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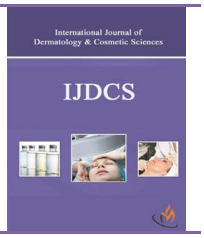

PREVALENCE OF ATOPIC DERMATITIS AMONG CHILDREN IN JEDDAH, SAUDI ARABIA (2013-2014)

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ABSTRACT
There is limited date on the epidemiology of atopic dermatitis in Jeddah (Saudi Arabia). As atopic dermatitis is one of the major health problem worldwide among children. This study estimates the prevalence and describes the pattern of atopic dermatitis among children in Jeddah, Saudi Arabia. A cross sectional study was done where one thousand questionnaires were distributed randomly in selected malls and schools to survey a representative sample from neonate to 15 year old children in Jeddah city regarding history of atopic dermatitis. A response rate of 93.6% has been achieved. Among (n =936) children, prevalence of atopic dermatitis was 21.6% (24.2% among males and 20.6% among female, p=0.243). The commonest reported manifestation was itchy skin during the last 12 months (79.2%), followed by atopic dermatitis (60.4%). Itching skin disturbed sleep among 16.7%of males compared to 30.3% of females, p=0.044. Regarding age at onset, among more almost one-third of females (37.5%) compared to 29.2% of males, skin itching or atopic eczema began at age of two years or less. This difference was borderline statistically significant, p=0.056. The antecubital region was the most involved area with a (28.7%) of the cases followed by the neck (25.7%), popliteal region (24.8%), and ankle (23.3%). Eye involvement was reported by 16.3% of the participants. The difference between male and female patients in this regard was not statistically significant, p=0.459. Symptoms of atopic dermatitis are common in Jeddah city, Saudi Arabia. antecubital regions (28.7%) was the highest affected region. We suggest further studies to comparing data.

INTRODUCTION

Atopic dermatitis is a chronic pruritic inflammatory skin disease that occurs most frequently in children, but also could affects adults. Atopic dermatitis is often associated with elevated serum level of immunoglobulin E and a personal or family history of atopy, which describes a group of disorders that includes eczema, asthma, and allergic rhinitis [1, 2]. Although sensitization to environmental or food allergens is clearly associated with the atopic dermatitis phenotype, it does not seem to be a causative factor but may be a contributory factor in a subgroup of patients with severe disease [3]. Eczema is present with variable clinical feature expropriates, scratching and family history of asthma, allergic rhinitis or dermatitis [4]. The reaction of atopic dermatitis is depend on acute or chronic that is accompanied by variable degree of vasodilator and T-cell lymphocytic infiltration [5].

Non-dermatologist physicians and the lay public usually use the term "eczema" to signify atopic dermatitis that is characterized by different degrees of erythema and itching, Eczemas includes in addition to atopic dermatitis, other disorders such as contact dermatitis, nummular eczema, and seborrheic dermatitis, all differentiated by their etiologic factors, morphology, or patterns of distribution [6]. Using the 2003 National Survey of Children's Health sponsored by the federal Maternal and Child Health Bureau, prevalence estimates of eczema nationally in USA and for each state among a nationally representative sample of 102,353 children 17 years of age and under were calculated. Overall, the prevalence of eczema in the last 12 months was 10.7% and ranged from 8.7% to 18.1% between states and districts [7].

In Kingdom of Saudi Arabia, there are limited data on the epidemiology of allergic disorders. In a recent study carried out among schoolchildren in Madinah city, parents reported symptoms suggestive of a history of eczema in 10.3%, rhinitis in 24.2% and asthma in 23.6% of children. Overall, 41.7% of children had symptoms suggestive of at least one allergic disorder [8].

The prevalence of atopic dermatitis is increasing worldwide that's why we intended in this research to esplore the magnitude of this problem among children in Jeddah city, Saudi Arabia.

MATERIAL AND METHODS

A cross sectional study was done using questionnaires to survey a representative sample from neonate to 15 year old in different schools and malls in Jeddah city. Verbal approval was taken from parents of the participants or schools administrations. One thousand questionnaires have been distributed in alls and schools in Jeddah city and 936 responded giving a response rate of 93.6%. The questioner included three main sections; first one inquiring a general information about the precipitant (such as age, place of residency, and the relationship between the questionnaire answerer and the subject i.e. the kid). The second section was about history of any skin itching in the past 12 months and it included also the age of onset, and its site. The last section of the questioner included 10 questions inquiring about history of diagnosis with eczema by a doctor, asthma, allergy or allergic rhinitis, hay fever, dry skin, sleep disturbance due to itchy skin, family history of asthma, eczema, or allergic rhinitis, smokers around the kid, any pets in the house, any other dermatological diseases.

Data were analyzed using SPSS-22 software. Chi-square test was applied to test for the association between categorical variables and p value less than or equal 0.05 was considered statistically significant.

RESULTS

A total of (n =936) children participated in the study (248 "26.5%" males and 688 "73.5%' females) (ranging from Neonate to 15 year old), with a mean age of 5 years for boys and 9 years for girls. Almost one-fifth of children (202 "21.6%" were suffering from atopic dermatitis (60 "24.2%'of males and 142 "20.6%' female). The difference in the prevalence of atopic dermatitis according to sex was statistically insignificant, p=0.243 as illustrated in figure 1. The manifestations of atopic dermatitis are presented in Table 1. The commonest reported manifestation during the last 12 months was itchy skin (160 "79.2%"; 47 "78.3" of males and 113 "79.6" of females), followed by atopic dermatitis (122 "60.4%"; 36 "60%"% of male and 86 "60.6%" of females). Itching skin disturbed sleep among 10 "16.7%" of males compared to 43 "30.3%" of females, p=0.044. The rest of atopic dermatitis manifestations are shown in Table 1.

Regarding age at onset, among more almost one-third of females (37.5%) compared to 29.2% of males, skin itching or atopic eczema began at age of two years or less. This difference was borderline statistically significant, p=0.056. Table 2

The antecubital region was the most involved area with a (28.7%) of the cases followed by the neck (25.7%), popliteal region (24.8%), and ankle (23.3%). Eye involvement was reported by 16.3% of the participants. The difference between male and female patients in this regard was not statistically significant, p=0.459 (Table 3).

Table 1. Prevalence of atopic eczema manifestations among participants

Question	Male n=60 N (%)	Female n=142 N (%)	Total n=202 N (%)	p-value*
Itchy skin during last 12 months	47 (78.3)	113 (79.6)	160 (79.2)	0.842
Diagnosed with atopic eczema	36 (60.0)	86 (60.6)	122 (60.4)	0.940
Suffering from Asthma	26 (43.3)	77 (54.2)	103 (51.0)	0.157
Hay fever / Allergic rhinitis	26 (43.3)	64 (45.1)	90 (44.6)	0.820
General skin dryness	16 (26.7)	51 (35.9)	67 (33.2)	0.202
Itchy skin affect sleeping	10 (16.7)	43 (30.3)	53 (26.2)	0.044
Other dermatological diseases	2 (3.3)	8 (5.6)	10 (5.0)	0.491
Family history of one or more of (Atopic eczema, Asthma, Allergic rhinitis)	115 (56.9)			
Pets in house	87 (43.1)			
Smoker in house	41 (20.3)			

* Chi-square test

Table 2. Ages at onset of itchy skin or Atopic eczema among participants

Onset age	Male n=48 N (%)	Female n=128 N (%)	Total* n=176 N (%)
Less than 2 years	25 (52.1)	48 (37.5)	73 (41.5)
2-5 years	14 (29.2)	35 (27.3)	49 (27.8)
6 years or more	7 (14.6)	19 (14.8)	26 (14.8)
Don't remember	2 (4.1)	26 (20.3)	28 (16.0)

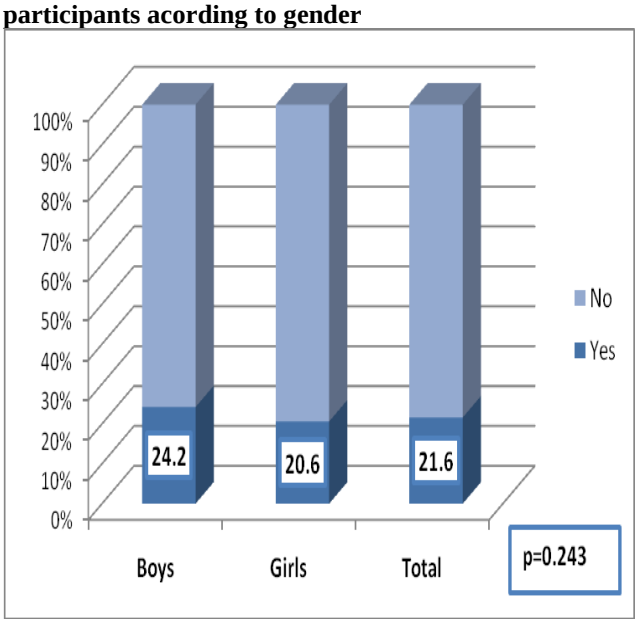
* Available data; Chi-square value=7.55, p=0.056

Table 3. Distribution of affected regions among respondents

Region	Male n=60 N (%)	Female n=142 N (%)	Total* n=202 N (%)
Neck	11 (18.3)	41 (28.9)	52 (25.7)
Eye	9 (15.0)	24 (16.9)	33 (16.3)
Popliteal region	11 (18.3)	39 (27.5)	50 (24.8)
Antecubital region	19 (31.7)	39 (27.5)	58 (28.7)
Ankle	16 (26.7)	31 (21.8)	47 (23.3)

* More than one answer is acceptable (sum exceeds 100%); Chi-square value=3.62, p=0.459

Figure 1. Prevalence of atopic dermatitis among participants acording to gender



DISCUSSION

According to the current study which built on 936 children from neonates to 15 years old, the prevalence of eczematous symptoms was 21.6%. This figure is very close to that reported from another Arabic country (Egypt) as a prevalence of 19.8% has been reported [9]. In another study conducted in Saudi Arabia and estimated the prevalence of one of allergic disorders (history of eczema, Asthma and Allergic rhinitis) in Madinah city revealed that 41.7% of children had symptoms suggestive of at least one allergic disorder [10]. In western countries, figures are different. In Turkey, the prevalence of having eczema during one's lifetime or currently were 17.1% and 8.1%, respectively [11]. In Portugal, within the 6 to 7-year-old group, there was a significant decrease in the number of "medical diagnoses" of atopic eczema in 1999 (11.4%) in comparison to 1996 (13.2%).[12] In USA, a prevalence of 17.1 % has been reported [7].

In the present study, itching skin was more significantly reported among females than males. The same has been reported by others [8, 10, 12]. This could be attributed to the genetic nature of female` s skin. Family history of allergic disorders (Atopic eczema, Asthma, Allergic rhinitis) has been reported among more than 56% of the children. It has been reported that approximately 70% of atopic dermatitis patients have a positive family history of atopic diseases [13]. The odds of developing AD are 2- to 3-fold higher in children with one atopic parent, and this increases to 3- to 5-fold if both parents are atopic [14, 15]. A maternal history of AD is possibly more predictive [16].

In conclusion, atopic dermatitis among children in Jeddah city, Saudi Arabia is a common dermatological disease. This could be attributed to the existence of a relationship between cold weather and increase the prevalence of atopic dermatitis in children however Jeddah city is tends to be warm in winter (22 ºc – 30 ºc) and hot city in summer (35 ºc – 48 ºc) and the humidity range in winter between (40% - 60%) and in summer the range between (50% - 80%) because of location of Jeddah city near to Red Sea. We believe that the atopic dermatitis is a multifactorial disease and may the weather one of these factors.

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