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Research Article

**EARLY ONSET OF ANGIOEDEMA AND URTICARIA IN  
ADOLESCENTS HAVING CROSS-REACTIVE  
HYPERSENSITIVITY TO NONSTEROIDAL ANTI-  
INFLAMMATORY MEDICINES**

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**Abstract:**

**Aim:** Early onset of angioedema and urticaria in adolescents having cross-reactive hypersensitivity to nonsteroidal anti-inflammatory medicines.

**Methods:** The Taiwan Longitudinal Health Insurance Database was studied. Patients who had suffered from urticaria or sadness previous to trial period have been barred from participation. A number of 6747 teenagers (aged 12 to 19 years) hospitalized for the first-attack urticaria incident among May 2021 and April 2022 have been enrolled as a research group, alongside 21,230 matchings no urticaria enrollees serving as a control group. Every individual has been monitored prospectively for a year to detect bouts of depression. To examine the prevalence of depression between control and study groups, Cox proportional hazards models were employed with modifications for the individuals' locations of residence also sociodemographic data. Curves of depression-free survival have similarly been examined. Lastly, the symptoms of depression have been compared among age ranges.

**Results:** During the follow-up phase, 66 (0.8%) teenagers having urticaria and 62 (0.4%) non-urticular control youths developed a second bout of depression. According to the stratification Cox proportional analyses, the crude relative risk of sadness amongst teenagers having urticaria was 1.87 times (96% CI, 1.26 + 2.97) that of control persons without urticaria. Individuals aged 15 to 19 and with the past record of asthma remained extra susceptible to depression ( $p = 0.06$  for both). Lastly, urticaria remained found to remain very risky aspect for depressive disorders solitary throughout adolescence, not in individuals aged 14 years ( $n = 14$ ) 6746 or 18 to 25 years ( $n = 14$ ) 7186.

**Conclusion:** People who have their first urticaria episode throughout adolescence are more likely to become depressed.

**Keywords:** Onset of Angioedema, Urticaria in Adolescents, Hypersensitivity, Nonsteroidal Anti-Inflammatory Medicines.

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## INTRODUCTION:

Urticaria is a condition that is regularly observed in pediatric emergency rooms and is predicted to impact 14 + 26% of persons at some time in their life [1]. Whenever a child has his or her first episode of severe urticaria, numerous fathers opt to seek emergency clinical attention, particularly if infant evolves serious or recurring symptoms such as powerful pruritus, generalized wheals, edema of lips or eyelids, respiratory failure, also digestive problems [2]. Urticaria in infants can be caused by a variety of factors, such as meals, drugs, illnesses, physical contact, temperature changes, and multifactorial reasons [3]. Similarly, in existence of unusual-looking rash, adolescent's interpersonal interactions among colleagues might be harmed since exercise, skin contact, in addition even sunshine may worsen intensity of urticaria, causing a reduction in everyday activities [4]. According to one study, 44% of older patients having dermographism urticaria had greater mental trauma and a decrease in their life quality [5]. Other particular dermatological conditions have been linked to an increased chance of having psychological difficulties later in life [6]. Psoriasis also atopic dermatitis might produce changes in personality or depression signs due to sleep disruptions or impairment in health-associated excellence of life. Likewise, in adulthood, urticaria has been linked to higher anxiety and sadness [7]. Moreover, the link between psychological issues and pediatric urticaria remains unknown. Urticaria-related depression in teenagers, specifically, has not before been examined [8]. Teenagers are widely recognized as a separate growing period defined by different procedures such as increasing cognitive abilities as well as physical changes. Adolescence is particularly sensitive to issues of mental and physical health at this time [9]. As a result, we predict that the first episode of urticaria may raise chance of new-onset depression in teenagers. Researchers wanted to learn more about urticaria-related teenage depression in this research [10].

## METHODOLOGY:

This research was examined in the Longitudinal Health Insurance Database. The LHID is created from medical claims information obtained from Bureau of National Health Insurance also made accessible to Pakistani academics for study resolutions. In 2005, Pakistani government established the National Health Insurance program to provide inexpensive health care to altogether Pakistanis. In 2018, more than 97% of Pakistan's inhabitants engaged in the current program. The LHID has unique data from 1.01 million persons.

The information used in our current research was selected at random from the years 2006 to 2019. There were no substantial variations in gender breakdown, age distribution, or median payroll-associated insurance premium rate among LHID participants and all NHI members.

The LHID additionally allows researchers to follow the utilization of medical services throughout 2005. The Pakistan National Health Research Institutes have provided details about the database's creation online. Since the data collection comprises anonymized secondary information compiled without limits for purpose of research, such a project received excluded from comprehensive evaluation by the Institutional Review Board. Prospective case-control research was used in this investigation. Data from two treatment populations, the student group (having urticaria) and the comparison group (without urticaria), were gathered from the LHID from May 2021 to April 2022. The first hospitalization for urticaria therapy throughout this time period was selected as the index hospitalization. Only those individuals in this research have been monitored for a year following their initial hospitalization. The risk of experiencing a new depression-related episode over the one-year follow-up phase has been contrasted between the two categories.

Figure 1 depicts a flowchart of the procedures used to choose the research and control subjects. Even during the follow-up phase, the measurement tool was characterized as individuals with the ICD-9-CM codes 297.3, 298.4, 301.5, and 315 as the primary diagnosis. This research excluded patients that had been identified as having urticaria or anxiety previous to their initial hospitalizations. Our overall sample comprised 6744 individuals with adolescent urticaria. The remainder of NHI beneficiaries enrolled in the LHID were chosen as the control group. Researchers randomly picked 21,230 control individuals further for research (3 control individuals for every 1 urticaria patient), who had been gender, age, and years of index health care usage equivalent to the research group.

The SAS statistics program version 11.1 was employed to conduct the analysis. Researchers chose the research and placebo variables using the SAS tool. Every participant (n 14 27,969) was followed for one year following his or her first hospitalization to determine individuals who had new-onset anxiety. Statistical statistics of the independent factors (individual features, demographics, and subjective allergy histories) are provided as percentages or

average confidence intervals. The Chi-square test was applied to compare disparities between the control and the study populations.

## RESULTS:

As demonstrated in Table 1, 0.8% (n 14/64) of individuals had a new-onset depressive episode following an episode of urticaria, whereas the comparable proportion in the comparison group was still only 0.4% (n 14/62). Even during the follow-up period, the prevalence of depression was considerably greater in urticaria individuals than in normal controls. The stratification Cox proportional hazard analysis revealed that the research institution's crude HR remained 1.87 times larger than the control group's (Table 2). However, even after controlling for geographic location, family income, and history of allergic disorders, urticaria individuals continued to be

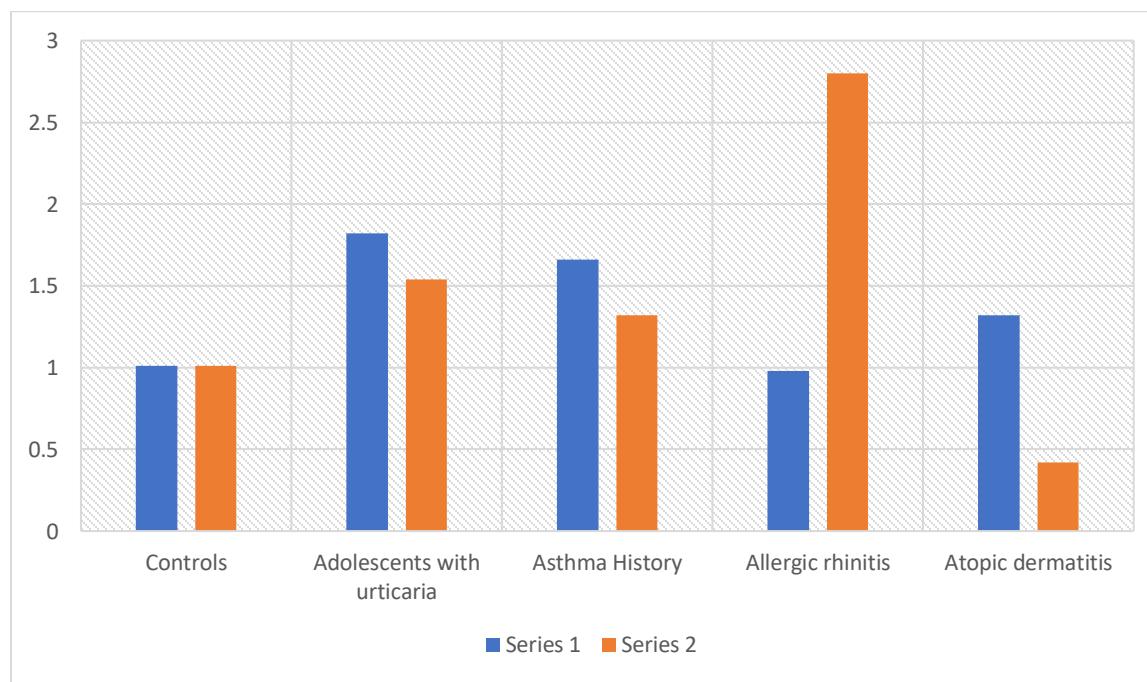
more probable than control group individuals to have had new-onset depression, with only an estimated HR of 1.78 [96% confidence level (CI); p 0.06].

Fig. 2A depicts the depression-free skills and attributes for urticaria versus control patients attending over the research period. It is worth emphasizing that urticaria individuals had substantially worse 1-year depression-free survival rates than normal controls (p 0.06). We discovered that being in the 15 + 19-year-old age group with a previous history of asthma was substantially linked associated having the second incident of new-onset melancholy following the beginning of urticaria (p 0.06 for both). A total of 956 people were hospitalized for urticaria therapy. Sadness was more common in individuals who needed to be admitted. Neither gender nor the average number of hospital visits was shown to be substantially linked with the emergence of depression.

**Table 1:**

Variables	Cases of new-onset depression	
	H R	CL %
Groups		
Controls	1.01	1.01
Adolescents with urticaria	1.82	1.54-3.59
Asthma history	1.66	1.32-3.42
Allergic rhinitis history	0.97	0.53-2.58
Atopic dermatitis history	1.32	0.42-2.17

**Graph 1:**



**Table 2:**

	Adolescents with urticaria (n ¼ 6750)		
	No	Yes	P value
Gender			
Female	3537 (53.0)	37 (58.7)	0.092
Male	3142 (47.0)	26 (41.3)	
Age group			
14-16	3594 (53.8)	47 (74.6)	<0.002
17-19	3085 (46.2)	16 (25.3)	
Asthma history			
Mean number of hospitals	30 (47.6)	3483 (52.1)	0.359
Atopic dermatitis history	1.7 ± 1.3	1.9 ± 2.1	0.278
Allergic rhinitis history	6 (9.5)	479 (7.2)	0.713

**DISCUSSION:**

In this investigation, we discovered that asthma, atopic dermatitis, and allergic rhinitis had all been possible causes of urticaria in teenagers [12]. Previous research has demonstrated that those same three allergy illnesses are highly associated with one another and have thus been labeled as the "atopic trio." These illnesses are frequently found in the same person, and they frequently proceed from food allergies and atopic dermatitis once individuals are young (baby or preschool age) to allergic rhinitis and asthma later in life [13]. The reasons for the atopic triad are complicated; nonetheless, they may be divided into three categories: environmental, immunological, and genetic. Since these variables have an influence on the onset of urticaria, individuals who have a history of epicriid diseases must be monitored for indications of urticaria [14]. In these people, recognizing environmental allergens and preventing allergic meals should be prioritized. Life stresses such as low quality of life, social phobia, acute itching, and sleep difficulties are common in elderly patients who have had a dermatological condition for a long time [15]. Nevertheless, the link between dermatological illnesses and physiological difficulties in teenagers has received little attention [16]. It is generally understood that teenage growth is characterized by increasing stress and, as a result, susceptibility [17]. The brain is very malleable throughout adolescence and can be influenced favorably or adversely by the environment. Since increasing daily or social stress has been demonstrated to produce bouts of depression throughout adolescence, researchers reasoned that teenagers having urticaria were far more likely to experience a future period of depression [18]. Nevertheless, the nature of this link is unknown. In this 1-year follow-up research, researchers discovered that urticaria was associated with an increase in future

depression [19]. Certain individual features better predicted a future depressive episode among teenagers who had their first incident of urticaria [20]. Firstly, teenagers (aged 15 to 19 years) were much more likely to be depressed than younger adolescents (aged 14 to 16 years). Second, a history of asthma was indeed a significant predictor of a later period of depression [21]. As a result, earlier psychological health intervention to avoid melancholy in teenagers having urticaria, especially individuals who have an asthma history may be crucial. That research found a relationship between urticaria and depression always during puberty [22].

**CONCLUSION:**

Adolescents who experienced their first outbreak of urticaria were found to be more likely than controls to have a later depressive episode.

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