

Prevalence of Depression in Diabetic

Dr. Hardeep Singh¹, Dr. Sainath², Dr. Sandeep Rai³

MGM Medical College, Kamothe, Navi Mumbai, Maharashtra-410210, India

Correspondence to: Dr. Hardeep Singh (dr.singhardeep@gmail.com)

ABSTRACT:

“Diabetes” is a chronic serious metabolic disease common worldwide. Chronic medical problems like Diabetes increase the prevalence of depression.. The present study was done to study the relationship of depression with the degree of metabolic control of diabetes and also to study the relationship of Depression with various complications of Diabetes. Total 300 Type II diabetic patients (as per ADA guidelines) attending the diabetic OPD at MGM Hospital for the duration period of 1.5 years from November 2011 to April 2013 fulfilling the inclusion criteria were taken in the study. The demographic profile of all the patients was recorded.

Then the subjects were asked to fill the Becks Depression Inventory, a self-reported questionnaire and then they were classified according to the severity depression depending on their scores on this questionnaire. The present study shows a significant prevalence of Depression in Diabetes. Our study also states a direct relation between glycemic control and improvement in BDI score thus providing that the improvement in glycemic control improves depressive symptoms.

INTRODUCTION:

“Diabetes” is a chronic serious metabolic disease common worldwide. Diabetes mellitus is a heterogeneous metabolic disease in which hyperglycaemia is a central feature. Insufficient insulin action on the peripheral target tissues of body gives rise to abnormalities of carbohydrate, protein and fat metabolism. This insufficient insulin action in peripheral tissues occurs as a result of insufficient insulin secretion (type1), diminished tissue response to insulin (type 2), or as a combination of both. The prevalence is increasing rapidly and the number of affected people is expected to be around 366 million by the year 2030.⁽¹⁾

DEPRESSION:

Depression is a major health problem seen primary care setting. Depression is the leading cause of disability and premature death among people aged 18 to 44 years, and it is expected to be the second leading cause of disability for people of all ages by 2020. Chronic medical problems like Diabetes increase the prevalence of depression. Diabetes for instance was found to double the incidence of having depression therefore recognition of depression is important to improve diabetic care and cost effective treatment.^(2,3) Studies have found that depressive symptom severity that was associated with poorer adherence to diet and medication, leads to more functional impairment and higher health cost

According to the World Health Organization (WHO), depression is responsible for the greatest proportion of burden associated with non-fatal health outcomes and account for approximately 12% of total years lived with disability. In 2000, it was estimated that depressive disorders were higher in women (4930 per 100,000) than men (3199 per 100,000) and that, globally, depressive disorders were the fourth leading cause of disease burden in women and seventh leading cause in men.

In a meta-analysis of 42 published studies that included 21,351 adults and found that the prevalence of major depression in people with diabetes was 11% and the prevalence of clinically relevant depression was 31%.⁽⁴⁾ Zahid and colleagues found a more modest depression prevalence (14.7%) among patients with diabetes in a rural area in Pakistan.

There is substantial evidence that co-morbid depression among individuals with diabetes is associated with poor diabetes outcomes such as glycemic control. Lustman and colleagues completed a meta-analysis of 24 studies and found that depression was significantly associated with poor glycemic control in individuals with type 1 and type 2 diabetes.⁽⁵⁾

Gonzalez and colleagues found that after controlling for relevant covariates, patients with major depression reported significantly fewer days of adherence to diet, exercise regimens. The present study was done to study the relationship of

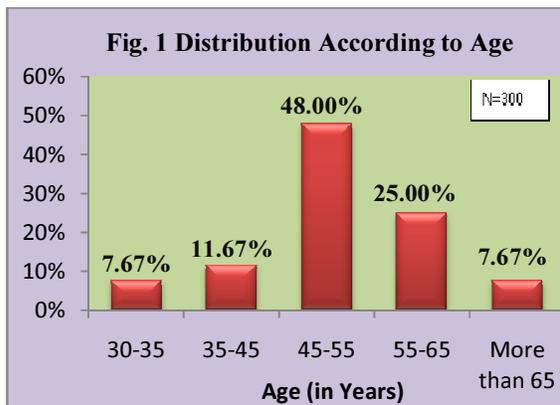
depression with the degree of metabolic control of diabetes and also to study the relationship of Depression with various complications of Diabetes. **Materials and Methods :** Total 300 Type II diabetic patients (as per ADA guidelines) attending the diabetic OPD at MGM Hospital for the duration period of 1.5 years from November 2011 to April 2013 fulfilling the inclusion criteria were taken in the study . The demographic profile of all the patients was recorded under the following headings - age, sex, marital status, level of education, occupation, annual family income, total number of family members, smoking, alcohol, duration of diabetes. Then the subjects who voluntarily gave their informed consent were asked to fill the Becks Depression Inventory, a self-reported questionnaire and then they were classified as suffering from no depression, mild depression, moderate depression or severe depression depending on their scores on this questionnaire. Biochemical analysis included estimation of Fasting Blood Sugar, Post Prandial Blood Sugar, HbA1C, Serum Creatinine & Urine for microalbuminuria (Immuno-turbidimetric method). A follow up study was done for all the patients at the interval of 3 months, 6 months which included analyses of biochemical parameters. All subjects and healthy controls were asked to fill up the BDI questionnaire on their subsequent follow up visits.

Statistical Analysis:

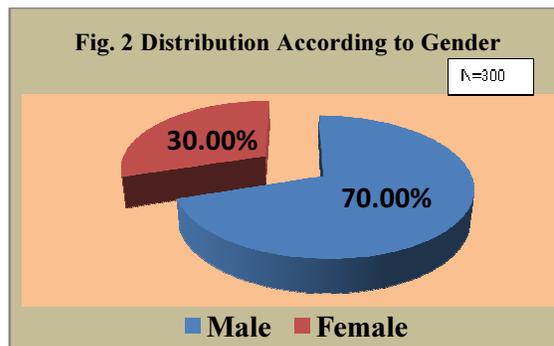
Data is presented as mean + SD. Student t test was used for comparison of demographic and biochemical data. Statistical package for social science (ver17) was used for calculation. P values, if <0.05 were considered significant.

RESULTS:

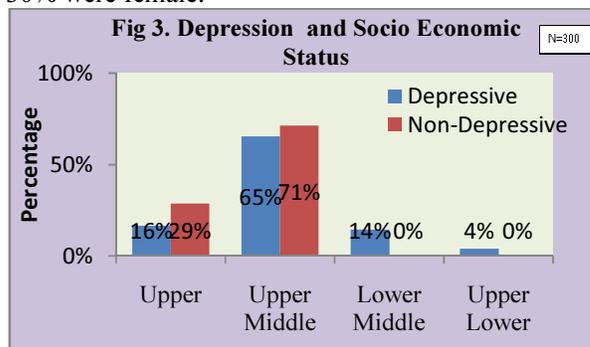
1. Study states that 29.33% of diabetic suffer from moderate depression and 3.67% suffer from severe depression.



2. Out of 300 subjects studied, 48% were between age group 45-55 years.

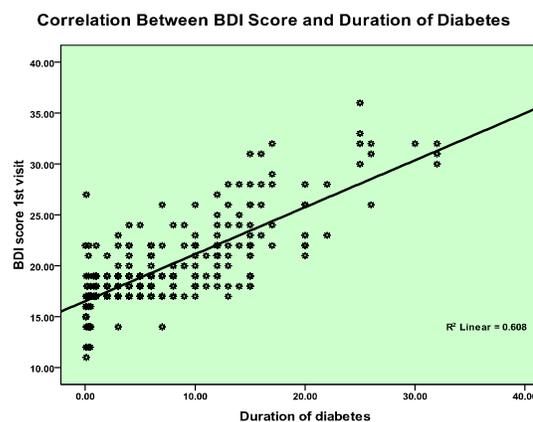


3. Out of 300 study subjects, 70% were male and 30% were female.



4. Out of total subjects suffering from depression, 16% belonged to upper class, 65% belonged to the upper middle class, 14% belonged to the lower middle class and 4% belonged to lower socioeconomic class.

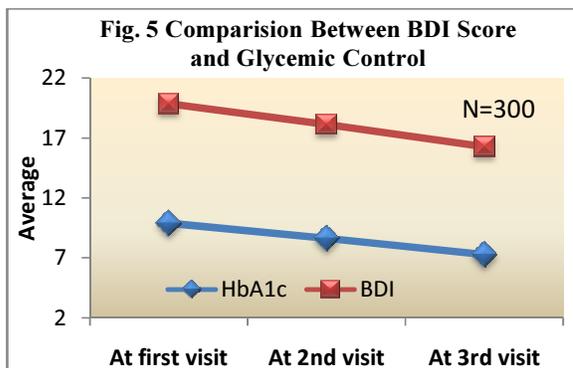
5. There is high positive correlation between BDI Score and Duration of Diabetes (r=0.779, p <0.05). The coefficient of determination was found to be 0.608, which means, around 60.8% variation in BDI Score is explained by duration.



6. Out of the total subjects who showed evidences of diabetic nephropathy, 2.22% suffered from borderline depression, 31.82% suffered from

moderate depression and 90.1% suffered from severe depression.

7. This study states a direct relation between glycemic control and depression. Thus proving that the improvement in glycemic control improves depressive symptoms.



DISCUSSION:

Diabetes has reached epidemic proportions worldwide. The World Health Organization (WHO) has commented there is 'an apparent epidemic of diabetes which is strongly related to lifestyle and economic change'. The relationship between diabetes mellitus and depression had been the subject of many researches and meta-analysis.. The most recent meta-analysis found that type 2 diabetes is associated with a 60% increased risk for having concomitant depression or depressive symptoms and with a 17.6% prevalence of clinically relevant depression among type 2 diabetes subjects, our study showed a prevalence rate of 33% of Depression in patients of type 2 diabetes.

In one of the largest studies in India, Chennai Urban Rural Epidemiology Study (CURES), involving 26,001 subjects randomly recruited from 46 of the 155 corporation wards of Chennai , V Mohan et al, concluded that the overall prevalence of depression in diabetic patients was 15.1%.⁽⁶⁾

Like many other studies in the past our study also states a higher prevalence of depression among female type II diabetics as compared to their male counterparts. A number of similar single centre studies in Iran, have reported a prevalence of depressive disorder of 53% (75% women and 25% men) in type II diabetics.⁽⁷⁾ Similarly Depression was observed in 53.3% of males and 57.7% of females in Kashan study. Richardson and colleagues in their 4 years long study found a longitudinal relationship between depression and persistently high HbA1c levels.⁽⁸⁾ Our study also showed a linear relationship between depression

and poor glycemic control as in other large studies as stated above.

The prevalence of depression is higher in patients with diabetes who have long-term complications and compared with patients with diabetes without complications and also the patients with co-existing depression and diabetes have been shown to have higher likelihood of developing diabetes related complications.

Out of the total study group of 300 subjects 14% showed evidences of diabetic nephropathy, 26.7% showed evidences of diabetic retinopathy and 18.67% showed evidences of diabetic neuropathy, however when complications were seen in depressive group , 38% showed evidences of diabetic nephropathy, 67% showed evidences of diabetic retinopathy and 47% showed evidences of diabetic neuropathy.

CONCLUSION:

The present study shows a significant prevalence of Depression in Diabetes. This study also states a direct relation between glycemic control and improvement in BDI score thus providing that the improvement in glycemic control improves depressive symptoms.

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