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ASSOCIATION OF VISFATIN IN OBESE PATIENTS OF DIABETIC NEPHROPATHY

[1]Dr. Sarah Khan, [2]Abdul Wadood, [3]Aqsa Arshad
[1]Sheikh Zayed Medical College, RYK
[2]Mayo Hospital Lahore
[3]DHQ Hospital Hafizabad

Abstract:
Objective: *Visfatin is anticipated as an adipocytokine secretion from the fat of visceral & level of its blood associate with fatness, high blood sugar & swelling. The purpose of this research work was to check the relationship of the serum visfatin with measures of fatness in a collection of patients suffering with diabetic disease of the kidneys & the normal healthy controls.*
Methodology: *This research work was a transverse study analysing sixty participants including thirty patients and thirty healthy controls. Anthropometric calculations carried out with the utilization of the standard procedures & visfatin calculation carried out with the help of EIA Kit.*
Results: *Serum visfatin in the fat participants of the both groups were not much dissimilar from the non-fat participants. We gained a positive association of visfatin with body mass index but no relationship with the circumference of the waist & the ratio of waist to hip. Serum visfatin in the participants of the DN (diabetic nephropathy) & non diabetic's participants was 9.2 ± 5.4 vs. 5.2 ± 3.4.*
Conclusion: *Serum visfatin is not associated with the identifiers of visceral fatness together with circumference of the waist & ratio of waist to hip. However, a clear association is present with the body mass index (BMI). Future research works with high amount of the size of samples & calculating expression of the visceral tissues of visfatin may elaborate its possible part in the visceral fatness.*
Key Words: *Visceral Fatness, Kidney Diseases, Visfatin, Diagnosing, Biology of Adipose, Precursor.*

Corresponding author:
Dr. Sarah Khan,
Sheikh Zayed Medical College,
RYK

QR code

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INTRODUCTION:

Fatness and high blood sugar are the vital complications of the health in the whole world. Increase in the fatness can be a cause of the diabetes. The occurrence of diabetes mellitus is supposed to rise from one hundred and seventy-one million in 2000 to three hundred and sixty-six million in 2030 [1]. Danger of diabetic kidney diseases is rising in the countries of Asia [2]. The fatness pandemic has called for widespread investigations on the biology of adipose. The research works of the past years lighted on the capability of endocrine of a tissue of adipose & previous idea of the tissue of adipose as just a place of the storage of nutrients storage has been destroyed by the diagnosing the ability of adipose tissue to release various cytokines including leptin, TNF-α & IL-6 [3].

The regional disparity in the adipose tissue is also associated with danger. Fukuhara in the year of 2005 provided the elaboration to this issue with the diagnosis of a particular adipokine, Visfatin which was shown in the visceral fat [4]. It is also similar and increases the development precursors of B cell which was exposed by Samal in the year of 1994, as a development factor for precursor of B lymphocyte & it was found that visfatin was again exposed of B-cell colony-enhancing factor, PBEF in visceral fat [5]. It functions as a NPT (Nictinamide phosphoribosyl transferase) [6] & even with great fascinatingly it functions as a cytokine which is inflammatory [7]. Visceral fat is not only single production house for visfatin but other human organs can create it as brain, kidney, spleen & testis [8]. The information about the relationship of visfatin with fatness was first elaborated by Fukuhara. Visfatin can also support the association between fatness & high blood sugar. In this research work it was hypothesized that the amount of the serum visfatin would be increases in the fat people with greater area of the waist.

METHODOLOGY:

This research work carried out from January, 2018 to September 2018.Sixty subjects were the participants of the research in which thirty were the patients of DN & thirty were the normal healthy controls. DN Patients were detected by nephrology department of JPMC. Convenient sampling procedure was in use for the selection of the age matched healthy controls. There was a special criteria mentioned for the inclusion of the patients in the research work. The age of the patients was from forty to sixty year, with a specific range of BMI & free from any other serious disease for inclusion in the case study. Al the patients were informed about the aim of the study & their willing was taken. Data collection carried out with the help of questionnaire.

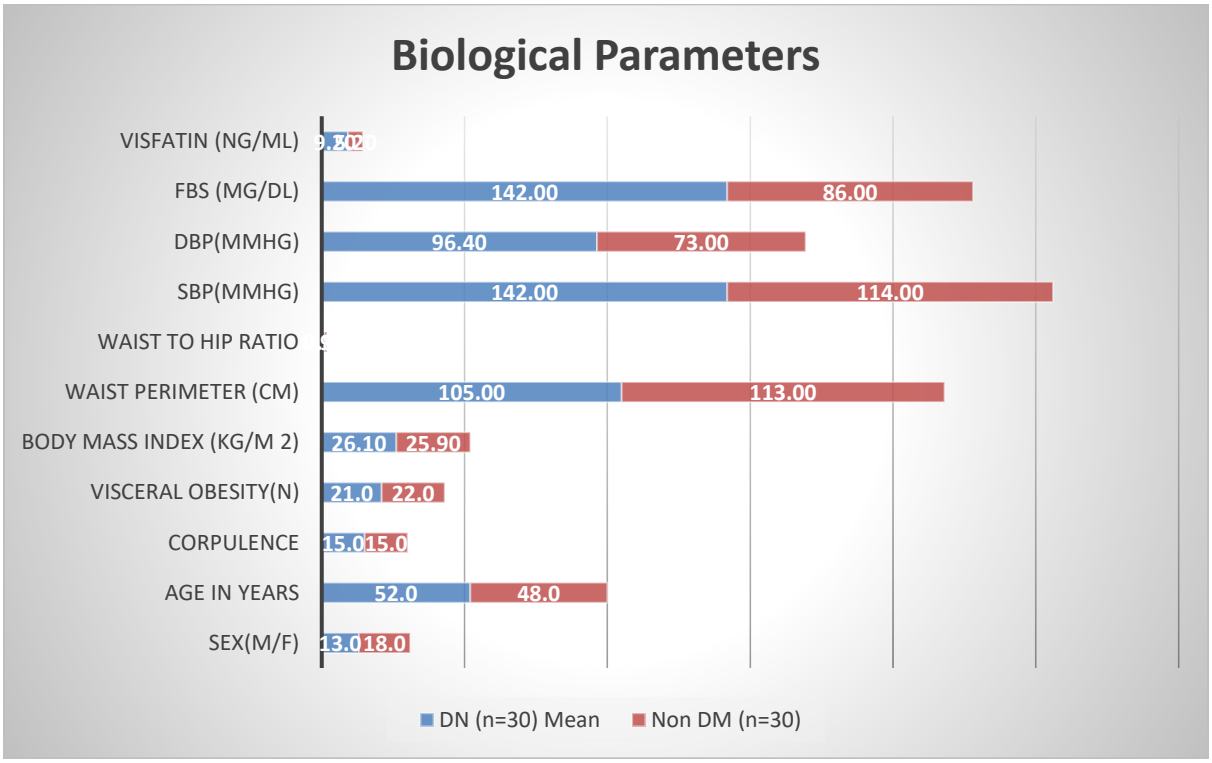
The information of BP, patient's weight, & height gathered with standard procedures. Inch tape utilized for the measurement of the waist. Body mass calculation was carried out as weight of the patient divided by patient's height in square of meters. WHO prescribed standard was used for the confirmation of the fatness in males and females with specific ratings [10-11]. If the blood glucose level was lesser than one hundred and ten mg/dl according to the world health organization standard, the subject was declared as non-diabetic [12]. The samples of blood were taken from all the participants. Serum was separated from the blood and stored at negative seventy centigrade. EIA kit Utilization carried out for the measurement of Serum Visfatin. The lowest diagnosis amount with this procedure was 2.13 ng /ml & the range of diagnosis was 0-1000 ng/ ml. SPSS software version eleven was in use for the entry and the analysis of the data. Chi square teat was used for the comparison of the baseline traits of fat & non obese participants. Linear correlation among the variables was measured with the help of Pearson's correlation.

RESULTS:

The medical traits of the patients are displayed in Table-1.

Table-I: Anthropometric and biological parameters of study subjects.

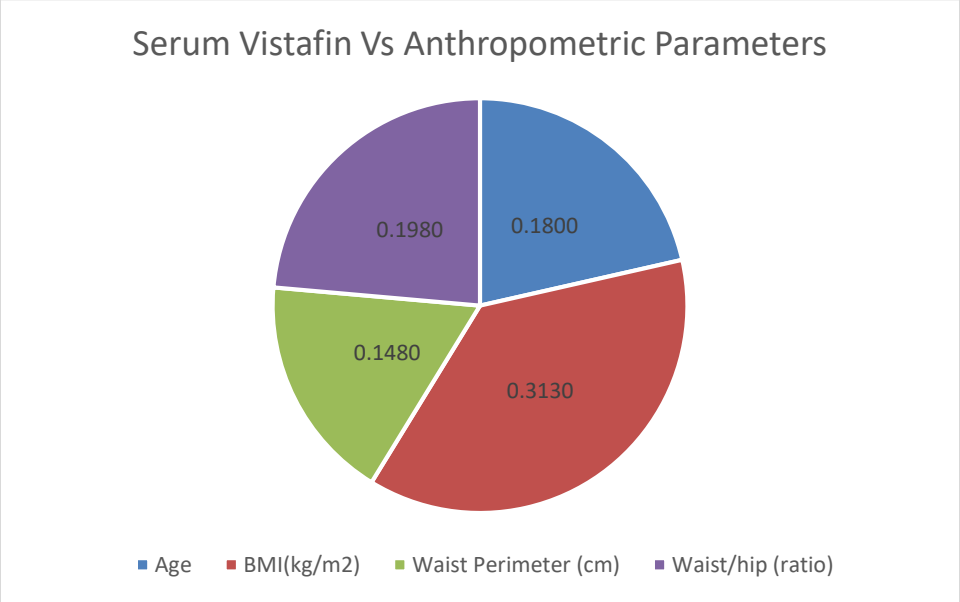
	DN (n=30)		*Non DM (n=30)*	
Sex(M/F)	*13.0*	*17*	*18.0*	*12*
Age in years	*52.0*	*± 6.90*	*48.0*	*± 5.90*
Corpulence	*15.0*	*-*	*15.0*	*-*
Visceral obesity(n)	*21.0*	*-*	*22.0*	*-*
Body Mass Index (kg/m ^{2})	*26.10*	*± 5.80*	*25.90*	*± 4.50*
Waist Perimeter (cm)	*105.00*	*±23.20*	*113.00*	*±25.40*
Waist to hip ratio	*0.93*	*±0.06*	*0.88*	*±.13.00*
SBP(mmHg)	*142.00*	*± 9.94*	*114.00*	*± 7.70***
DBP(mmHg)	*96.40*	*± 7.80*	*73.00*	*± 9.80***
FBS (mg/dl)	*142.00*	*±12.00*	*86.00*	*± 11.00***
Visfatin (ng/ml)	*9.20*	*± 5.40*	*5.20*	*±3.24**



The amounts of visfatin are not different in both genders (men n=31, 6.8 ± 7.5 vs. women n= 29, 7.5 ± 5.9 p=0.58). The average concentration of the visfatin was not dissimilar between fat in comparison to controls as shown in Figure-1. The average concentration of visfatin in central or visceral fatness patients and without visceral fatness was n=43, 7.3 ± 5.3 vs. n=17, 6.8 ± 3.6 p= 0.75. Relationship of visfatin with fatness measures is available in Table-2. Association with the circumference of the waist is displayed in Figure-2. Plasma visfatin in fat patients having DN & non-fat patients with DN was n=15, 10.3±7.0 v s. n=15, 8.0±2.9 p=0.546 & average visfatin plasma in fat healthy controls & non-fat healthy controls n=15 5.8 ± 3.9 v s. n =15, 4.6±4.9 p=0. 895.Twelve patients of DN were taking oral hypoglycaemic, eighteen were getting combined insulin & oral hypoglycaemic & their average visfatin plasma was not dissimilar as 9.0±3.4 vs. 9.4±6.8.

Table-II: Correlation between serum visfatin and anthropometric parameters.	
	Correlation coefficient (r^2)
Age	0.1800
BMI(kg/m2)	0.3130
Waist Perimeter (cm)	0.1480
Waist/hip (ratio)	0.1980

Data are r^2. *p <0.05



DISCUSSION:

In this research work, the amount of visfatin was not dissimilar in the fat and non-obese people. There was no association of visfatin with the circumference of the waist and ratio of waist to hip but we found clear association with body mass index. These findings were similar to the outcomes of Berndt, he also assessed the relation with body mass index [13]. Chan concluded in his research work on the patients with disease of polycystic ovary that there is no dissimilarity in the amounts of visfatin between fat & non obese patients but there was a connection with body mass index [14]. Choi & his companions examined the plasma visfatin in the fat females from Korea and compared them to the controls [15]. Zahorska & companions also examined high visfatin in fat people [16]. Pagano concluded the low amount of visfatin in fat patients compared to the non-fat subject of the study [17]. Jian and colleagues were unable to find any disparity between obese & normal [18].

Korner [19] concluded no relationship with measures of fatness & no disparity between visceral & subcutaneous fat of visfatin mRNA. We have no this kind of information from Pakistan; but a research work conducted in India by Sredharan to observe relationship of serum visfatin with fatness & diabetes [20].

Revello concluded the highest amount of the visfatin in the tissue of mouse brown adipose, liver & kidney, whereas medium amount of the visfatin in tissue of visceral adipose, spleen, body muscles, & both testes [6]. In other case study conducted of hens to evaluate the expression of mRNA visfatin in various types of tissues, it was shown that mRNA expression of visfatin as well as the expression of the protein was

very high in the other muscles as compared to the tissues of adipose [21]. Berndt have displayed a pure positive relationship between the amount of serum visfatin & expression of visfatin mRNA of visceral fat & fascinatingly a – relationship between level of visfatin & expression of the visfatin mRNA of subcutaneous fat [13].

Korner concluded no relationship between the amounts of visfatin diagnosed by 3 various immunoassays types [19]. If we reconsider the before inflammatory traits of visfatin, an increase in the population of DN is fully justifiable as low amount inflammation is recognized to survive in situation of nephropathy [22]. Korner [19] researched on the patients of newly detected high blood sugar & yet not initiated the treatment of diabetics. Lopez Bermejo [23] was unable to diagnose any disparity amount of the visfatin in to methods of the treatments. Pfutzner evaluated the impact of the treatment [24]. Kralisch concluded no impact in the production of visfatin in the cells of 3T3-L1 [25].

CONCLUSION:

Visceral fat is not the reason of the bulk production of the serum visfatin. It has some relation with the BMI. Research works in the future are needed to carry the study of large amount of samples.

REFERENCES:

1. Revollo JR, Grimm AA, Imai S. The regulation of nicotinamide adenine dinucleotide biosynthesis by Nampt/PBEF/visfatin in mammals. Curr Opin Gastroenterology 2007; 23:16-170.
2. Alexander R, Moschen. Visfatin, An Adipocytokine with Pro inflammatory and Immunomodulating Properties. J Immunology 2007; 178:1748-1758.
3. Berndt J, Kloting N, Kralisch S. Plasma Visfatin concentration and fat depot specific m RNA expression in humans. Diabetes 2005; 54:2911-2916.
4. Fukuhara A, Mastuda M, Nishizawa M, Segawa K, Tanaka M. Visfatin: A protein secreted by visceral fat that mimics the effects of insulin. Science 2005; 307:426-430.
5. Samal B, Sun Y, Stearns G, Xie C, Suggs S, McNiece I. Cloning and characterization of the cDNA encoding a novel human pre-B-cell colony-enhancing factor. Molecular Cellular Biology 1994; 14:1431–1437.
6. Wild S, Roglic G, Green A, Sieree R, King H. Global prevalence of diabetes: Estimates for the year 2000 and projections for 2030. Diabetes Care 2004; 27:1047-1053.
7. Lee G. End stage renal disease in the Asian-pacific reigon. Semin Nephrol 2003; 23:107-114.
8. Ernest adhegate. Structure, function and relation to diabetes mellitus and other dysfunctions.Current Medicinal Chemistry 2008;15:1851-1862.
9. Nishida C. Appropriate body mass index for Asian populations and its implications for policy and intervention strategies. Lancet 2004; 363:157-163.
10. Misra A, Vikram NK. Clinical and pathophysiological consequences of abdominal adiposity and abdominal adipose tissue depots. Nutrition 2003;19(5):457-466.
11. Misra A, Vikram NK. Waist circumference criteria for the diagnosis of abdominal obesity are not applicable uniformly to all populations and ethnic groups. Nutrition 2005;21(9):969-976.
12. Alberti KG, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Diabet Med 1998; 15:539-553.
13. Kershaw EE, Flier JS. Adipose tissue as an endocrine organ. J Clin Endocrinolo Metabolism 2004; 89:2548-2556.
14. Chan TF, Chen YL, Chen HH, Lee CH, Jong SB, Tsai EM, et al. Increased plasma visfatin concentrations in women with polycystic ovary syndrome. Fertil Steril 2007; 88:401-405.
15. Choi KM, Kim JH, Cho GJ, Baik SH, Park HS, Kim SM. Effect of exercise training on plasma visfatin and eotaxin levels. Eur J Endocrinol 2007; 157:437-442.
16. Zahorska MB, Olszanecka GM, Janowska J, Kocelak P, Semik GE, Holecki M, et al. Serum concentration of visfatin in obese women. Metabolism 2007; 56:1131-1134.
17. Pagano C, Pilon C, Olivieri M, Mason P, Fabris R, Serra R, et al. Reduced plasma visfatin/pre-B cell colony enhancing factor in obesity is not related to insulin resistance in humans. J Clin Endocrinol Metab 2006; 91:3165-3170.
18. Jian WX, Luo TH, Gu YY, Zhang HL, Zheng S, Dai M, et al. The visfatin gene is associated with glucose and lipid metabolism in a Chinese population. Diabet Med 2006; 23:967-973.
19. Korner A, Garten A, Bluher M, Tauscher R, Kratzsch J, Kiess W. Molecular charectaristics of serum visfatin and differential detection by immunoassays. J Clin Endocrinol Metab 2007; 92:4783-4791.
20. Sreedharn S, Kaliyaperumal V, Raj D, Viswanathan M. Serum visfatin in relation to visceral fat, obesity, and type 2 diabetes mellitus in Asian Indians. Metabolism 2007;56(4):565-570.
21. Susan M, Walker K, Olga M, Sreenivasa R,

Gilbert L. Is visfatin an Adipokine or Myokine? Evidence for greater visfatin expression in skeletal muscle than visceral fat in chickens. Endocrinology 2008;149(4):1543-1550.

22. Stenvinkel P. Inflammation in endstage renal diseaseA fire that burns within. Contrib Nephrol 2005; 149:1859-1899.
23. Bermejo AL, Chico-julia B, Fernandez BM, Recasens M, Esteve E. Serum visfatin visfatin increases with progressive beta cell deterioration. Diabetes 2006; 55:2871-2875.
24. Pfutzner A, Hanefeld M, Lubben G, Weber MM, Karagiannis E, Kohler C, et al.Visfatin: A putative biomarker for metabolic syndrome is not influenced by pioglitazone or simvastatin treatment in nondiabetic patients at cardiovascular risk result from PIOSTAT study. Horm Metab Res 2007; 39:764-768.
25. Kralisch S, Klein J, Lossner U, Bluher M, Paschke R, Stumvoll M, et al. Harmonal regulation of the novel adipocytokine visfatin in 3T3-L1 adipocytes. J Endocrinol 2005; 185:1-8.