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Psychoneurobics Healing: Diagnosis and Prognosis of Diabetic Patients with a Reference of Hba1c and Lipid Profile Test

Raymond Myles[1]* Dr. Chandra Shekhar Tiwari[2]

[1] Research Scholar, Yoga Samskrutham University, Florida, USA

Abstract – All the wellbeing related dangers because of the interminable sickness 'Diabetes Mellitus' can be restored by the act of 'Psychoneurobics'. Diabetes Mellitus (DM) is described by perpetual hyperglycemia with aggravations of Carbohydrate, Lipid and Protein digestion coming about because of deformities in insulin emission, insulin activity or both. Stoutness is an autonomous hazard factor for cardiovascular illness, including coronary supply route ailment and congestive heart disappointment, in the two people. Glycated hemoglobin (HbA1C) is a routinely utilized marker for long haul glycemic control. Hoisted HbA1c has been viewed as a free hazard factor for coronary illness (CHD) and stroke in subjects with or without diabetes.

Aim & Objectives: To assess the dimension of HbA1C and lipid profile in sort 2 diabetes mellitus patients. To discover the connection among's HbA1C and lipid profile parameters in sort 2 diabetic populace.

Methodology: This Cross sectional study was directed among sort 2 diabetic patients and control subjects and they were partitioned into three groups.Group 1-control subjects = 28, Group 2– Type 2 DM with great control = 28 and Group 3– Type 2 DM with poor control = 28.The serum sample was utilized for the estimation of aggregate Cholesterol, Triglycerides, HDL, LDL and VLDL. Fasting and postprandial (2 hour) glucose (FBS and PPBS) were assessed by Glucose Oxidase-Peroxidase (GOD-POD) enzymatic end point technique. HbA1C was evaluated by utilizing Ion trade chromatography (Crest A Coral clinical framework, USA). Pee examination was improved the situation benedicts test and proteinuria. Factual Analysis was finished by utilizing SPSS version 75.0.

Results: Our study demonstrated huge connection among's HbA1C and lipid profile parameters between the two gatherings (under 7% and over 7% of HbA1C). The results recommended the significance of glycemic control with the end goal to oversee dyslipidemia and hazard for cardiovascular turmoil in sort 2 diabetes.

Conclusion: This double biomarker-HbA1C, glycemic control and lipid profile can be utilized for screening of high hazard patients for early analysis of dyslipidemia along these lines the cardiovascular and fringe confusions can be averted by auspicious mediation of the infection

Keywords: DM, HbA1C, CHD and Dyslipidemia.

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INTRODUCTION

Diabetes Mellitus (DM) is portrayed by unending hyperglycemia with unsettling influences of Carbohydrate, Lipid and Protein digestion coming about because of deformities in insulin discharge, insulin activity or both (Ronald, et. al., 2005). Stoutness is turning into an overall pestilence. Weight is an autonomous hazard factor for cardiovascular malady, including coronary conduit infection and congestive heart disappointment, in the two men and women (Hubert, et. al., 1983). Scatters of lipid digestion are normal and noticeable in diabetes, and are vital hazard factors for the high recurrence of atheromatous inconveniences in the infection (Amos, et. al., 1997). Coronary illness in diabetic patients is related with various neurotic highlights including hypertension, hyperglycaemia and irregular glycation of proteins, dyslipidaemia, endothelial brokenness, microvascular ailment autonomic

neuropathy and imperfections in cardiovascular structure and function (Hammoud, et. al., 2000).

Diabetic dyslipidaemia incorporates different lipoprotein issue. The majority of this record centers around sort 2 diabetes; untreated sort 1 diabetes can cause extreme hypertriglyceridaemia, however lipid levels are almost ordinary in non-stout patients with all around controlled kind 1 diabetes (Caixas, et. al., 1997). A focal element of the metabolic disorder is insulin resistance, which results in hyperglycemia and hyperinsulinemia, and in the long run prompts the advancement of diabetes. Focal weight is the most essential inclining factor for insulin resistance (Shulman, 2000).Both corpulence and the metabolic disorder are related with high mortality for the most part identified with cardiovascular disease (Alle, et. al., 1999).Overweight, heftiness and metabolic disorder have as of late developed as solid autonomous hazard factors for perpetual kidney malady (CKD) and ESRD (Haffner, et. al., 1998). Patients with sort 2 diabetes regularly display an atherogenic lipid profile, which significantly builds their danger of CVD contrasted and individuals without diabetes (Goldstein, et. al., 1995).

There is a vast assortment of proof that GHB (glycatedhaemoglobin) identifies with incorporated going before glycemic control and the employments of GHB gives a target evaluation of long haul glucose control in a solitary index (Goldstein, 1999). The extent of the HbA1C as a hazard factor for the advancement of microangiopathy (UKPDS Group, 1998). Glycatedhemoglobin (HbA1C) is a routinely utilized marker for long haul glycemic control. As per its capacity as a pointer for the mean blood glucoselevel, HbA1c predicts the hazard for the improvement of confusions in diabeticpatients (Little, 2000). Grown-up hemoglobin is heterogeneous and notwithstanding unmodified hemoglobin (HbA0) there are minor parts that are all the more contrarily charged-called HbA1a, HbA1b and HbA1c in the request of their elution in particle trade chromatography (Allen, 1959). Rahbar appeared, in 1968, that these minor haemoglobins are raised in diabetes (Rahbar, 1968). Since these are post-translational alterations shaped by the moderate non-enzymatic connection of glucose to hemoglobin over the lifetime of the red cell, the level of hemoglobin glycation can be utilized as a record of normal glycaemia over the first weeks and months (Goldstein, 1995). Treatment objectives have been set based on the connection among HbA1C and inconveniences: the American Diabetes Association prescribes the objective of diabetes treatment ought to be a HbA1C 8%. As a guide to understanding the clinical significance of GHb, the connection between mean plasma glucose fixation and HbA1C amid the DCCT has as of late been set up: the adjustment in plasma glucose focus per 1% expansion in HbA1C was roughly 2 mmol/L (35mg/dL). The Diabetes Complications and Control Trial (DCCT) built up glycosylated hemoglobin (HbA1C) as the highest quality level of glycemic control, with levels £7% esteemed fitting for decreasing the danger of vascular complications (Rohlfing, et. al., 2002). Hoisted HbA1C has been viewed as a free hazard factor for coronary illness (CHD) and stroke in subjects with or without diabetes (Selvin, et. al., 2005). Thus, with all the above viewpoints, the study was embraced to correspond the glycatedHb and lipid profile in sort 2 diabetic populace.

MATERIALS & METHODS

In this cross sectional study, diabetic patients were assessed and isolated into gatherings. Gathering 1-control subjects = 28,Group 2 – Type 2 DM with great control = 28 and Group 3 – Type 2 DM with poor control = 28.Inclusion Criteria: Age 30-60years; Known Type II diabetic patients for - 7 years;Glycated hemoglobin (HbA1C) level under 7 and on way of life alterations, oral diabeticdrugs, insulin or blend of each of the three, related with known confusions of diabetesmellitus. eg. diabetic nephropathy, diabetic retinopathy, coronary illness, and diabetic neuropathy.Exclusion Criteria: Type 1 diabetes mellitus, known sort 2 diabetic for over 7 years, pregnancy, liver issue and irresistible infections, Hemolytic iron deficiency, familial dyslipidemia, and so forth were avoided from our study.Ethical freedom from Institutional moral board and research panel was obtained.Assays:- Venous blood about 5ml was drawn from every subject and it was isolated into two sections. One segment was gathered in an EDTA containing tube for HbA1c estimation and the other part in a non-anticoagulated plain cylinder for lipid profile.- After centrifugation, the serum sample was utilized for the estimation of aggregate Cholesterol, Triglycerides, HDL, LDL and VLDL.- Serum lipid profile was estimated by enzymatic child strategy in completely mechanized analyzer.- Indirect LDL-cholesterol and Non-HDL Cholesterol (Non HDL-C) were figured by Friedwald and Frederickson recipe.- Fasting and post prandial (2 hour) glucose (FBS and PPBS) were assessed by Glucose Oxidase-Peroxidase (GOD-POD) enzymatic end point method.HbA1C was evaluated by utilizing Ion trade chromatography (Crest A Coral clinicalsystem,USA).Urine examination was improved the situation benedicts test and proteinuria.

STATISTICAL ANALYSIS:

Statistical Analysis was finished by utilizing SPSS version 75.0.Pearson connection coefficient was figured to locate the straight connection among HbA1c and lipid profile. T-test, one way ANOVA and post HOC tests were done to analysis the parameters of FBS, PPBS, HbA1c, and lipid profile. $P<0.05$ was considered statistically noteworthy.

RESULTS

Table -1; Correlation between the control group and other parameters

Control	Pearson correlation	BSF	BSPP	TC	TGL	HDL	LDL
HbA1C	r value	0.057	0.063	0.242	0.150	0.033	-0.180
	p value	0.772	0.751	0.214	0.447	0.866	0.359

*. Correlation is significant at the 0.05 level (2-tailed).

Table -2 Correlation between the group-1(HbA1C-<7)

Case (<7)	Pearson correlation	BSF	BSPP	TC	TGL	HDL	LDL
HbA1C	r value	-0.107	-0.112	0.717*	-0.252	.162	0.773*
	p value	0.588	0.570	0.0001	0.195	0.410	0.0001

*. Correlation is significant at the 0.05 level (2-tailed).

Table -3 Correlation between the group-2(HbA1C>7) and other parameters .

Case (>7)	Pearson correlation	BSF	BSPP	TC	TGL	HDL	LDL
HbA1C	r value	0.287	0.500*	0.715*	0.418*	0.500*	0.699*
	p value	0.139	0.007	0.0001	0.027	0.007	0.0001

*. Correlation is significant at the 0.05 level (2-tailed).

Table – 4 T-Test (standard deviation between two groups-control and group-1)

	Control Mean±SD	Case (<7) Mean±SD	t value	p value
BSF	89.07±12.13	88.2857±11.34	0.250	0.803
BSPP	120.71±16.76	168.50±20.99	-9.412	0.0001*
HbA1C	5.41±0.63	5.70±0.66	-1.653	0.104
TC	161.75±12.52	195.79±41.08	-4.194	0.0001*
TGL	117.36±21.44	136.82±57.83	-1.670	0.101
HDL	64.57±13.51	62.50±12.97	0.585	0.561
LDL	104.43±17.41	119.75±32.29	-2.210	0.031*

(*highly significant)

Table – 5 T-Test (standard deviation between two groups-control and group-2)

	Control Mean±SD	Case (>7) Mean±SD	t value	p value
BSF	89.07±12.13	124.54±21.68	-7.553	0.0001*
BSPP	120.71±16.76	267.50±49.82	-14.777	0.0001*
HbA1C	5.41±.63	8.74±.98	-15.162	0.0001*
TC	161.75±12.52	231.11±87.76	-4.140	0.0001*
TGL	117.36±21.44	162.11±32.34	-6.102	0.0001*
HDL	64.57±13.51	66.68±14.23	-0.568	0.572
LDL	104.43±17.41	125.25±29.17	-3.243	0.002*

(*highly significant)

Table – 6 One way ANOVA

	Control Mean±SD	Case (<7) Mean±SD	Case (>7) Mean±SD	F value	p value
BSF	89.07±12.13	88.2857±11.34	124.54±21.68	48.289	0.0001*
BSPP	120.71±16.76	168.50±20.99	267.50±49.82	146.974	0.0001*
HbA1C	5.41±0.63	5.70±0.66	8.74±.98	160.281	0.0001*
TC	161.75±12.52	195.79±41.08	231.11±87.76	10.583	0.0001*
TGL	117.36±21.44	136.82±57.83	162.11±32.34	8.720	0.0001*
HDL	64.57±13.51	62.50±12.97	66.68±14.23	.663	0.518
LDL	104.43±17.41	119.75±32.29	125.25±29.17	4.452	0.015*

This one way Anova, revealed that except HDL all other parameters were significantly correlated.

DISCUSSION:

Regardless of different clinical, electrographic and biochemical qualities, there are subgroups of patients who advancement to extreme, hazardous nephropathy and CAD absent much manifestations and signs, particularly in patients with sort 2 DM. who every now and again experience the ill effects of MI with altogether expanded danger of complications (Negut, et. al., 2006).

In the present study, diabetic patients were isolated into two gatherings according to the HbA1C cut-off of 7.0%. Which incorporates 56 known diabetic patients, the connection among's HbA1C and lipid profile was evaluated. Gathering II (More than 7) communicated the huge increment in TC, LDL and TG in relationship with HbA1C however there is no critical connection among's HbA1C and HDL (Table-5 Table-6). In gathering I, I-e. HbA1C under 7, hypercholesterolemia-10 patients (35.71%), hypertriglyceridemie-4patients (14.28%) and hyperlipoproteinemia-expanded LDL-10patients (35.71%) (Table-2, Table-4).

In gathering II, i.e HbA1C more than 7, hypercholesterolemia-16 patients (57.14%), hypertriglyceridemia-16 patients (57.14%) and hyperlipoproteinemia-expanded LDL-14 patients (half) (Table-3, Table-5). There was an exceedingly critical relationship among's PPBS and HbA1C in gathering two (Table-3, Table-5). Type 2 DM is regularly connected with an unusual lipoprotein phenotype which is portrayed by expanded triglyceride and diminished HDL and amassing of little thick LDL particles (Gowtham, et. al., 2012). In our study additionally in one way ANOVA, fasting blood glucose is profoundly noteworthy in gathering II (over 7%) (Table-6).

Estimation of plasma glucose levels gives the analysis of diabetes, as per ADA guidelinesFBS-more than 126mg/dl, is indicative estimation of diabetes (American Diabetic Association, 2012). In our study likewise, T test for gathering II, over 7%, demonstrated FBS expanded altogether (Table-5). For long haul glycemic control, we utilized HbA1C as a standard marker and study demonstrated that HbA1C predicts the hazard for the advancement of entanglements in DM. Raised HbA1C is likewise considered as a free hazard factor for CVD in subjects with or without DM (Mahato, et. al., 2011). In our study likewise, aggregate II HbA1C was altogether corresponded with lipid profile parameters in both T test and one way ANOVA.

Khan H.A. et. al. [22] demonstrated the effect of glycaemic control on different lipid parameters in which seriousness of dyslipidemia increment in patients with higher HbA1C esteem. As hoisted HbA1C and dyslipidemia are free hazard elements of CVD, diabetic patients with raised HbA1C and dyslipidemia can be considered as a high hazard aggregate for CVD. Enhancing glycaemic control can generously lessen the danger of cardiovascular occasions in diabetics (Selvin, et. al., 2006). It has been assessed that diminishing the HbA1C level by 0.2% could bring down the mortality by 10% (KhawKt, et. al., 2001). One African study, comprising 401 sort 2 DM patients demonstrated that 35% had expanded aggregate cholesterol and one more England study discovered that 73% had expanded aggregate cholesterol, I-e. all are having in excess of 200

mg/dl. In our study likewise there was a huge relationship among's HbA1C and aggregate cholesterol in both the gatherings (Table-6).

In this manner, expanded HbA1C has been proposed as a marker of glycation of LDL and consequent inclination to atherosclerosis. The present study likewise exhibited that the seriousness of dyslipidemia increments with expanded HbA1C esteems. Thus, great glycemic control through enemy of diabetic treatment alongside way of life changes can decrease the danger of atherosclerosis and related complexities.

ROLE OF PSYCHONEUROBICS IN HEALING DIABETES:

The session incorporates viable experience of Psychoneurobics in controlling glucose in 2 hrs. Without medicine.(Blood sugar will be tried when Psychoneurobics)

Frequently our thinking mind discloses to us that, for a troublesome issue the solution ought to likewise be unpredictable and troublesome one.And we neglect a straightforward yet amazing solution and continue battling for rest of our life. This is the way our conviction framework works.

This 3 hrs. ground-breaking session is intended to end wrong conviction winning in the general public towards the arrangement of diabetes treatment and arm you with the ability to seek past it and recuperate yourself. This session will be the groundbreaking session as you may dispose of diabetes for all time with the handy show and every day practice at home for couple of minutes.

There is extremely just a single illness; the glitch of our cells. A cell glitch can be because of inadequacy of indispensable supplements lethality in the psyche and body, absence of appropriate rest and exercise. By tending to these above causes through nourishment and right perspective, all sickness even diabetes can be relieved and switched.

This session is likewise about the mindfulness that medications and pills are not made to fix us. They will likely calm our indications to improve one feel and deceive us trusting it worked. The medications basically kill the notice lights that our body is hysterically blazing.

Presently here comes the open door for you to recuperate comprehensively and carry on with a glad and sound life free from diabetes with the demonstrated procedure of Psychoneurobics in relieving diabetes. Give us a chance to join towards a much all-encompassing approach to annihilate diabetes from the planet.

The good reaction which we got regarding circulatory strain and glucose can be clarified as far as psychophysiological soundness. In physiology rationality implies entrainment, reverberation and synchronization, all of which causes amicability in various body frameworks bringing about expanded synchronization between the two parts of the autonomic framework. An essential physiological phenomenon called the 'unwinding reaction' (RR) has been appeared to deliver changes like reflection. It is a natural physiological reaction that is inverse of the pressure reaction.

HBA1C estimation was not done since it was monetarily not suitable for study members. Likewise, HbA1c results can be influenced by haemolysis and different conditions with expanded red cell turnover (decreased HbA1C) or conditions with diminished cell turnover e.g. press insufficiency (expanded HbA1C) or in some other perpetual illness states. Additionally, HbA1C results may shift with age and between various ethnic gatherings.

Research thinks about propose that rehearsing reflection consistently enables individuals to decrease their bodies' reactions to worry by bringing down circulatory strain, moderating pulse, lessening oxygen allow, and changing the mind waves to a more loosened up state. Directing the pressure reaction is additionally prone to bring down blood glucose levels. Ordinary reflection constructs aptitudes in reacting carefully, implying that you will figure out how to set aside your opportunity to thoroughly consider your activities previously acting. As you practice contemplation routinely, you will start to see that the choices you make are more keen. The probability of snatching for chips or dessert moves toward becoming lower, and the likelihood of going for a walk increments. At the end of the day, your capacity to deal with pressure will be reinforced by great choices and you will be equipped for unwinding without taking part in negative practices.

As an advisor who works principally with individuals with diabetes, I have discovered that the individuals who have a more profound comprehension of themselves and can adapt well to unpleasant life occasions essentially live better with diabetes, both as far as diabetes control and general quality of life. Diabetes self-care and contemplation are the two practices that require control and responsibility. Be that as it may, the settlements are huge for rehearsing them together. Decreased pressure, better diabetes control, bring down circulatory strain, bring down blood glucose levels, more prominent mindfulness, better connections, enhanced concentration in different parts of your life, and less dejection and uneasiness are on the whole potential advantages of incorporating contemplation in your everyday practice. Making contemplation a customary piece of your diabetes management will improve both your demeanor and control.

CONCLUSION

Our study demonstrated critical connection among's HbA1C and lipid profile parameters between the two gatherings (under 7% and over 7% of HbA1C.) The results proposed the significance of glycemic control with the end goal to oversee dyslipidemia and hazard for cardiovascular turmoil in sort 2 diabetes. HbA1C has the capacity of anticipating serum lipoprotein in both diabetic and non-diabetic populace independent of the sexual orientation. The DCCT additionally settled HbA1C as the best quality level of glycemic control. This double biomarker-HbA1C , glycemic control and also lipid profile marker can be utilized for screening of high hazard patients for early determination of dyslipidemia and by this, we can avert and put off the cardiovascular and fringe intricacies by convenient mediation of the disease.

REFERENCES

[1] C. Ronald Kahn, George L. King, et al. (2005). Joslins diabetes mellitus -14th edition (New York, Lippincott Williams & wilkins, pp. 331-338.

[2] Hubert H.B., Feinleib M., McNamara P.M. et. al. (1983). Obesity as an independent risk factor for cardiovascular disease. Circulation, 67, pp. 968-977.

[3] Amos A.F., McCarty D.J., Zimmet P. (1997). The rising global burden of diabetes and its complications: estimates and projections to the year 2010. DiabetMed, 14 (Suppl.5), pp. S1-S85.

[4] Hammoud T., Tanguay J.F., Bourassa M.G. (2000). Management of coronary artery disease: therapeutic options in patients with diabetes. J Am CollCardiol, 36, pp. 355-65.

[5] Caixas A., Ordonez-Lianos J., de Leiva A. et. al. (1997). Optimization of glycemic control by insulin therapy decreases the proportion of small dense LDL particles in diabetic patients. Diabetes,46, pp. 1207-13.

[6] Shulman G.I. (2000). Cellular mechanisms of insulin resistance. JClin Invest, 106, pp. 171–176.

[7] Alle E.E., Thun M.J., Petrelli J.M., Rodriguez C., Heath C.W. (1999). Jr: Body-mass index and mortality in a prospective cohort of US adults. N Engl J Med, 341, pp. 1097–1105.

[8] Haffner S.M., Lehto S., Ronnemaa T., Pyorala K., Laakso M. (1998). Mortality from coronary heart disease in subjects with type 2 diabetes and in nondiabetic subjects with and without prior myocardial infarction. N Engl J Med, 339, pp. 229-234.

[9] Goldstein D.E., Little R.R., Lorenz R.A. et. al. (1995). Tests of glycemia in diabetes. Diabetes care,18, pp. 896-909.

[10] Goldstein D.E. (1999). Glycohaemoglobin testing in patients with diabetes. Diabet technoltherapeut, 1, pp. 421-423.

[11] UKPDS Group (1998). Intensive blood glucose control with sulphonylureas/insulin compared with conventional treatment in IDDM.(UKPDS33), 352, pp. 837-853.

[12] Little R.R. (2000). Recent progress in glycohaemoglobin(HbA1C) testing. Diabetes care, 23, pp. 265-266.

[13] Allen D.W., Schroeder W.A., Balog J. (1959). Obsevations on the chromatographic heterogenecity of normal adult and fetal human hemoglobin. J Am chem Soc, 80, pp. 1628-34.

[14] Rahbar. S. (1968). An Abnormal hemoglobin in red cells of diabetes. Clin Chim Acta,22, pp. 296-8.

[15] Goldstein D.E., Little R.R., Lorenz R.A. et. al. (1995). Tests of glycemia in diabetes. Diabetes Care 18, pp. 896-909.

[16] Rohlfing C.L., Wiedmeyer H.M., Little R.R., England J.D., Tennill A., Goldstein D.E. (2002). Defining the relationship between plasma glucose and HbA1c: analysis of glucose profiles and HbA1c in the Diabetes Control and Complications trial. Diabetes Care,25, pp. 275–278.

[17] Selvin E., Coresh J., Golden S.H., Brancati F.L., Folsom A.R., Steffes M.W. (2005). Glycemic control and coronary heart disease risk in persons with and without diabetes: the atherosclerosis risk in communities study. Arch Intern Med 165, pp. 1910–1916.

[18] Negut C., Ramondo A., Avogaro A., et. al. (2006). Detection of CAD in asymptomatic patients type 2 DM. American journal of cardiology; 47, pp. 65-71.

[19] Gowtham K., Gandhe M.B., Salwe K.J., Srinivasan A.R. (2012). HDL/LDL Ratio as a risk factor in type 2 diabetes mellitus; Advance Laboratory Medicine International;2(1), pp. 9-18.

[20] American diabetic association (2012). diagnosis and classification of diabetes mellitus: diabetes care;35(1), pp. 64-71.

[21] Ram Vinod Mahato, Prajwal Gyawali, Pramod Raut (2011). Associated between glycemic control and serum lipid profile in type 2 diabetic patients; Glycated hemoglobin as a dual biomarker. Biomedical research 22(3), pp. 375-380.

[22] Khan H.A., Sobki S.H., Khan S.A. (2007). Association between glycaemic control and serum lipid profile in type 2 diabetic patients: HbA1C predicts dyslipidaemia. ClinExp Med 7, pp. 24-29.

[23] Selvin E., Wattanakit K., Steffes M.W., Coresh J., Sharrett A.R. (2006). HbA1C and peripheral arterial disease in diabetes: the Atherosclerosis Risk in Communities study. Diabetes Care 29, pp. 877-882.

[24] KhawKt, Wareham N., Luben R., Bingham S., Oakes S., Welch A., et. al. (2001). Glycated haemoglobin diabetes, and mortality in men in Norfolk cohort of European Pro-spective investigation of cancer and nutrition (EPIC-Norfolk). Br Med J 322, pp. 15-18.

Corresponding Author

Raymond Myles*

Research Scholar, Yoga Samskrutham University, Florida, USA