FREQUENCY OF DEPRESSION IN PATIENTS WITH DIABETES MELLITUS TYPE II FROM DISTRICT HEADQUARTER HOSPITAL, PAKISTAN

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ABSTRACT

OBJECTIVE
The objective of study is to assess the severity of Depression in patients with Diabetes Mellitus (DM) Type II, and to compare the severity of Depression among those using insulin versus oral hypoglycemic medications.

DESIGN
Cross sectional study

SETTING
Outpatient department of District Headquarters Hospital, Faisalabad

METHODS
70 patients (Males: 57% and Females: 43%) with diagnosis of Diabetes Mellitus type II were recruited. 50 % of the patients were taking insulin and the other 50% oral hypoglycemic agents as part of their treatment regimen. Patients were interviewed according to ICD-10 criteria of Depression to establish the diagnosis as well as severity of Depression.

RESULTS
According to ICD-10 criteria, Depression was present among 53% of the patients. The severity of Depression was: mild in 20% of the surveyed population, moderate in 23% and severe in 10% of subjects. Among the 35 patients on insulin, 31% had Depression with severity of mild (9%), moderate (11%) and severe (11%) intensity. Among 35 patients on oral hypoglycemic medications, 74% were depressed with severity of mild (31%), moderate (34%), and severe (9%) intensity.

CONCLUSIONS
The frequency of depression is high among patients with Diabetes Mellitus type II. Patients with DM type II, who were on oral hypoglycemic medications, found to be at a higher risk of developing Depression as compared to patients on insulin (P value<.001).

KEYWORDS
Diabetes Mellitus Type II, depression, insulin, Oral hypoglycemic medications.

INTRODUCTION

There is growing evidence regarding the bi-directional adverse interaction between Diabetes Mellitus (DM) and Depression. The annual health care expenditures have risen to approximately US $192,000,000 associated with comorbid DM and Depression. Depression is associated with a significantly increased risk of death from all causes, beyond that due to having either Diabetes or Depression alone.[1]

Depression is known to affect the life style, glycemic level monitoring and quality of life of patients with DM.[16] The adverse physiological effects of Depression on glucose metabolism may increase insulin resistance, reduce glucose uptake, and increases risk for developing type II DM. Conversely, poor metabolic control and functional impairment due to increasing complications may cause or worsen Depression and lessen response to antidepressant treatment.

In recent years there has been a growing interest in patients with Depression, which is considered as a novel risk factor for the development of type II Diabetes. Anxiety and Depression usually occur in individuals who suffer from chronic diseases, such as Diabetes Mellitus (DM). The prevalence of any type of Depression is significantly higher in patients with type II Diabetes than in those without Diabetes, i.e. 17.6% versus 9.8% respectively. The prevalence of psychiatric co morbidity (like Anxiety and Depression) among insulin-dependent patients is 18%. Research data suggests that depression is much more prevalent in individual with type II Diabetes who used insulin than in individuals with type 2 Diabetes who do not use insulin.[2] A study conducted in Germany showed that the number of DM type II patients having clinical Depression was higher on insulin treatment (49%) as compared with oral medications (20.8%).[3]

The literature supports the utility for both psychosocial and pharmacological interventions for Depression in patients with Diabetes. Clinical intervention with diabetic patients with Depression may be strengthened by an integrative approach that simultaneously treats Depression and DM. Accumulating evidence suggests that sub-clinical presentations of Depression and distress can be associated with worsening of treatment outcomes; therefore, intervention that target symptoms of Depression that fall short of a formal diagnosis can be very helpful.

The rationale of the current study is to assess the frequency and severity of Depression in the patients with DM type II, and to

compare the severity of depression among patients taking insulin therapy vs. oral hypoglycemic medications. The association found between severity of depression and the management of type II DM (insulin vs. oral hypoglycemic medications) would warrant clinicians to be cognizant to screen for depressive symptoms at an earlier stage. Management of comorbid Depression with type II DM in initial phase may prevent the morbidity and mortality related to both conditions.

METHODS

Approval of Hospital Ethics Committee was obtained. Patients with DM type II from the outpatient clinic of District Head Quarters Hospital (DHQ), Faisalabad were enrolled after careful screening. Informed consent was obtained from the patients. Detailed history, complete physical examination and all available medical and treatment history were reviewed. To investigate fasting and random blood sugar levels, samples (2cc blood at fasting and 2 hours post-prandial) were taken. Other investigations that were ordered, included serum urea, creatinine and a urine detailed report. EKG was performed on all patients to exclude ischemic heart disease. Neuropathy was excluded on physical examination. Eye examination for retinopathy was done with an ophthalmoscope. Patients were interviewed using the ICD-10 diagnostic criteria of Depression. The cut value of ICD-10 was used to assess the severity of Depression.

Patients with fasting plasma glucose>7.0 mmol /l (126mg/dl), diabetes diagnosed for more than 3 months, age between 30-55 years, using oral hypoglycemic drugs, those using insulin at least for 6 months were included in the study. Those with nephropathy as assessed by serum creatinine and urea levels, urinary proteins and ultrasound abdomen, neuropathy on clinical examination, retinopathy, ischemic heart disease on electrocardiography and diabetic ketoacidosis were excluded. Those patients who were on dialysis were also excluded.

DATA ANALYSIS

All the data entered was analyzed using SPSS version 13.0. Descriptive statistics were calculated for all variables. Mean and Standard deviation was calculated for qualitative variables like gender, marital status, socioeconomic status and presence of depression. Chi square test was used to determine difference in the level of Depression in patients with DM Type II, managed on either insulin and oral hypoglycemic medications. A p-value < 0.05 was considered significant.

RESULTS

There were 70 patients, with DM type II, recruited in the study; 35 of those patients were on insulin, and the other 35 were managed on oral hypoglycemic medications. There were 14 (20 %) patients in the age range of 30-35 years, 31 (44.3%) patients in the age range of 36-40 years, 12 (17.2%) patients in the age range of 41-45 years, and 13 (18.6%) patient in the age range of 46-55 years. Out of 70 patients included in the study, 50 (71.4%) belonged to a lower socio-economic status and 20 (28.6%) belonged to middle socio-economic status. 63.3% were females and 45% were males. 56% were married on contrary to 38% unmarried.

Amongst the 70 patients with Diabetes, 14(20%) showed mild depression, 16 (22.9%) patients showed moderated depression, while 7(10%) showed severe level of depression. (Figure 1) Among the patients on insulin, 31% showed depression, whereas 74% of the patients on oral hypoglycemic showed evidence of depression. Out of 35 patients on insulin, 31% had Depression with the following severity: mild depression in 9%, moderate in 11% and severe in 11%. Among the 35 patients on oral hypoglycemic medications, 74% were depressed with the following severity: mild symptoms in 31%, moderate in 34%, and severe in 9%. (Figure 2, 3)

Figure1:

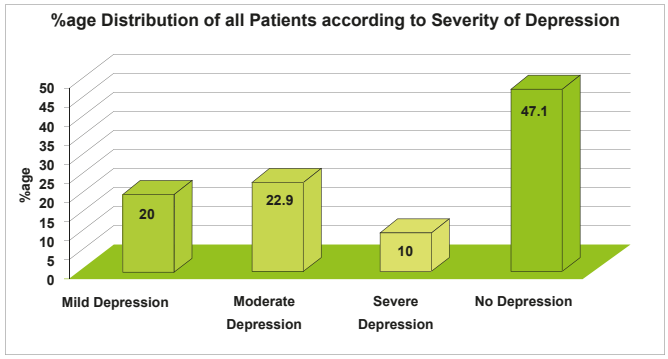


Figure2:

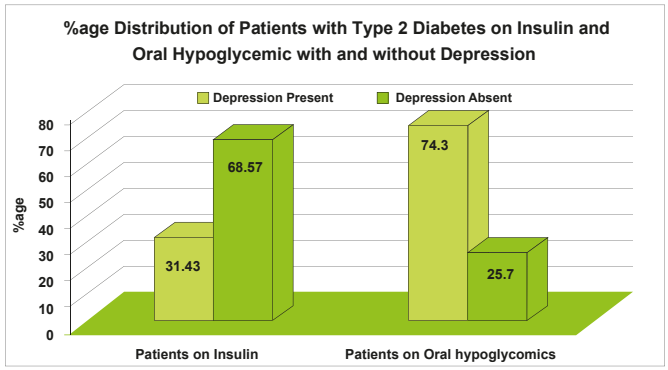
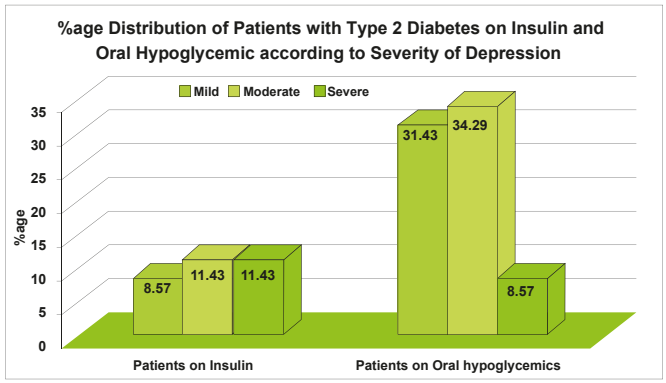


Figure3:



DISCUSSION

In this prospective clinical case series, 70 diabetic patients-

were studied. The results show that a majority of those interviewed were female, between the ages of 30-55 years, married and were in a lower socioeconomic status.

In about half of the sample, the Depression severity ranged from mild to moderate to severe. Mansour et al, in his study conducted in Iraq showed increased depression in female patients with DM and those belonging to lower socioeconomic strata.[4,5] A study conducted in Karachi on 592 patientswith Diabetes Mellitus type II, showed mild to moderate Depression in females belonging to lower socioeconomical class. A recent meta-analysis of 9 studies estimated that Depression increases the risk of subsequent type II DM by about 37%. This estimate is supported by two more recent longitudinal studies.[2,6] Our study corroborates these findings.

Several studies have shown that mild to moderate level of Depression is more prevalent in diabetics than in the general population. Roupa et al, in his research also showed high rates of Depression in patients with DM.[5] Other studies conducted in China, Iraq, Pakistan and Austria showed similar result.[1,4,7,10] The possible rationale may be due to chronic nature of illness, life long treatment, restricted diet, changes in life style and fear of developing complications.[1- 9]

Our study results show that the risk of developing depressive illness in patients on Insulin was less as compared to those on hypoglycemic medications. This is in contrast to prior research conducted among patients with DM, where patients taking insulin therapy showed higher levels of depression as compared to those on oral hypoglycemic medications. The possible reasons we can postulate for these findings may include uncontrolled DM on oral medication, given the health resources to lower socioeconomical class. This may further increases the risk of complications related to chronic illness. The contextual factors in terms of marital stressors, child fostering, financial constraints may increases the risk of both Depression and DM in this class. It may be in conjunction as evident in our study.

In further exploration of mediating factors, females were more prevalent among oral hypoglycemic group, since females in our study had a higher prevalence of Depression, this may explain the higher rates of Depression in this group.

This study was performed at a single center and was limited to a specific geographical area.Thus the results may not be generalized to the population. Multi-center studies on broader scale are needed to confirm and replicate these results. Only two groups of diabetic patients were included without comparison to the normal population; a further study may be conceived in this area where these groups are to be compared with a non-Diabetic group. This can further explore those patients who develop complications secondary to Diabetes Mellitus. Another limitation of our study is our inability to perform HbA1C on all selected patients to see which group had a better glycemic control. This would have provided the basis to estimate the interplay between Depression and poor glycemic control.

CONCLUSIONS

Depression is high in patients with DM type II. It increases among those who are on oral hypoglycemic medications versus insulin therapy alone. Middle age, female gender, and a low socioeconomic status are possible risk factors for Depression identified in this study. This information should be used to educate doctors treating patients with DM. Physicians need to be cognizant in picking up early signs of Depression in the population at risk and manage timely to reduce the complications related to these both chronic illnesses. On contrary, effective management of depression will also improve the quality of life in individuals with Diabetes Mellitus.

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