3.2% had asthma while this incidence was found to be more than 6% for children whose mothers had migraine, but not asthma/allergies. The risk of asthma among children born of women who had both migraine and asthma/allergies was greater than the risk associated with each maternal disease.

Reported association between two or more different diseases may supply valuable clues for diagnosis and generation of productive hypotheses for research into etiologic and physiopathologic factors. The association between migraine in one generation and asthma in the next was speculated in a previous study to support for a genetic link between the two disorders due to the reports that both migraine and asthma are associated with some specific HLAs (15, 16).

In conclusion, our results show that children are at increased risk of asthma if their parents have a history of migraine. We can suggest that a history of migraine in the family may support the diagnosis of asthma in the children. Migraine in one generation and asthma in the next lead to the conclusion that the two disorders may have a relationship to a common denominator.

Table I

Frequency of parental allergic diseases in the asthma and control groups*

Parental allergic disease	Asthma		Controls	
	N	%	N	%
Bronchial asthma	34	24.3	17	15.4
Allergic rhinitis	19	13.6	14	12.7
Eczema	23	16.4	9	8.2
Migraine	13	9.3	2	1.8
Others	11	7.9	8	7.3

*Two or more allergic disease may be found in the same parent.

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RESUMEN

Antecedentes: se ha comunicado una posible asociación entre la migraña y diversas alteraciones alérgicas. Se emprendió este estudio para investigar la asociación entre el asma bronquial infantil y los antecedentes paternos de cefalea vascular.

Métodos y resultados: se estudiaron los antecedentes paternos de enfermedad alérgica y migraña de 140 niños asmáticos (91 niños y 49 niñas) y un grupo control de 110 niños de edades y distribución sexual similar, sin alteraciones alérgicas o de hipersensibilidad. El seguimiento de ambos grupos fue llevado a cabo en el ambulatorio del Hospital Universitario de Dicle. Trece de los 140 niños asmáticos (9,3%) tuvieron antecedentes paternos de migraña frente a 2 de los 110 controles (1,8%). La diferencia entre los asmáticos y controles fue significativa (OR: 5,5; 95% CI: 1,3-25,0). Los niños con antecedentes paternos de migraña también tuvieron una mayor frecuencia de antecedentes paternos de asma, eccema y, sobre todo, rinitis alérgica ($p = 0,007$).

Conclusión: nuestros resultados sugieren que los hijos de padres que tienen una historia de migraña tienen mayor riesgo de padecer asma. La presentación de migraña en una generación y asma en la siguiente que ambos trastornos pueden relacionarse con un factor común.

Palabras clave: Asma en niños. Migraña. Cefalea. Atopia paterna.

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