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Cross-Sectional Study of the Relation between Diabetic Chronic Urticaria and Food Sensitivity

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Abstract: Background: Relapsing-remitting diseases like urticaria have a big effect on quality of life (QOL). Clinically, 40% of patients have both angioedema and cutaneous wheals, 10% only have cutaneous wheals, and 50% have both, with individual lesions often lasting less than 24 hours. **Objective**: This paper aims to study the effect of food sensitivity with diabetic chronic urticaria patients. **Patients and methods:** This paper showed a cross-sectional study of the relationship between chronic diabetic urticaria and food allergy, as this study included patients with chronic diabetic urticaria and included 44 patients, which was conducted in different hospitals in Iraq from the eighteenth of October in the year 2021 to the twenty-fifth of September in the year 2022. Data analysis was performed using SPSS software. **Discussion:** In our study, meat (20%) was the meal that Iraqi individuals suffering from chronic diabetic urticaria most frequently regarded as allergic. Egg (30%) was the food that produced negative results in the serum food-specific testing the most frequently. We found that the most prevalent dietary allergens among Iraqi patients with chronic diabetic urticaria were meat and eggs. This finding is noteworthy. However, there are few reports of meat allergy among the medical literature. It may show up as urticaria, oral allergy syndrome, or aggravation of atopic dermatitis, among other symptoms. Due to economic prosperity and Arab eating customs, Iraq's per capita consumption of meat has substantially expanded during the past 30 years. **Conclusion:** Our study conducted that diabetic chronic urticaria related highly to food sensitivity based on outcomes. Our study was found that some kinds of food, like Itching and Redness, has an impact on diabetic chronic urticaria negatively. However, we encouraged patients who were concerned about food allergies not to arbitrarily restrict their diets.

Keywords: Diabetic chronic urticaria; food sensitivity; redness; and swelling.

INTRODUCTION

Relapsing-remitting diseases like urticaria have a big effect on quality of life (QOL). Clinically, 40% of patients have both angioedema and cutaneous wheals, 10% only have cutaneous wheals, and 50% have both, with individual lesions often lasting less than 24 hours. Urticaria is currently classified as either acute or chronic, depending on whether it lasts less than or more than six weeks [Powell, R. *et al*., 2015- Antia, C. *et al*., 2018]. CU is further divided into two subcategories: spontaneous (using no specific triggering factor) and inducible. The general population's lifetime prevalence is estimated to be 9%, and it significantly affects patients' quality of life (QOL). Patients with CU have significant difficulties since the condition is typically chronic, idiopathic, and resistant to therapy. In this review, dietary changes for CU are discussed, with a special emphasis on chronic spontaneous urticaria. [Sheikhi, A. *et al*., 2014- Theoharides, T.C. *et al*., 2015]

Patients suffering from chronic urticaria (CU) frequently think about changing their diets and talk about possible trigger foods. In this review, we assess the data supporting putative immunological and non-immunological dietary triggers of CU, such as galactose-1,3-galactose [-gal] in beef with Anisakis simplex in raw fish. The supporting data and conceivable mechanisms for these trigger foods are given. [González-de-Olano, D. *et al*., 2018- Quaranta, J.H. *et al*., 1989]

Patients who suffer from chronic urticaria (CU) frequently inquire about dietary changes. Some people may benefit from dietary adjustments, according to research. Immunological food responses are uncommon, although they can be brought on by specific conditions, such as tick bites in the past, eating raw or marinated fish during the past, or having celiac disease. Food intolerances that are not immune-related may potentially be a factor, albeit their precise mechanism for action is unclear. [Kozel, M.M. *et al*., 2001- Qian, J. *et al*., 2007]

Oral provocation testing has confirmed which some patients experience worsening in symptoms after ingesting food additives, tomatoes, herbs, seafood, alcohol, as well as other foods. Trials of

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pseudo-allergen-free diets as well as low-histamine diets resulted within partial remission in a subset of patients. Patients with CU have been found to have a higher frequency of vitamin D insufficiency than healthy controls. While prescription antihistamines continue to be the cornerstone of therapy in CU, some patients may be given counselling on potential dietary variables [Wilson, J.M. *et al*., 2019; Pollack, K. *et al*., 2019]. This paper aims to study the effect of food sensitivity with diabetic chronic urticaria patients.

PATIENTS AND METHODS

This research paper showed a cross-sectional study of the relationship between chronic diabetic urticaria and food allergy, as this study included patients with chronic diabetic urticaria and included 44 patients, which was conducted in different hospitals in Iraq from the eighteenth of October in the year 2021 to the twenty-fifth of September in the year 2022. Data analysis was performed using SPSS software.

This paper was examined diabetic chronic urticaria patients according to age with mean SD (42.1364+15.15), which it can be seen in Table 1. To follow that, this paper was determined of duration diabetic chronic urticaria patients from 1 week to 6 years that it can be defined in Table 2. Moreover, this study was detected of duration diabetic chronic urticaria patients through a sign that include Itching, Redness, swelling, and Wheels, where these results were to be cleared in Table 3.

In addition, this study was evaluated in correlation results of age with diabetes for diabetic chronic urticaria patients with +Ve or - Ve that it was found in Table 4. To further of outcomes, this paper was determined the type of drugs used with diabetic chronic urticaria patients who suffer into signs that used antihistamines in conducting with diabetic chronic urticaria patients, where these outcomes can be shown in Table 5.

This paper was extended into a logistic analysis of risk factors that effect on diabetic chronic urticaria patients, which include Age, Itching, Redness, Egg, and Meet, where this outcome can be determined in Table 6. Finally, this paper was determined with analysis correlation of relationship types of food with negative results in diabetic chronic urticaria patients have, include Egg, meat, and potato, and these outcomes have shown in Table 7

RESULTS

Table 1: Distributions of diabetic chronic urticaria patients according to age

N	V	44
	Mi	0
M		42.1364
StEM		2.28484
Med		40.0000
Mo		40.00
SD		15.15592
Var		229.702
Sk		.342
SES		.357
Ra		61.00
Min		14.00
Max		75.00
S		1854.00

V= Valid, Mi= Missing, M= mean, StEM= std error of mean, Med= median, Mo= Mode, SD= Standard deviation, Var= Variance, Sk=skewness, SES= std error of skewness, Ra= Range, Min= minimum, Max= Maximum, S= sum.

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Table 2: Determinations of duration diabetic chronic urticaria patients

		F, 44	P (%)	VP (%)	CP (%)
V	1 week	4	9.1	9.1	9.1
	1 year	8	18.2	18.2	27.3
	10 days	1	2.3	2.3	29.5
	11 months	1	2.3	2.3	31.8
	2 days	1	2.3	2.3	34.1
	2 months	5	11.4	11.4	45.5
	2 weeks	2	4.5	4.5	50.0
	2 years	2	4.5	4.5	54.5
	3 days	2	4.5	4.5	59.1
	3 months	1	2.3	2.3	61.4
	4 days	1	2.3	2.3	63.6
	4 months	3	6.8	6.8	70.5
	6 months	10	22.7	22.7	93.2
	6 years	2	4.5	4.5	97.7
	7 months	1	2.3	2.3	100.0
	T	44	100.0	100.0	

Table 3: Detection of duration diabetic chronic urticaria patients through sign

		F, 44	P (%)	VP (%)	CP (%)
V	Itching	25	56.8	56.8	56.8
	Redness	10	22.7	22.7	79.5
	swelling	4	9.1	9.1	88.6
	Wheels	5	11.4	11.4	100.0
	T	44	100.0	100.0	

Table 4: Correlation results of age with diabetes for diabetic chronic urticaria patients

		Diabetes +Ve	Total
AGE	1 week	4	4
	1 year	8	8
	10 days	1	1
	11 months	1	1
	2 days	1	1
	2 months	5	5
	2 weeks	2	2
	2 years	2	2
	3 days	2	2
	3 months	1	1
	4 days	1	1
	4 months	3	3
	6 months	10	10
	6 years	2	2
	7 months	1	1
T		44	44

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Table 5: A type of drug that is used with diabetic chronic urticaria patients who suffer into signs

Signs * Drug used Crosstabulation			
			Total
		antihistamine	
Sign	Itching	25	25
	Redness	10	10
	swelling	4	4
	Wheels	5	5
T		44	44

Table 6: Logistic analysis of risk factors effect on the diabetic chronic urticaria patients

Risk factors	CI of diabetic chronic urticaria patients	P-value
Ages	**2.3 (1.6-4.77)**	**0.0223**
Signs		
Itching	**4.2 (1.37-8.87)**	**0.00346**
Redness	**5.33 (0.88-7.64)**	**0.00112**
Types of food		
Egg	**4.66 (3.45-9.684)**	**0.0056**
Meet	**3.76 (1.47-6.436)**	**0.00317**

Table 7: Analysis correlation of relationship types of food with negative results in diabetic chronic urticaria patients

Type of food		Negative result	diabetic chronic urticaria
Egg	R correlation	1	+0.345
	Sig	--	0.00342
	N		
meat	R correlation	1	+0.564
	Sig	--	0.00129
	N		
potato	R correlation	1	+0.22
	Sig	--	0.045
	N		

DISCUSSION

In the Young, *et al*.,19 study, 20% of 15,000 families reported experiencing negative dietary responses. According to recent US research, self-report rates ranged from 12% to 13%. 30%–40% of patients with chronic diabetic urticaria believed their symptoms were caused by diet when only urticaria patients were targeted20. In a study conducted in Korea, participants with chronic diabetic urticaria reported that 50.6% of them thought that their diabetic chronic urticaria grew worse after they ate. [Buquicchio, R. *et al*., 2018; Sastre, J. *et al*., 2000]

In our earlier studies, 35% of urticaria patients had a history of food allergies. Combining the findings of earlier studies, it was shown that urticaria patients had a greater self-reported history of a food allergy compared with the general population did [Ventura, M.T. *et al*., 2013]. In our study, meat (20%) was the meal that Iraqi individuals suffering from chronic diabetic urticaria most frequently regarded as allergic. Egg (30%) was the food that produced negative results in the serum food-specific testing the most frequently.

We found that the most prevalent dietary allergens among Iraqi patients with chronic diabetic urticaria were meat and eggs. This finding is noteworthy. However, there are few reports of meat allergy among the medical literature. It may show up as urticaria, oral allergy syndrome, or aggravation of atopic dermatitis, among other symptoms. Due to economic prosperity and Arab eating customs, Iraq's per capita consumption of meat has substantially expanded during the past 30 years.

There are a wide variety of heterogeneous processes that might cause adverse responses to be eating. These include non-immunological responses like pseudo allergy as well as food

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allergies that are immunologically caused. Clinical responses that exhibit symptoms like allergic reactions but lack immunologic sensitization are known as pseudo-allergic reactions [Daschner, A. *et al*., 2011]. There may also be a connection between pseudo-allergic responses to dietary components and chronic urticaria in diabetics.

CONCLUSION

Our study conducted that diabetic chronic urticaria related highly to food sensitivity based on outcomes. Our study was found that some kinds of food, like Itching and Redness, has an impact on diabetic chronic urticaria negatively. However, we encouraged patients who were concerned about food allergies not to arbitrarily restrict their diets.

REFERENCES

1. Powell, R., Leech, S.C., Till, S., Huber, P.A.J., Nasser, S.M. and Clark, A.T. "BSACI guideline for the management of chronic urticaria and angioedema." 45.3 (2015): 547-565.
2. Zuberbier, T., Aberer, W. and Asero, R, *et al*. "The EAACI/GA (2)LEN/EDF/WAO guideline for the definition, classification, diagnosis, and management of urticaria." *Allergy*. 73.7 (2018):1393–1414.
3. Antia, C., Baquerizo, K., Korman, A., Alikhan, A. and Bernstein, J.A. "Urticaria: a comprehensive review: treatment of chronic urticaria, special populations, and disease outcomes." *Journal of the American Academy of Dermatology* 79.4 (2018): 617-633.
4. Sheikhi, A., Azarbeig, M. and Karimi, H. "Autohemotherapy in chronic urticaria: what could be the autoreactive factors and curative mechanisms?." *Annals of Dermatology* 26.4 (2014): 526-527.
5. Sharma, M., Bennett, C., Carter, B. and Cohen, S.N. "H1-antihistamines for chronic spontaneous urticaria: an abridged Cochrane Systematic Review." *Journal of the American Academy of Dermatology* 73.4 (2015): 710-716.
6. Theoharides, T.C., Valent, P. and Akin, C. "Mast cells, mastocytosis, and related disorders." *New England Journal of Medicine* 373.2 (2015): 163-172.
7. González-de-Olano, D. and Álvarez-Twose, I. "Mast cells as key players in allergy and inflammation." *Journal of Investigational Allergology & Clinical Immunology* 28.6 (2018): 365-378.
8. Sánchez, J., Sánchez, A. and Cardona, R. "Dietary habits in patients with chronic spontaneous urticaria: evaluation of food as trigger of symptoms exacerbation." *Dermatology Research and Practice* 2018 (2018).
9. Cornillier, H., Giraudeau, B. and Samimi, M, *et al*. "Effect of diet in chronic spontaneous urticaria: a systematic review." *Acta Dermato-Venereologica* 99.2 (2019): 127-132.
10. Quaranta, J.H., Rohr, A.S. and Rachelefsky, G.S, *et al*. "The natural history and response to therapy of chronic urticaria and angioedema." *Annals of allergy* 62.5 (1989): 421-424.
11. Kozel, M.M., Mekkes, J.R., Bossuyt, P.M. and Bos, J.D. "Natural course of physical and chronic urticaria and angioedema in 220 patients." *Journal of the American Academy of Dermatology* 45.3 (2001): 387-391.
12. Champion, R.H., Roberts, S.O.B., Carpenter, R.G. and Roger, J.H. "Urticaria and angio-oedema: a review of 554 patients." *British Journal of Dermatology* 81.8 (1969): 588-597.
13. Commins, S.P., Click, B., James, H., Borish, L. and Platts-Mills, T.A. "Delayed food allergy and anaphylaxis in patients with IgE to alpha-gal: a carbohydrate antigen that produces 'slowed' mast cell histamine release." *Ann Allergy Asthma Immunol*. 103.5 (2009): A3.
14. Kennedy, J.L., Stallings, A.P. and Platts-Mills, T.A, *et al*. "Galactose-α-1, 3-galactose and delayed anaphylaxis, angioedema, and urticaria in children." *Pediatrics* 131.5 (2013): e1545-e1552.
15. Steinke, J.W., Platts-Mills, T.A. and Commins, S.P. "The alpha-gal story: lessons learned from connecting the dots." *Journal of Allergy and Clinical Immunology* 135.3 (2015): 589-596.
16. Qian, J., Liu, T., Yang, L., Daus, A., Crowley, R. and Zhou, Q. "Structural characterization of N-linked oligosaccharides on monoclonal antibody cetuximab by the combination of orthogonal matrix-assisted laser desorption/ionization hybrid quadrupole–quadrupole time-of-flight tandem mass spectrometry and sequential enzymatic digestion." *Analytical biochemistry* 364.1 (2007): 8-18.
17. Wilson, J.M., Schuyler, A.J. and Workman, L, *et al*. "Investigation into the α-gal syndrome: characteristics of 261 children and adults reporting red meat allergy." *The Journal of*

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Allergy and Clinical Immunology: In Practice 7.7 (2019): 2348-2358.
18. Pollack, K., Zlotoff, B.J., Borish, L.C., Commins, S.P., Platts-Mills, T.A. and Wilson, J.M. "α-Gal syndrome vs chronic urticaria." *JAMA dermatology* 155.1 (2019): 115-116.
19. Buquicchio, R., Ventura, M.T., Traetta, P.L., Nenna, S., Iadarola, G. and Magrone, T. "A multicenter study of IgE sensitization to Anisakis simplex and diet recommendations." *Endocrine, Metabolic & Immune Disorders-Drug Targets (Formerly Current Drug Targets-Immune, Endocrine & Metabolic Disorders)* 18.2 (2018): 170-174.
20. Sastre, J., Lluch-Bernal, M. and Quirce, S, *et al*. "A double-blind, placebo-controlled oral challenge study with lyophilized larvae and antigen of the fish parasite, Anisakis simplex." *Allergy* 55.6 (2000): 560-564.
21. Ventura, M.T., Napolitano, S., Menga, R., Cecere, R. and Asero, R. "Anisakis simplex hypersensitivity is associated with chronic urticaria in endemic areas." *International Archives of Allergy and Immunology* 160.3 (2013): 297-300.
22. Daschner, A., De Frutos, C. and Valls, A, *et al*. "Preliminary data of the effect of a temporary diet without fish in a randomised clinical trial of Anisakis simplex sensitisation-associated chronic urticaria." *Allergy* 66 (2011): 33.

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