International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Natural History and Prognostic Factors of Chronic Urticaria in Children Aged < 2 Years - A Retrospective Study in Tertiary Centre in Bihar

Dr Nazan Shagufta

Assistant Professor, Department of Dermatology, Himalaya Medical College and Hospital, Paliganj, Patna, Bihar 801110, India
Corresponding Author Email: *nazanshaguftaimam[at]gmail.com*

Abstract: ***Background: To date, a limited number of studies have reported on the natural course and prognostic factors of chronic urticarial (CU) among children aged < 2 years. Objective: In this study, we delineated the characteristics and natural history of CU in children aged < 2 years, with an additional aim of identifying prognostic factors closely associated with CU. Methods: This study included children aged < 2 years who had CU between May 2025 and June 2025. The clinical data and laboratory results of these children were retrieved from their medical records or through telephone interviews. Results: The study population comprised 111 children with a median age of 16.30 (0.3–24) months at onset. Remission rates at 6, 12, and 36 months after the onset of CU were 36.08%, 51.55%, and 77.32%, respectively. After the sex and age at onset were adjusted, multivariate regression analysis revealed that allergic conjunctivitis was a risk factor for CU. Conclusion: The course of CU in children aged < 2 years is relatively short, with most children having a favourable outcome. Allergic conjunctivitis serves as a risk factor for CU in this age group.***

Keywords: Chronic Urticaria, Pediatric prognosis,children less than 2 years

1. Introduction

Chronic urticaria (CU) is characterized by the presence of wheals, angioedema, or both for more than 6 weeks. These symptoms may occur daily or nearly daily or exhibit an intermittent or recurring pattern [1]. With an estimated prevalence of 0.5%–5% in the general population, CU afects0.1%–1.0% of children [2–4]. Although epidemiological data on CU in children are limited, the condition tends to be less prevalent among them owing to their immature immune system [5, 6]. CU is classified as chronic spontaneous urticaria (CSU) and chronic inducible urticaria (CIndU). CIndU includes a wide range of conditions such as symptomatic demographism, delayed - pressure urticaria, cold urticarial, solar and heat urticaria, vibratory angioedema.

2. Methods

Patients and Study Design. This study was conducted in the urticaria specialty outpatient clinic in the Department of Dermatology, Children aged < 2 years who developed CU. The follow - up duration was at least 6 months for each patient. CU was defined as the persistence of wheals, angioedema, or both for more than 6 weeks. Notably, children who exhibited recurrent angioedema without wheals were excluded.

A follow - up questionnaire was administered to all patients either via telephone interviews with their parents, allowing for more convenient and timely collection of data, or during consultation sessions to assess the resolution and management of CU. The questionnaire was designed to be concise yet comprehensive, encompassing important information such as the date of the last urticarial symptoms, medications ad - ministered to the children, and concomitant symptoms experienced by the children. These symptoms included gastrointestinal symptoms such as abdominal pain or cramps, diarrhoea, mucus or blood in stools, anal pruritus, and vomiting and general symptoms such as lethargy, loss of appetite, fatigue, and fever. Remission was defined as the absence of urticaria for a minimum of 6 months after discontinuation of second - generation antihistamine.

3. Results

Characteristics of Patients. A total of 111 children who developed CU before the age of 2 years were enrolled in this study. Among these children, 97 children successfully completed the follow - up process. A total of 62 (55.86%) patients were boys. The median age at the time of inclusion was 19.83 months (range: 3–35 months), whereas the median age at the onset of CU was 16.30 months (range: 0.3–24 months). The median duration of urticaria from onset was 14.66 months (range: 1.9–70 months), and that of urticaria before inclusion was 3.57 months (range: 1.4–18 months). During the follow - up, parents of some patients reported certain factors that triggered or exacerbated urticaria, in - cluding infection (9.28%, 9/97), vaccination (7.22%, 7/97), seasons (7.22%, 7/97), food (7.22%, 7/97), heat (6.19%, 6/97), inhalation (1.03%, 1/97), exercise (2.06%, 2/97), and insect bites (1.03%, 1/97).

4. Discussion

In this study, we investigated the characteristics and natural progression of CU in children aged < 2 years. A male preponderance was observed in CU cases. The prognostic analysis showed that the overall remission rate of patients with CU was 77.32%, with approximately half of the patients achieving remission within 1 year. In addition, AC was identified as a major factor influencing the prognosis of CU. The correlation between CU and atopy remains unclear. A study suggested that children who were diagnosed with AD in their early life were at a higher risk of developing CSU later in life [10]. However, in this study, AC was positively

associated with CU. Previous studies have showed that the prevalence of atopy, characterized by a positive skin test result or a history of allergic disorders, ranges from 16.7% to33.7% among children aged 0–18 years who have CU [9, 11, 12]. In this study, the incidence of concomitant allergic diseases was significantly higher in patients with CU, accounting for 57.7% of the patient population. This discrepancy may be attributed to the varying characteristics of the study cohorts, particularly considering that the patients included in this study were younger. Furthermore, a study reported that 40.9% and 14.8% of the participants had a family history of allergic diseases and CU, respectively [13]. In this study, the proportion of patients with a family history of atopy (56.7%) was higher than that in a previous study (30.4%) [11], and the proportion of patients with a family history of CU (14.4%) was similar to that in another previous study (14.8%) [13]. In both adults and children, CU has been associated with autoimmune disorders, accompanied by an increase in the levels of autoimmune markers, including rheumatoid factor and ANA [14–16] A prospective study conducted by Chansakulporn showed that remission rates at 1, 3, and 5 years after the onset of CU were 18.5%, 54%, and67.7%, respectively, in 92 children (range: 4–15 years) with CU [11]. Du Toit et al. reported that 25% of children (range: 1.25–19 years) with CU achieved remission within 3 years [19]. Sahiner et al. conducted a retrospective study involving100 children (range: 0.7–17.2 years) with CSU for a follow - up period of 8 years and revealed that remission rates at 1, 3, and 5 years after the onset of CSU were 16.5%, 38.8%, and50.0%, respectively [20]. In this study, remission rates were significantly higher in children with CSU, with 51.55% and77.32% of the children achieving remission after 1 and3 years of symptom onset. These rates are considerably higher than those reported in several other previous studies but are comparable to those reported in a study by Park et al. (33.4%, 53.0%, and 71.2% at 6, 12, and 24 months, respectively, among children aged 2.5–9.1 years) [21]. In - consistencies in the natural history of CU among studies may be attributed to differences in the age ranges of the children involved, the definitions used to categorize the disease and remission criteria, and the duration of follow - up. Notably, younger children tend to have a more favourable prognosis [20–22]. Our results indicate that a single dose of SG - AHs is adequate to manage the condition in the majority of childhood (< 2 years) CU cases, with little need for additional treatments such as omalizumab or immunosuppressive agents. This finding differs significantly from observations in adult patients, as the research by Curto - Barredo et al. reveals that while 31.8% of CSU patients achieved complete control with standard dosages of SG - AHs, a notable 33.7% still required an increased dose to effectively manage their symptoms [23]. Despite important findings, this study has several limitations that should be acknowledged. First, as the study was conducted in a single tertiary centre, there may exist selection bias. Second, owing to the retrospective nature of the study, the remission status and triggering factors of some patients were determined through telephone interviews, which might have introduced a degree of uncertainty. Additionally, recall bias could also be present. Although we used structured questionnaires to minimize this bias, future studies should incorporate clinical follow - ups or objective measures to further enhance data reliability.

References

[1] T. Zuberbier, A. H. Abdul Latif, M. Abuzakouk, et al., “The International EAACI/GA2 LEN/EuroGuiDerm/APAAACI Guideline for the Defnition, Classification, Diagnosis, and Management of Urticaria, ” Allergy 77, no.3 (2022): 734–766, https: //doi. org/10.1111/all.15090.

[2] J. A. Bernstein, D. M. Lang, D. A. Khan, et al., “Te Di - agnosis and Management of Acute and Chronic Urticaria: 2014 Update, ” Journal of Allergy and Clinical Immunology133, no.5 (2014): 1270–1277. e66, https: //doi. org/10.1016/j. jaci.2014.02.036.

[3] B. R. Del Pozzo - Magaña, “Chronic Urticaria in Children: a Review, ” EMJ Dermatology 5, no.1 (2017): 74–82, https: //doi. org/10.33590/emjdermatol/10310538.

[4] J. Fricke, G. ´Avila, T. Keller, et al., “Prevalence of Chronic Urticaria in Children and Adults across the Globe: Systematic Review with Meta - Analysis, ” Allergy 75, no.2 (2020): 423–432, https: //doi. org/10.1111/all.14037.

[5] S. J. Lee, E. K. Ha, H. M. Jee, et al., “Prevalence and Risk Factors of Urticaria with a Focus on Chronic Urticaria in Children, ” Allergy Asthma & Immunology Research 9, no.3 (2017): 212–219, https: //doi. org/10.4168/aair.2017.9.3.212.

[6] D. Minasi, S. Manti, F. Chiera, A. Licari, and G. L. Marseglia, “Acute Urticaria in the Infant, ” Pediatric Allergy & Immunology 31, no. S26 (2020): 49–51, https: //doi. org/10.1111/pai.13350.

[7] I. Latour, L. Noguera - Morel, I. Colmenero, et al., “Chronic Urticaria in Infants as the First Manifestation of Auto - infammatory Disease,” Pediatric Dermatology 35, no.6 (2018): e337–e340, https: //doi. org/10.1111/pde.13619.

[8] M. Finetti, A. Omenetti, S. Federici, R. Caorsi, and M. Gattorno, “Chronic Infantile Neurological Cutaneous and Articular (CINCA) Syndrome: a Review,” Orphanet Journal of Rare Diseases 11, no.1 (2016): 167, https: //doi. org/10.1186/s13023 - 016 - 0542 - 8.

[9] E. Arik Yilmaz, B. Karaatmaca, P. G. Cetinkaya, O. Soyer, B. E. Sekerel, and U. M. Sahiner, “Te Persistence of Chronic Spontaneous Urticaria in Childhood Is Associatedwith the Urticaria Activity Score, ” Allergy and Asthma Proceedings 38, no.2 (2017): 136–142, https: //doi. org/10.2500/aap.2017.38.4029.

[10] N. A. Kitsioulis, N. G. Papadopoulos, S. Kostoudi, E. Manousakis, N. Douladiris, and P. Xepapadaki, “Assessment of Atopic Dermatitis as a Risk Factor for Chronic Spontaneous Urticaria in a Pediatric Population, ” Allergy and Asthma Proceedings 39, no.6 (2018): 445–448, https: //doi. org/10.2500/aap.2018.39.4166.

[11] S. Chansakulporn, S. Pongpreuksa, P. Sangacharoenkit, et al., “Te Natural History of Chronic Urticaria in Childhood: a Prospective Study,” Journal of the American Academy of Dermatology 71, no.4 (2014): 663–668, https: //doi. org/10.1016/j. jaad.2014.05.069.

[12] G. Khakoo, A. Sofanou - Katsoulis, M. R. Perkin, and G. Lack, “Clinical Features and Natural History of Physical Urticaria in Children,” Pediatric Allergy &

Immunology 19, no.4 (2008): 363–366, https: //doi. org/10.1111/j.1399 - 3038.2007.00667. x

[13] F. Bal, M. Kahveci, O. Soyer, B. E. Sekerel, and U. M. Sahiner, “Chronic Inducible Urticaria Subtypes in Children: ClinicalFeatures and Prognosis,” Pediatric Allergy & Immunology 32, no.1 (2021): 146–152, https: //doi. org/10.1111/pai.13324.

[14] P. Kolkhir, M. Muñoz, R. Asero, et al., “Autoimmune Chronic Spontaneous Urticaria,” Journal of Allergy and Clinical6 Dermatologic Therapy Immunology 149, no.6 (2022): 1819–1831, https: //doi. org/10.1016/j. jaci.2022.04.010.

[15] R. Confno - Cohen, G. Chodick, V. Shalev, M. Leshno, O. Kimhi, and A. Goldberg, “Chronic Urticaria and Auto - immunity: Associations Found in a Large Population Study, ”Journal of Allergy and Clinical Immunology 129, no.5 (2012): 1307–1313, https: //doi. org/10.1016/j. jaci.2012.01.043.

[16] E. Netchiporouk, D. Sasseville, L. Moreau, Y. Habel, E. Rahme, and M. Ben - Shoshan, “Evaluating Comorbidities, Natural History, and Predictors of Early Resolution ina Cohort of Children with Chronic Urticaria, ” JAMA Dermatology 153, no.12 (2017): 1236–1242, https: //doi. org/10.1001/jamadermatol.2017.3182.

[17] C. Sackesen, B. E. Sekerel, F. Orhan, C. N. Kocabas, A. Tuncer, and G. Adalioglu, “Te Etiology of Different Forms of Ur - ticaria in Childhood, ” Pediatric Dermatology 21, no.2 (2004): 102–108, https: //doi. org/10.1111/j.0736 - 8046.2004.21202. x.

[18] J. S. Fok, P. Kolkhir, M. K. Church, and M. Maurer, “Pre - dictors of Treatment Response in Chronic Spontaneous Ur - ticaria, ” Allergy 76, no.10 (2021): 2965–2981, https: //doi. org/10.1111/all.14757.

[19] G. Du Toit, R. Prescott, P. Lawrence, et al., “Autoanti - bodies to the High - Afnity IgE Receptor in Children with Chronic Urticaria, ” Annals of Allergy, Asthma, & Immu - nology 96, no.2 (2006): 341–344, https: //doi. org/10.1016/s1081 - 1206 (10) 61245 - 8.

[20] U. M. Sahiner, E. Civelek, A. Tuncer, et al., “Chronic Urticaria: Etiology and Natural Course in Children,” International Archives of Allergy and Immunology 156, no.2 (2011): 224–230, https: //doi. org/10.1159/000322349.

[21] H. Park, J. Y. Lee, A. Song, et al., “Natural Course and Prognostic Factors of Chronic Urticaria in Korean Children: A Single Center Experience, ” Asian Pacifc Journal of Allergy& Immunology 37, no.1 (2019): 19–24, https: //doi. org/10.12932/AP - 151117 - 0197.

[22] H. S. Kang and M. Y. Shin, “Clinical Aspects of Chronic Urticaria in Children,” Korean Journal of Pediatrics 52, no.2 (2009): 205–212, https: //doi. org/10.3345/kjp.2009.52.2.205.

[23] L. Curto - Barredo, L. R. Archilla, G. R. Vives, R. M. Pujol, andA. Gim´enez - Arnau, “Clinical Features of Chronic Sponta - neous Urticaria that Predict Disease Prognosis and Re - fractoriness to Standard Treatment,” Acta DermatoVenereologica 98, no.7 (2018): 641–647, https: //doi. org/10.2340/00015555 - 2941.