

Prevalence of chronic urticaria: A study in the pediatric population of a general hospital

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ABSTRACT

Introduction. Chronic urticaria is an inflammatory skin condition characterized by the presence of evanescent wheals or angioedema that last for ≥ 6 weeks.

Objective. To determine the prevalence of urticaria and describe its clinical characteristics in children and adolescents under 19 years of age in a general hospital.

Population and methods. This was a cross-sectional study carried out between 2015 and 2020 in a population of children and adolescents seen at a private healthcare facility.

Results. A total of 1567 medical records of patients with urticaria seen during the study period were reviewed. Thirty-six patients with chronic urticaria were identified; the prevalence was 0.16% (95% CI: 0.11–0.22).

Conclusion. The prevalence of chronic urticaria in children and adolescents was 0.16%. A higher frequency was observed among girls and adolescents.

Keywords: epidemiology; urticaria; child.

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INTRODUCTION

Chronic urticaria (CU) is an inflammatory skin condition characterized by the presence of evanescent wheals or angioedema that appear daily or in an intercurrent manner. Each wheal lasts for less than 24 hours and develops over a period of ≥ 6 weeks.^{1,2}

Chronic urticaria is classified as spontaneous, when lesions develop but are not triggered by identifiable factors, or as inducible, when lesions are developed by triggering or physical factors.²

Mast cell degranulation is the key event and, although it may be caused by multiple factors, autoimmunity plays an important role in urticaria.^{2,3}

In children, prevalence has been reported to be 0.1% to 1.5%, regardless of sex, with variable results in different populations and a potential increase in frequency worldwide in recent years.^{4,5}

In Argentina and Latin America, epidemiological data in the pediatric population are limited.^{5,6} Although urticaria is not life-threatening, it affects the quality of life.

Primary objective

To describe the prevalence of chronic urticaria in a pediatric population seen at a general hospital working with private health insurance in the period between 1/1/2015 and 1/1/2020.

Secondary objective

To describe the clinical characteristics and types of treatment in patients with chronic urticaria.

POPULATION AND METHODS

This was a cross-sectional study carried out at a general hospital in the City of Buenos Aires, Argentina.

Patients younger than 19 years, who had been members of the private health insurance plan offered by the hospital for at least 6 months between 1/1/2015 and 1/1/2020 and who had a diagnosis of chronic urticaria according to the operational definition of the European Academy of Allergology and Clinical Immunology² were included (the diagnosis of chronic urticaria was based on the course noted in the electronic medical record [EMR] or on the presence of evanescent wheals or angioedema, with lesions that lasted less than 24 hours before and that appeared for a period of ≥ 6 weeks). Incomplete medical record data were considered as the exclusion criteria.

EMRs were manually reviewed by a member of the research team, who defined, for each patient, whether or not they met the operational definition.

Given that the frequency of chronic urticaria is low (0.1–1.5%), to estimate the sample size, it was decided to assess all the patients who met the selection criteria with the condition “urticaria” noted in the EMR and who were seen during the study period in order to be able to describe the series of cases who had a diagnosis of chronic urticaria.

To estimate the prevalence, the denominator was considered to be the number of patients younger than 19 years who had been members of the private health insurance plan for at least 6 months. Prevalence was described as a proportion with its corresponding 95% confidence interval.

Mean, standard deviation, and interquartile ranges were used to describe continuous variables. Categorical variables were expressed as absolute and relative frequency. The χ^2 test was used to compare categorical variables, while the Mann-Whitney test was used for the comparison of age given its asymmetric distribution. The Stata 13 statistical software was used.

The protocol was approved by the hospital's Research Protocol Ethics Committee (protocol number 5938, file PRIISA 3898).

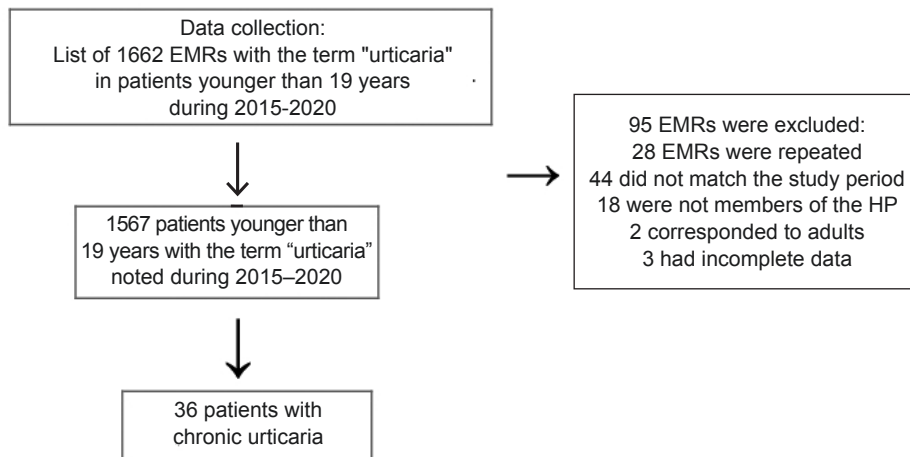
RESULTS

Out of 22 749 total patients younger than 19 years who were active members of the health plan during the study period, 1662 EMRs were obtained that included the term “urticaria” as condition. Of these, 1567 were confirmed to be complete and in accordance with the study age requirement. These 1567 EMRs with the term “urticaria” as condition were manually reviewed; 36 patients had a diagnosis of chronic urticaria. *Figure 1* shows the patient selection flowchart.

The prevalence of chronic urticaria was 0.16% (36/22 749) (95% CI: 0.11–0.22). A statistical difference in frequency by sex was observed (*Table 1*).

Nineteen patients with chronic urticaria were older than 13 years; their median age was 13.6 years (IQR: 8.2–15.7) and 27 were girls.

The characteristics of the clinical presentation, comorbidities, and treatment administered are shown in *Table 2*.

FIGURE 1. Flow chart of patient selection

EMR: electronic medical record; HP: health plan.

TABLE 1. Prevalence of chronic urticaria in children and adolescents younger than 19 years

	Number of cases	Prevalence	95% CI
Overall	(36/22 749)	0.16%	[0.11–0.22]
Female	(27/11 155)	0.24 %	[0.16–0.35]**
Male	(9/11 594)	0.08 %	[0.04–0.15]**

** $p < 0.001$.

DISCUSSION

The prevalence of chronic urticaria was 0.16%, similar to the results of international studies. The prevalence in pediatrics was investigated in different populations with variable results.⁵ Such local information is important because, due to the heterogeneity of the studies carried out at a global level, direct comparisons are difficult.

Although some studies described an increase in prevalence, a previous study conducted in the same population in 2017, which included adults and children, showed that the prevalence in children was 0.15%, demonstrating no significant increase.⁶

No differences were observed in relation to sex, except in adolescents.⁷ In our population, chronic urticaria was prevalent among girls and adolescents. Such higher frequency, although not yet clarified, may be related to physiological and hormonal changes,⁸ or to immune conditions; these are more prevalent among females.¹

Allergists and dermatologists were the specialists who most frequently treated these patients, and this may explain why the treatments administered were in line with those suggested by

the guidelines.²

Concomitant allergic diseases included asthma, rhinitis, and dermatitis, diseases that share the T2 inflammatory pathophysiological mechanism, similar to that observed in other studies.⁹

Most patients had only wheals and, less frequently, wheals and angioedema, which is also consistent with previous reports.⁹

The most common treatment indicated consisted of second-generation antihistamines, and only 2% of patients required omalizumab due to lack of response to high doses of antihistamines. In another study of children with chronic urticaria, 5% required omalizumab.¹⁰

Associated autoimmune diseases have been described; the most frequent condition was hypothyroidism.¹⁰ In our population, 2.8% of patients had hypothyroidism.

Chronic spontaneous urticaria was the most frequent form and, compared to inducible urticaria, dermatographism was the most common form, which is consistent with previous studies.^{2,4}

A strength of this study is the fact that the patients were treated by an interdisciplinary

TABLE 2. Clinical characteristics, type of chronic urticaria, and treatment

Variable	n
Follow-up by a physician	
Allergist	31/36
Dermatologist	4/36
More than 1 specialist	1/36
Treatment	
Second-generation antihistamines	32/36
Combined treatment	3/36
Monoclonal antibodies	1/36
Associated condition	
Allergic disease (asthma, rhinitis, or dermatitis)	23/36
Autoimmune thyroid disease	1/36
Unrelated comorbidities	12/36
Types of chronic urticaria	
CSU	17/36
CIU	11/36
Dermatographism	6/11
Cholinergic urticaria	4/11
Cold urticaria	1/11
Combined urticaria	8/36
Clinical presentation of urticaria and angioedema	
Wheals	26/36
Wheals and angioedema	10/36

n: number; CSU: chronic spontaneous urticaria; CIU: chronic inducible urticaria.

team of experts, in a systematic manner, which made it possible to collect and analyze data with greater certainty. The limitations of this study are its retrospective design and the fact that it was performed in a single hospital, so it may not be representative of the entire Argentine population.

CONCLUSION

The prevalence of chronic urticaria in the pediatric population was 0.16%. A higher frequency was observed among girls and adolescents. The clinical presentation, demographic characteristics, and treatment of chronic urticaria are similar to those observed in previous studies. ■

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