Prevalence of Depression among Type 2 Diabetes Mellitus Patients of a Tertiary Care Hospital

M. Ardhanaari[1], Prashant Jain[2], N. Ashweeja[3], G. Srinivasagopalan[4], N. R.Nappinnai[5]

[1]Assistant Professor, Department of Psychiatry, Meenakshi Medical College and Research Institute, Tamil Nadu.
[2]Junior Resident, Department of Psychiatry, Meenakshi Medical College and Research Institute, Tamil Nadu.
[3]Junior Resident, Department of Psychiatry, Meenakshi Medical College and Research Institute, Tamil Nadu.
[4]Emiritus Professor, Department of Psychiatry, Meenakshi Medical College and Research Institute, Tamil Nadu.
[5]Assistant Professor, Department of Psychiatry, Meenakshi Medical College and Research Institute, Tamil Nadu.

ABSTRACT

BACKGROUND

Depression is one of the most under diagnosed or misdiagnosed comorbid psychiatric disorder found among chronic diabetes mellitus patients. Presence of depression significantly alters the life style and also worsens the prognosis of diabetes mellitus in patients. Early detection and intervention of the underlying depression helps in improving lifestyle and over all prognoses of the patients along with prevention of contemplation or suicides among them. We wanted to determine the prevalence of depression among patients diagnosed with type 2 diabetes mellitus attending General Medicine Outpatient Department.

METHODS

This study was conducted in Meenakshi Medical College and Research Institute, Enathur, Kancheepuram, from December 2019 to February 2020. It is a cross sectional study. A total of 60 patients, diagnosed with type 2 diabetes mellitus were screened for depression using Hamilton-Depression scale.

RESULTS

Most common symptoms expressed by the patients were middle insomnia, anxiety somatic complaints along with suicidal thoughts and death wishes. 60% of the study population were diagnosed with depression of varying severities ranging from mild, moderate to severe.

CONCLUSIONS

This study revealed a significant association between depression and type 2 diabetes mellitus. Though more than half of the study population was presenting with major depressive symptoms it was not previously diagnosed with depression. Since majority of the patients complained of suicidal thoughts and death, it was referred to psychiatry department for further management and treatment of depression.

KEYWORDS

Depression, Diabetes Mellitus, Suicidal Ideas, Suicidal Thoughts, Insomnia, Somatic Complaints

BACKGROUND

Depression is one of the most commonly under diagnosed or misdiagnosed comorbid psychiatric disorders found among chronic diabetic patients. Anderson et al study concluded that irrespective of the prevalence of depression being one in four of patients with diabetes, only 10 to 15% of the population were formally diagnosed to have depression.[1] Samreen et al concluded that the prevalence of depression among diabetics where found to be two folds more in comparison with non-diabetic patients.[2] The prevalence of depression among diabetes mellitus patients were found to be 40 to 50% in various studies.[3,4,5,6,7] about 6-10% of patients with diabetes mellitus had suicidal ideas and plans.[8,9] The most common symptom complained by diabetes mellitus patients with depression was insomnia. Chronic insomnia led to significant deterioration in the quality of life along with poor glycaemic control among these patients leading to worsening of underlying medical condition.[10] Delay in diagnosis and treatment of depression among diabetes mellitus patients results in poor frustration tolerance along with emergence of substance abuse like alcohol or smoking or both which further worsens the quality of life, compliance and prognosis of the patient[11] The severity of depression was also found to be increasing with the duration of diabetes mellitus.[12,13]

The present study focuses on screening of depression among diabetic patients using Hamilton – depression scale. The study also focuses on symptomatology and suicidality among chronically ill diabetic patients. Presence of depression significantly alters the life style and also worsens the prognosis of diabetes in patients. Early detection and intervention of the underlying depression helps in improving the life style and over all prognoses of the patients along with prevention of contemplation or suicides among them.

METHODS

The present study is a cross sectional study conducted at Meenakshi medical college and research institute, Enathur, Kancheepuram, Tamil Nadu from the period of December 2019 to February 2020. The study population was determined to be 60 in number. Participants who were diagnosed with diabetes mellitus under American Diabetic association criteria were randomly selected from outpatient department of General medicine and referred Department of Psychiatry to Meenakshi medical college and research institute.

Hamilton Depression Scale
Gold standard scale for assessment of depression was developed in 1950s and originally published in 1960 with adequate internal reliability. We have used the 17 item version of Hamilton depression scale for assessment which approximately took 15 minutes per patient.

Proforma
We have used a semi structured socio-demographic questionnaire comprising of socio-demographic data, substance use, comorbid medical illnesses and its duration, family history of depression and diabetes mellitus, presenting complaints, past medical history along with Hamilton depression scale scores and impression. 10 minutes was the approximate duration taken to complete the questionnaire.

Inclusion Criteria
- Patients with diabetes mellitus of both gender, between the age group 18 to 70 years, who had given informed written consent for the study were included in the study.
- All type 2 diabetes mellitus patients attending the General medicine and Psychiatry outpatient department were included.

Exclusion Criteria
- Non diabetic patients were excluded from the study.
- Patients were diagnosed or treated for depression in the past were excluded.
- Patients who did not give consent were excluded.
- Patients with juvenile diabetes were excluded
- Patients with severe medical complications were excluded from the study.

Procedure
Patients who satisfied the inclusion criteria and the ones who consented to participate in the study were assessed using Hamilton- Depression scale. Patients were assessed along with history of presenting complaints, family and personal history details and the proforma containing the above details was filled along with their socio-demographic data. Every patient was assessed for about 30 minutes to complete all the above procedures.

Statistical Analysis
Data entry was done using MS Excel 2010 and statistical analysis was done using SPSS Version 22. Means and proportions were calculated, describing the baseline characteristics. Chi square test was used to compare statistical difference in proportion with the above details. A p value of <0.05 was considered statistically significant.

Ethical Considerations
Institute ethical committee approval and clearance was obtained before the study was started. Informed consent was obtained from all the patients in their own language, who participated in the study. No ethical issues were involved. The information of the patients was kept confidential.

RESULTS

This study had no differences based on the gender of the participants. Most of the study participants were belonging

to lower middle socio-economic status and were also from semi urban background. 75% of the study population had history of diabetes mellitus for more than 5 years of duration. More than half of the study population did not have any substance use (56.7%), however use of nicotine (13%) or alcohol (11%) or both (2%) were found in 43.3% of the population in total. Systemic hypertension was found to be the most common medical co-morbidity accounting to 88.3% of the study participants. More than 60% of the study population did not have any family history of depression. 31.7% of the study population expressed worthlessness (21.7%), death wishes and suicidal thoughts (8.3%) or attempts (1.7%). 75% of the study population had history of diabetes mellitus for more than 5 years of duration.

Majority of the study participants had insomnia with 68.3% showing early insomnia, 63.4% showing middle insomnia, 21.6% showing late insomnia. 85% of patients had psychic anxiety, while 83% had somatic anxiety. 60% of patients showed Depression of variable degrees: mild (21.7%), mild to moderate (31.7%), severe (6.7%), of which 76.7% acknowledged being depressed and ill.
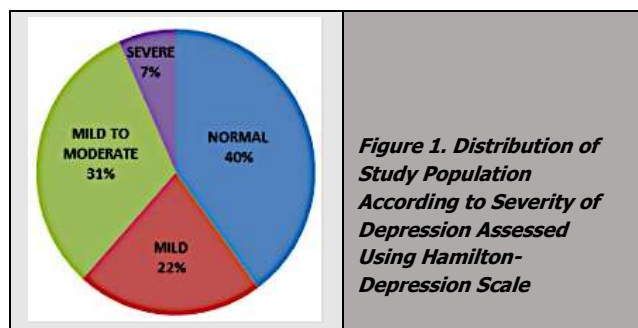

Figure 1. Distribution of Study Population According to Severity of Depression Assessed Using Hamilton-Depression Scale
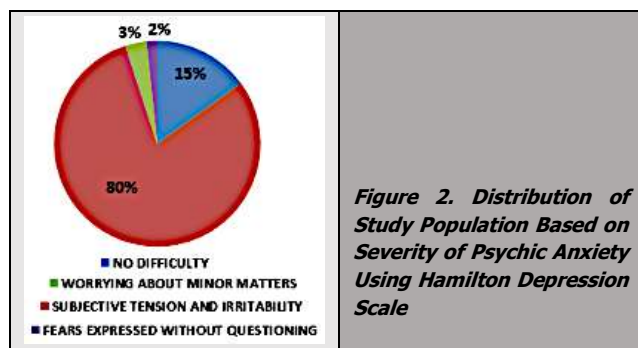

Figure 2. Distribution of Study Population Based on Severity of Psychic Anxiety Using Hamilton Depression Scale
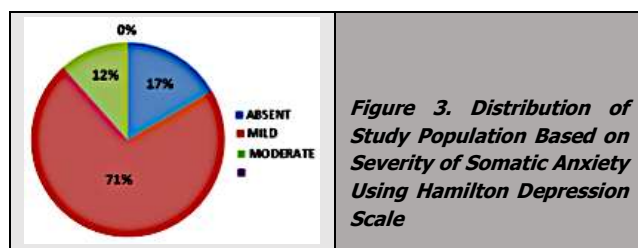

Figure 3. Distribution of Study Population Based on Severity of Somatic Anxiety Using Hamilton Depression Scale

Duration of Illness	Frequency	(%)
Less than 5 years	45	75.0
More than 5 years	15	25.0
Total	60	100.0
Table 1. Distribution of Study Participants According to Duration of Illness (n=60)		

Insomnia (Early in the Night)	Frequency	(%)
No difficulty falling asleep.	19	31.7
Complains of occasional difficulty falling asleep, i.e. more than 1/2 hour.	29	48.3
Complains of nightly difficulty falling asleep	12	20.0
Total	60	100.0
Table 2. Distribution of Study Participants According to Insomnia- Early in the Night (n=60)		

Insomnia- Middle of the Night	Frequency	(%)
Patient complains of being restless and disturbed during the night	25	41.7
Waking during the night – any getting out of bed rates 2 (except for purposes of voiding)	13	21.7
Total	60	100.0
Table 3. Distribution of Study Participants According to Insomnia- Middle of the Night (n=60)		

Insomnia: Early Hours of the Morning	Frequency	(%)
No difficulty	47	78.3
Waking in early hours of the morning but goes back to sleep.	11	18.3
Unable to fall asleep again if he/she gets out of bed.	2	3.3
Total	60	100.0
Table 4. Distribution of Study Participants According to Insomnia: Early Hours of the Morning (n=60)		

Suicide	Frequency	(%)
Absent	41	68.3
Feels life is not worth living	13	21.7
Wishes he/she were dead or any thoughts of possible death to self	5	8.3
Ideas or gestures of suicide.	1	1.7
Total	60	100.0
Table 5. Distribution of Study Participants According to Suicide (n=60)		

DISCUSSION

60% of the participants of our study were diagnosed with depression where as other studies had a range of between 40 to 50% of prevalence of depression among type 2 diabetes mellitus patients. There was no significant difference based on gender and the prevalence was found to be similar among both genders.[1-7] A significant association between suicidal ideas and attempts amounting to 10% of the study population of this study which was similar with other studies ranging between 6-10%.[8,9] Our study found that insomnia was the most common complaint of the patients diagnosed with depression (68.3% early insomnia, 63.4% middle insomnia, 21.6% late insomnia) which was congruent with other studies. Insomnia was also found to impair the quality of life of the patients who were diagnosed with diabetes mellitus and depression.[10] About 50 to 60% of type 2 diabetes patients who had depression also had systemic hypertension as co-morbidity. This study concluded with 88.3% of the patients had co-morbid systemic hypertension which also could be a contributing factor for depression.[1-7]

CONCLUSIONS

Early screening and appropriate intervention may lead to improvement in both mental and physical wellness along with prevention of suicides in these patients. Prevalence of depressive disorders among diabetes mellitus patients is

increasing in number and severity. We would like to stress upon the need for screening depression among all patients who have been diagnosed with diabetes mellitus to ensure early detection, diagnosis, management, and suicide prevention.

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