International Journal of Research
Available at https://edupediapublications.org/journals
p-ISSN: 2348-6848
e-ISSN: 2348-795X
Volume 03 Issue 10
June 2016

Assessment of Anthropometric measurement, metabolic parameters and Depression level of Type 2 Diabetic Patients

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Abstract

Diabetes mellitus and its complications constitute a major health problem in modern society Actual number of the people suffering from diabetes is increasing because of substantial change in life style. The present study was carried out on 25 newly detected type 2 Diabetic patients and 25 Non-Diabetics. Purposive sampling was used in the study. Beck Depression Inventory (BDI II) questionnaire was used to analyze the level of Depression of the patients. The pre- tested questionnaire was used to assess their nutritional status. Poor physical health may cause high blood sugar levels and disrupt the circulation of blood and Diet plays an important role in maintenance of health. So Clinical and Nutritional intervention is very important for Patients health.

Introduction

Diabetes mellitus and its complications constitute a major health problem in modern society Actual number of the people suffering from diabetes is increasing because of substantial change in life style. The prevalence rate of diabetes has also been increasing in the past few years. Presently the prevalence rate of diabetes in Varanasi is 63% generally (as per hospital based data).

Traditionally, BMI has been used to stratify individuals into normal weight, under weight or obese, with risk of metabolic diseases increasing at either end of the spectrum. According to the system of classification used by National Institute of Health , accepted normal BMI(kg/m^2) range for men and women is from 18.5 to 24.9[(1)].Values beyond this range are considered to be predictors of greater relative health risk[(2)].

World Health Organization (WHO) has published standards for overweight and obesity in adult population based on BMI (kg/m^2) [(3)] and has categorized BMI for identifying health risk, it has been shown that excess abdominal fat distribution contributes additional risk for cardiovascular disease beyond the effect of BMI[(4)]. Diabetes is also linked to mental illness, Depression, Anxiety and stress.

Mental illnesses can alter hormonal balances, sleep cycles and immune system function. These symptoms create an increased vulnerability to a range of physical health problems. It is already established that clinical depression already established that clinical depression and subclinical depressive symptoms are associated with an increased risk of type 2 Diabetes. Although depressive symptoms are associated with diabetes, producing health behaviors (i. e, increased caloric intake, physical inactivity and smoking), obesity and inflammatory markers, adjustment for these factors only partially explains type 2 Diabetes.

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Methodology

The present study was carried out on 25 newly detected type 2 Diabetic patients and 25 Non-Diabetics, attending Out Patient Department (OPD) of Endocrinology Department of Sir Sunderlal Hospital Varanasi. Samples were selected purposively. Biochemical values were recorded from their blood reports and informed consent was duly taken from each subject under study, and the entire procedure was done as per the Institutional ethical permission. Beck Depression Inventory (BDI II) questionnaire was used to analyze the level of Depression of the patients. The pre- tested questionnaire was used to assess their nutritional status.

Result and Discussion

Table no.1

BMI Level	Case N= 25		Control N = 25		Total N= 50	
	No	%	No	%	No	%
<18.50	-	-	-	-	-	-
18.50 – 22.99	5	20.0	6	24.0	11	22.0
23.00 – 24.99	6	24.0	11	44.0	17	34.0
25.00 – 29.99	11	44.0	7	28.0	18	36.0
≥ 30	3	12.0	1	4.0	4	8.0
$\chi^2 = 3.45$, df =3, P> 0.05						

BMI level of case and control group were compared and it was found that maximum 44.0% of case group were in Pre- Obese category where as maximum percent of control group were belongs to Overweight category.

Table no.2

Clinical and Metabolic profile	Case	Control	t	Df	P
	Mean ± SD	mean ± SD			
B.P. (Systolic)	140.64 ± 13.22	124.32 ± 4.75	5.81	48	<0.001
B.P.(Diastolic)	84.68 ± 6.50	81.60 ± 3.96	2.03	48	<0.05
Fasting sugar	207.38 ± 76.08	96.48 ± 8.08	7.25	48	<0.001
Post Parandial sugar	310.33 ± 105.57	110.04 ± 6.77	9.47	48	<0.001
HbA1c	11.28 ± 1.85	5.50 ± 0.31	15.42	48	<0.001

According to Table No. 1 it is evident that Blood Pressure, Fasting Sugar, Post Parandial Sugar and HbA1c level is higher in Case group compared to Control group. It is also shown that there were

significant correlation between case and control group, which indicates the need for Nutritional and Clinical Intervention and its importance. Mogra R. *et al* (2010) had same finding.[5]

Table no.3

Depression Level	Case N= 25		Control N = 25		Total N= 50	
	No	%	No	%	No	%
Minimal	3	12.0	15	60.0	18	36.0
Mild	5	20.0	3	12.0	8	16.0
Moderate	4	16.0	2	8.0	6	12.0
Severe	13	52.0	5	20.0	18	36.0
Mean	36.88 ± 20.36		15.60 ± 14.45		26.24 ± 20.51	
t= 4.26, df = 48, p<0.001						

Level of depression as per BDI II report indicated that number of patients were significantly high among Case group in severe Depression. Mean value of Depression level was 36.88 ± 20.36, which shows its severity.

According to Onyik CU. *et al* (1999), Depression is overlapping psychosocial and pathophysiological etiologies, and an association between the two conditions has been seen in many population – based studies.[6]

Conclusion

Comparative to control group, in case group Anthropometric measurement, clinical, metabolic and psychological level were higher. So, it is clear that to control all above parameters it is very important to give clinical and Nutritional Intervention frequently and observed its impact on patient's health.

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