

Introduction

Chronic spontaneous urticaria is defined by recurrent episodes occurring at least twice a week for ≥ 6 weeks without inducible causes. Females are more commonly affected than males. The etiology of CU is heterogeneous. CU has a significant impact on quality of life. CU is a common skin condition that affects up to 5% of the general population. IgE plays an essential role in type I hypersensitivity, which manifests various allergic diseases such as allergic asthma, allergic rhinitis, food allergy, some types of chronic urticaria and atopic dermatitis. IgE-mediated autoimmunity or autoallergy against several autoallergens, including thyroid peroxidase, double stranded DNA, IL-24, thyroglobulin and tissue factor, is thought to play a major role in the pathogenesis of CSU. Interleukin (IL)-18 is a pleotropic cytokine that provides an important link between innate and adaptive immune responses and it can enhance both. It can activate T cells and induce either T-helper (Th)1 or Th2 responses, depending on the cytokine environment. It has been suggested that IL-18 may play an important role either in autoimmune disorders, characterized by a predominant Th1 response, or in allergic diseases, characterized by a Th2 response.

Aim of the work

The aim of this study was to assess the possible relationship between serum levels of IL-18 and IgE and disease severity in patients with chronic spontaneous urticaria.

Subjects and Methods

Patients: The present study included two groups: Group A consisted of 30 patients with chronic spontaneous urticaria and group B consisted of 15 age and sex matched healthy control subjects. In all subjects antihistamines were stopped 5 days before testing. All conditions or medications known to influence IgE and IL18 serum levels were excluded from patients.

Methods: All included patients were subjected to; history taking and clinical examination including evaluation of clinical severity according to urticaria activity score 7 (UAS7) and autologous serum skin test (ASST) was done to all patients to determine the group with autoimmune urticaria. In both groups, serum IL18 level was measured by ELISA technique (Elabscience, human IL-18 ELISA Kit, USA) and serum total IgE level was measured by means of electrochemiluminescence immunoassay “ECLIA” technique (Cobas, USA).

Results

Table 1: Comparison between the two studied groups according to serum IL18 and IgE levels.

	Patients (n = 30)		Control (n = 15)		Test of Sig.	p
	No.	%	No.	%		
IL18 (pg/ml)					U= 137.50*	0.035*
Min. – Max.	0.0 – 610.0		0.0 – 412.0			
Mean ± SD.	214.9 ± 167.3		115.6 ± 121.1			
Median (IQR)	165.5(86.50 – 360.0)		64.20(39.65 – 128.9)			
IgE (IU/ml)					U= 60.0*	<0.001*
Min. – Max.	42.80 – 2500.0		17.30 – 203.0			
Mean ± SD.	412.8 ± 533.9		74.67 ± 55.73			
Median (IQR)	235.0 (101.0 –428.0)		63.60 (27.45 –102.5)			

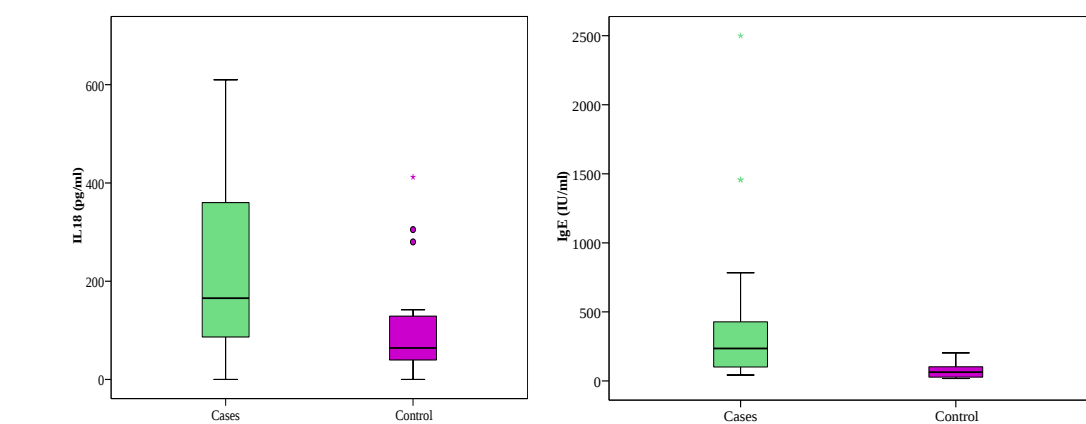


Figure 1: Comparison between the two studied groups according to IL18 and IgE levels

Table 2: Relation between clinical severity (UAS7) and serum levels of IL18 and IgE in patient group.

	UAS7			H	p
	Mild (n = 7)	Moderate (n = 14)	Severe (n = 9)		
IL18 (pg/ml)				2.883	0.237
Min. – Max.	0.0 – 542.5	22.70 – 610.0	47.40 – 423.9		
Mean $\pm$ SD.	158.8 $\pm$ 198.0	212.1 $\pm$ 172.3	263.1 $\pm$ 135.8		
Median	67.70	153.2	255.4		
IgE (IU/ml)				8.289*	0.016*
Min. – Max.	70.70 – 359.0	42.80 – 1458.0	145.0 – 2500.0		
Mean $\pm$ SD.	189.7 $\pm$ 114.4	274.4 $\pm$ 358.7	801.4 $\pm$ 753.2		
Median	183.0	151.5	692.0		

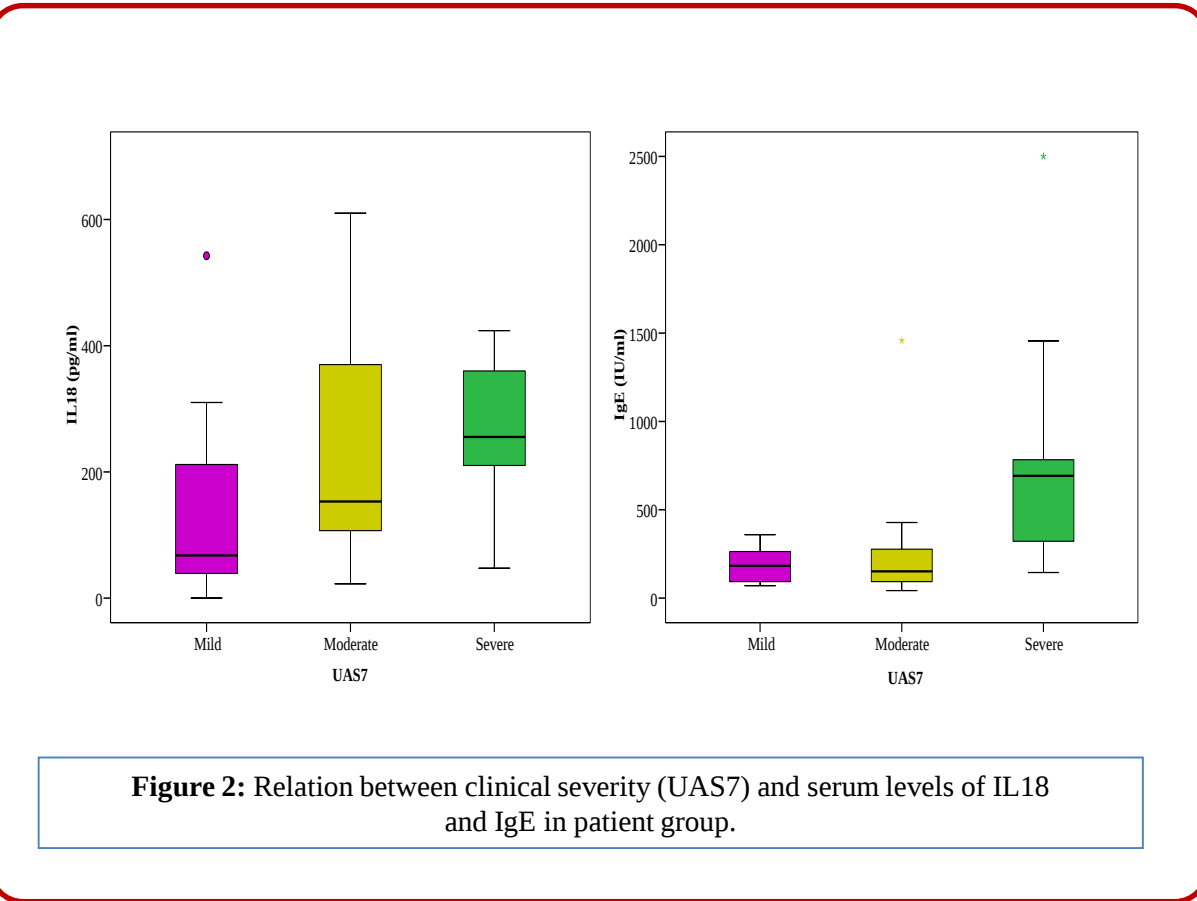


Figure 2: Relation between clinical severity (UAS7) and serum levels of IL18 and IgE in patient group.

Conclusion

- Serum IL-18 and serum IgE levels are significantly higher in CSU patients than in control subjects which indicate their role in the pathogenesis of CSU.
- Serum IL-18 level is not related to clinical severity of the disease. But IgE levels are directly related to CSU severity accordingly, serum IgE can be used as a biomarker to assess the disease severity in CSU.