

Quality of Life and Perceived Stress in Chronic Spontaneous Urticaria: Counting the Burden

Abstract

Background: Chronic spontaneous urticaria (CSU) is a dermatosis with a significant psychological component. Only a few studies have assessed the quality of life (QoL) and perceived stress in CSU patients. **Objectives:** To evaluate the QoL and perceived stress in patients with CSU. **Materials and Methods:** A cross-sectional study was done on 54 patients of CSU attending the Urticaria clinic of the Dermatology department in a tertiary care postgraduate teaching hospital in North Kerala. QoL in chronic urticaria was assessed using the Chronic Urticaria-Quality of Life (CU-QoL) questionnaire and perceived stress was assessed using the Perceived Stress Scale (PSS). **Results:** The mean scores of CU-QoL and PSS were 55.78 and 16.31, respectively. Out of 54 patients, 26 (48.1%) had mild impairment, 26 (48.1%) had moderate impairment, and 2 (3.7%) had severe impairment of QoL. Low stress was seen in 20 (37%) patients, moderate stress in 28 (51.9%), and six (11.1%) patients had high stress. **Conclusion:** This study shows that more than half of the patients with CSU had moderate to severe impairment of QoL and had moderate to severe stress.

Keywords: Chronic spontaneous urticaria, chronic urticaria quality of life, perceived stress scale

Introduction

Quality of life (QoL) can be defined as an individual's satisfaction with life in domains that the subject considers to be important.^[1] Chronic symptoms of urticaria have a detrimental effect on the daily activities and emotional wellbeing of the patient.^[2] Stress plays a major role in the onset and exacerbation of chronic spontaneous urticaria (CSU). Moreover, the itch associated with chronic urticaria itself can be a source of distress to the patient and influence the QoL negatively.^[3]

The studies on QoL in chronic urticaria in India have mostly used generic questionnaires like the Dermatology Life Quality Index (DLQI) which can be used for any skin disease. The Chronic Urticaria-Quality of Life (CU-QoL) questionnaire is a specific and valid tool that evaluates QoL in chronic urticaria patients. It is preferred over generic questionnaires as it picks up minor and clinically important disease-centric changes.^[4]

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Materials and Methods

A cross-sectional study was conducted on 54 CSU patients aged 15 years and above attending the Urticaria clinic of the Dermatology department in a tertiary care postgraduate teaching hospital in North Kerala from June 2018 to December 2020. Sample size (n) was calculated as 54 assuming mean CU-QoL to be 36 (standard deviation, SD = 22) from the previous study, allowable error (d) to be 6%, and alpha error (α) to be 5%.^[1] Patients having other chronic diseases, mental illness, and patients who cannot read and comprehend the questionnaire were excluded from the study. Prior approval was obtained from the institutional ethics committee (Ref. No. GMCKKD/RP 2018/IEC/170). Written informed consent was taken from each patient. A specially designed proforma was used to collect data regarding patient demographics, history of disease, severity of disease, treatments taken, and clinical examination. The severity of the disease was estimated using Urticaria Activity Score (UAS-7) which involves daily assessment of wheals and pruritus

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over 1 week.^[5] QoL in chronic urticaria was assessed using the CU-QoL questionnaire.^[6] Perceived stress was assessed using the Perceived Stress Scale (PSS).^[7] The questionnaires were translated into the regional language, and back translated to English, and appropriate modifications were made. The questionnaires were pilot-studied in 15 patients to ensure the reliability and validity.

Data collected from each patient was entered into a master chart. Coding of variables and analysis was done using IBM SPSS Statistics for Windows, Version 24.0. A categorical comparison was carried out using the Chi-square test and a *P* value below 0.05 was considered significant.

Results

The mean age of the study sample was 41.13 years. The demographic data of the study population is shown in Table 1. In the study, 19 (35.2%) patients had the disease for 5 years and more, 14 (25.9%) patients had the disease for 3 to 5 years, 13 (24.1%) patients had the disease for 1 to 3 years, and 8 (14.8%) patients had the disease for less than 1 year. Among the study participants, 23 (42.6%) patients had angioedema. Out of 54 respondents, 22 patients (40.7%) had severe disease, 22 (40.7%) had moderate disease, and 10 (18.5%) had mild disease.

Exacerbating factors were identified from the history in 39 (72.22%) patients. Twenty-seven patients (50%) had exacerbations following exposure to house dust and 22 (40.8%) had exacerbations with intake of food/food additives. The number of patients whose urticarial symptoms were exacerbated due to sweat, stress, drugs, sunlight, and pressure was 13 (24.1%), 10 (18.6%), 4 (7.5%), 3 (5.6%), and 1 (1.9%), respectively. More than one exacerbating factors were reported by 27 (50%) patients. Single exacerbating factor was reported by 12 (22.2%) patients. Systemic features were observed in 17 patients out of which 13 patients (24%) had headache, 4 (7.4%) had abdominal pain, 2 (3.7%) had syncope, 1 (1.9%) had fever, and 1 (1.9%) had wheeze associated with urticaria. All 54 patients had taken H1 antihistamines for treatment of chronic urticaria. Oral steroids were taken by 42 (77.8%) during flare-ups, autologous serum therapy

by 12 (22.2%), H2 antihistamines by 6 (11.1%), and other treatment options like ayurveda and homeopathy by 1 (1.9%) patient.

The mean score of CU-QoL in the study was 55.78. Among the six domains, “impact on life activities” had the highest mean value of 15.78. Mean values for limits, sleep problems, looks, pruritus, and swelling were 9.94, 9.93, 9.59, 7.02, and 4.06, respectively. All patients enrolled in the study experienced impairment in QoL. CU-QoL was observed to have a statistically significant association with angioedema (*P* = 0.002), severity of illness (*P* = 0.002), and associated systemic features (*P* = 0.004).

The mean PSS score in the study was 16.31 with 20 (37%) patients having low stress, 28 (51.9%) having moderate stress, and 6 (11.1) having high stress. There was a statistically significant association between PSS and both angioedema (*P* = 0.031) and severity of illness (*P* = 0.010). The association between CU-QoL and PSS with angioedema and severity of urticaria is shown in Table 2.

Discussion

The mean age of patients in this study was 41.13 years which was comparable to previous studies.^[1,2] Among this, 42.6% had angioedema, a pattern observed by other researchers as well.^[8] Another study found a prevalence of 29% for urticaria with angioedema, 19% for urticaria without angioedema, and 8% for angioedema without urticaria.^[9] The severity of disease as measured by UAS-7 score revealed that 40.7% of patients had severe and moderate disease consistent with the fact that studies in chronic urticaria have mostly included patients with moderate to severe disease.^[3,10] The majority of the study sample (96.2%) had mild to moderate impairment of QoL with a mean CU-QoL score of 55.78. In the study by Choi *et al.*^[8] using the CU-QoL questionnaire with 17 items grouped into four categories (urticarial symptoms, emotional stress, stigma, and food/environmental stress), the urticarial symptom domain had the lowest score and the stigma domain scored the highest. The mean CU-QoL score was 70.6 implying severe impairment of QoL. Another study using the Brazilian version of CU-QoL comprising 23 items that are divided into three dimensions (sleep/mental status/eating, pruritus/impact in daily activities, and limitations/appearance/edema) had a mean CU-QoL score of 36. Dimension 1 (sleep/mental status/eating) had the highest score. The mean score was highest for the item “nervousness” followed by “shame over lesions” and “pruritus” whereas in our study, “impact on life activities” was the domain with the highest mean value (15.78) followed by “limits” (9.94) and sleep problems (9.93).^[11]

The present study revealed a statistically significant association between the presence of angioedema

Table 1: Demographic data of study population

Demographic variables	Categories	Number (percentage) of patients
Age (years)	15–25	6 (11.1%)
	26–35	12 (22.2%)
	36–45	17 (31.5%)
	46–55	11 (20.4%)
	56–65	8 (14.8%)
Gender	Male	21 (38.9%)
	Female	33 (61.1%)
Employment status	Employed	32 (59.3%)
	Unemployed	22 (40.7%)

Table 2: Association between CU-QoL and PSS with angioedema and severity of urticaria

Variables	Category	Number (percentage) of patients in each category	Angioedema	“P”	Severity of urticaria			“P”
					Mild	Moderate	Severe	
CU-QoL*	Mild	26 (48.1%)	5 (21.7%)	0.002	9 (90%)	14 (63.6%)	3 (13.6%)	0.002
	Moderate	26 (48.1%)	16 (69.6%)		1 (10%)	8 (36.4%)	17 (77.3%)	
	Severe	2 (3.7%)	2 (8.7%)		0	0	2 (9.1%)	
PSS†	Low stress	20 (37%)	4 (17.4%)	0.031	7 (70%)	10 (45.5%)	3 (13.6%)	0.010
	Moderate stress	28 (51.9%)	15 (65.2%)		3 (30%)	11 (50%)	14 (63.6%)	
	High stress	6 (11.1%)	4 (17.4%)		0	1 (4.5%)	5 (22.7%)	

*CU-QoL - Chronic urticaria-quality of life. †PSS - Perceived stress scale

and the worsening of the QoL in chronic urticaria patients ($P = 0.002$) consistent with previous researches.^[8,11] Similarly, there was a significant association between the severity of disease and CU-QoL ($P = 0.002$) which could be possibly due to the fact that disease severity can have a direct effect on factors like sleep, concentration and performance at work, leisure time, and appearance; impacting the QoL of the patient. Such an association was documented by other researchers as well.^[3,12] According to some studies, women tend to be more sensitive and aware of the symptoms of urticaria and are more severely influenced by changes in appearance compared to men.^[1] However, our study did not reveal any significant difference of association of impact of gender on QoL. In the study by Dias GAC, a greater impact was observed in all dimensions of CU-QoL in women, though the association was not statistically significant.^[1] In another study using DLQI, women with chronic urticaria were found to be more affected than men in domains like daily activities, vitality, emotional role, and mental health.^[13] According to several other studies, middle-aged people suffered a worse impact on QoL, particularly in aspects of sleep, mental status, and eating. Since this age group comprises individuals at the peak of their professional lives, any disruption in sleep and mental state can profoundly limit their work efficiency.^[1] Nevertheless, no significant association was observed between age and QoL in this study. Duration of illness did not seem to play a significant role in QoL in our study. The study using DLQI though, could identify a statistically significant difference with patients having a disease duration of up to one year having poorer QoL scores in domains of leisure and personal relationships.^[13]

The level of perceived stress was mild to moderate in the majority (88.9%) of the sample in the present study with a mean PSS score of 16.31. It had been observed that patients with CSU had higher levels of life event stress and perceived stress. Besides, urticaria, apart from being precipitated and exacerbated by stress, can itself be a major cause of stress.^[12] In the study by Chung *et al.*,^[14] the mean PSS score in chronic idiopathic urticaria was 25.51, and PSS score in patients with chronic idiopathic urticaria was higher than the same noted in patients with allergies.

Limitations

Limitations of our study were a small sample size, single-center design, absence of a control group, bias associated with questionnaires like translation and recall bias, and no engagement of advanced statistical analysis. Since our study was conducted in a tertiary care center, the results cannot be reflected onto the general population.

Conclusion

Patients with a greater severity of disease and angioedema suffer greater disability in terms of QoL and perceived stress in chronic urticaria with specific variables contributing to a negative impact on QoL. This highlights the importance of a multidimensional assessment of QoL in chronic urticaria with important implications for adjunctive stress management approaches in the treatment of chronic urticaria.

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Conflicts of interest

There are no conflicts of interest.

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