ORIGINAL ARTICLE

Frequency of Anxiety and Depression among Diabetic Patients

SAMEEN AFTAB[1], QAZI MUHAMMAD ZARLISH[2], MUHAMMAD AAKIF BASHIR[3]

ABSTRACT

Aim: To investigate the frequency of anxiety and depression in patients with diagnosed type-2 diabetes attending a diabetes clinic in a tertiary care hospital.
Study Design: Cross sectional study.
Place and Duration: Diabetic clinic of Nishter Hospital Multan from April 2017 to April 2018.
Methodology: Adult patients of age limit from 20 to 45 years who were diagnosed as diabetes type II and in state of anxiety or depression. Hospital anxiety and depression scale was used to assess severity of depression. SPSS version was used to analyze data. P value ≤ 0.05 was considered as significant.
Results: A total number of 383 patients were enrolled in the study.The mean duration of DM and duration of treatment was 61.78±5.73 and 56.53±5.77 respectively. Frequency of anxiety and depression is more common in rural, illiterate, less educated and female gender.
Conclusion: There is a high incidence of anxiety and depression in patients with type-2 diabetes and clinicians must screen regularly for better care of these patients. Depressions can also a leading cause of poor adherence to medical therapy and organ damage.
Keywords: Type-2 diabetes mellitus, depression, anxiety, diabetes clinic.

INTRODUCTION

Diabetes is a chronic systemic disease which alters the normal physiology of almost every organ of the human body[1]. A survey of world health organization estimated that about three hundred million people will be suffered till 2025. In a study conducted by Shera AS et al[2] reported that prevalence of diabetes mellitus in Pakistan was 6% in men and 3.5% in women in urban areas and 6.5% in men and 2.5% in women in rural areas.Cure and care of diabetes is a huge burden on economic and health system of our country[3].

Depression is a main factor innon compliance to medical therapy for many chronic diseases or has greater risk non compliance as compared to non depressed patients[4]. Furthermore patients with diabetes are at higher risk of depression specially those who are with poor glycemic control, uncontrolled diet intake and poor compliance to prescribed medication[5],[6]. Depression is more common among patients with associated complications such as diabetic foot or multi organ failure because they carry poor or non monitoring of blood sugar and antihypertensive plus lipid lowering drugs[7].

We can say depression is main barrier for management of diabetes and to reduce the chances of its associated disease involvement[8,9]. Limited data is available regarding depression in diabetes in subcontinent population. Presence absence or severity of depression can be assessed in outdoor department with anxiety and depression scale (questionnaire based self rating scale)[10]. Aim of this study is to evaluate the frequency of depression among diabetic patients in our regional population.

METHODOLOGY

This study was conducted in department of psychiatry Nishter Hospital Multan from February 2016 to February 2017. Study was started after ethical approval from ethical board of institution and informed consent from patients. Sixty consecutive patients of diabetes mellitus who were non insulindependent from more than five years were included in the study. Non probability consecutive sampling technique was used. Patients with insulin dependency, history of psychiatric disorder, age less than 12 years and comorbid disease like thyrotoxicosisand renal failure were excluded from the study.

All study variables and comorbid illness like hypertension, ischemic heart disease, hyperlipidemias and smoking were noted. Patient's history about any treatment modality used by patients for control of diabetes noted. HBA1C was investigated for assessment of diabetic control. Urdu version of patient anxiety and depression scale was used.

Collected data was entered in SPSS version 24 for analysis of data, mean and SD was calculated for numerical data like age, duration of treatment and duration of DM. Frequency and percentages were calculated for categorical variables like gender, marital status, area of living, education and quality of diabetic control (good, average and poor). Chi square test and student t-test was used to see association. P value ≤05 was considered as significant.

RESULTS

A total number of n=383 patients were enrolled in this study, both gender.HADS depression and HADS anxiety was analyzed and their association was assessed with different variables.

HADS depression:

Case (>9): n=242: The mean duration of DM and duration of treatment was 61.78±5.73 and 56.53±5.77 respectively. Gender distribution discovered as 140(57.9%) males and 102(42.1%) females. 175(72.3%) belonged to rural areas while 67(27.7%) belonged to urban areas. 146(60.3%) patients were married and 96(39.7%) were un-married. 122(50.4%) were literate while 120(49.6%) were illiterate. Treatment for diabetes and quality of diabetic control (HbA1c level) was shown in table I.

[1,2,3]HO Medicine, Nishtar Hospital, Mulan
Correspondence to Dr. Sameen Aftab,
Email: sameed75989@gmail.com cell: 0301-6329997

Non-case (<9): n=141: The mean duration of DM and duration of treatment was 61.56±6.09 and 56.13±6.62 respectively. Gender distribution revealed as 84(59.6%) males and 57(40.4%) females. 105(74.5%) belonged to rural areas while 36(25.5%) belonged to urban areas. 88(62.4%) patients were married and 53(37.6%) were un-married. 69(48.9%) were literate while 72(51.1%) were illiterate. Treatment for diabetes and quality of diabetic control (HbA1c level) was shown in table I. The differences were statistically insignificant except treatment for diabetes (p=0.000) (Table I). Association of quality of control of diabetes with different variables HADS depression and anxiety scores

Table-I: HADS Depression

Variable	Case (>9) n=242	Non-case (<9) n=141	p-value
Gender			
Male	140(57.9%)	84 (59.6%)	0.741
Female	102(42.1%)	57 (40.4%)	
Area			
Rural	175(72.3%)	105 (74.5%)	0.647
Urban	67 (27.7%)	36 (25.5%)	
Marital status			
Married	146(60.3%)	88 (62.4%)	0.687
Un-married	96 (39.7%)	53 (37.6%)	
Education level			
Literate	122(50.4%)	69 (48.9%)	0.780
Illiterate	120(49.6%)	72 (51.1%)	
Treatment for diabetes			
Diet	5 (2.1%)	12 (8.5%)	0.000
Diet + oral hypoglycemic	108(44.6%)	91 (64.5%)	
Diet + oral hypoglycemics+ Insulin	73 (30.2%)	17 (12.1%)	
Diet + insulin	45 (18.6%)	17 (12.1%)	
None	11 (4.5%)	4 (2.8%)	
Quality of diabetic control (HbA1c level)			
Good control (<6)	29 (12%)	23 (16.3%)	0.411
Average control (6-8)	110(45.5%)	65 (46.1%)	
Poor control (>8)	103(42.6%)	53 (37.6%)	
Duration of DM	61.78±5.73	61.56±6.09	0.723
Duration of treatment	56.53±5.77	56.13±6.62	0.593

HADS anxiety:

Case (>9): n=223: The mean duration of DM and duration of treatment was 61.59±5.75 and 56.15±5.88 respectively. Gender distribution revealed as 128(57.4%) males and 95(42.6%) females. 160(71.7%) belonged to rural areas while 63(28.3%) belonged to urban areas. 129(57.8%) patients were married and 94(42.2%) were un-married. n=116 (52%) were literate while 107(48%) were illiterate. Treatment for diabetes and quality of diabetic control (HbA1c level) was shown in table II.

Non-case (<9): n=160: The mean duration of DM and duration of treatment was 61.84±6.03 and 56.26±6.39 respectively. Gender distribution revealed as 96(60%) males and 64(40%) females. 120(75%) belonged to rural areas while 40(25%) belonged to urban areas. 105(65.6%) patients were married and 55(34.4%) were un-married. 75(46.9%) were literate while 85(53.1%) were illiterate. Treatment for diabetes and quality of diabetic control (HbA1c level) was shown in table II. The differences were statistically insignificant except treatment for diabetes (p=0.000). (Table II). Association of quality of control of diabetes with different variables HADS depression and anxiety scores

Table-II: HADS Anxiety

Variable	Case (>9) n=223	Non-case (<9) n=160	p-value
Gender			
Male	128(57.4%)	96 (60%)	0.610
Female	95 (42.6%)	64 (40%)	
Area			
Rural	160(71.7%)	120(75%)	0.479
Urban	63(28.3%)	40(25%)	
Marital status			
Married	129(57.8%)	105(65.6%)	0.124
Un-married	94(42.2%)	55(34.4%)	
Education level			
Literate	116(52%)	75(46.9%)	0.321
Illiterate	107(48%)	85(53.1%)	
Treatment for diabetes			
Diet	5 (2.2%)	12(7.5%)	0.000
Diet + oral hypoglycemic	108(48.4%)	91(56.9%)	
Diet + oral hypoglycemics+ Insulin	73(32.7%)	17(10.6%)	
Diet + insulin	37(16.6%)	25(15.6%)	
None	0%	15(9.4%)	
Quality of diabetic control (HbA1c level)			
Good control (<6)			0.234
Average control (6-8)			
Poor control (>8)			
Duration of DM	61.59±5.75	61.84±6.03	0.684
Duration of treatment	56.15±5.88	56.26±6.39	0.689

DISCUSSION

A close relationship was reported between diabetes and depression which reduce the better outcomes through decreasing adherence and self care. Risk of diabetes 37% is more in depressed persons than normal healthy subjects. Depression may lead to poor glycemic control which results in multi organ failure if remains for a long time[11]. Our study reported high frequency of depression among diabetic patients and this ratio is higher in female diabetic population than male.

In a study conducted by Neuwan A et al[12] comparison between diabetic and non diabetic persons was done and reported frequency of depression is 24% more in diabetic subjects than non diabetic subjects. It was also reported that female subjects are more suffered as compared to male. Similar results are also shown in our study that gender difference is significantly higher in female subjects. It was also reported in this study that in female subjects other contributing factors like post menu paused hormone changes, psychological factors, cultural and social factors.

In another study conducted by Azad N et al[13]reported 50% of anxiety and depression among diabetic patients. Female gender, lack of education and housewives are more prone to depressive state as compare to others. Fifty percent is a big figure when compared with other communities of different regions. Findings of this are also

comparable with our results and conclusion. Diabetes with depression is aalso an economic burden for population of health care system.

A similar study was conducted by Thour A et al[14]on prevalence of depression among diabetic patients and reported 41% severe depression, 4% moderate depression 27% mild depression among diabetic subjects. Al-Ghamdi AAet al[15] conducted a similar study on frequency of depression among diabetic and non diabetic patients and reported 34% prevalence of depression in diabetic patients in comparison with non diabetic patients who were presented 13% depression. This study is also comparable with our study which significant difference in both groups.

Another study was conducted by Amino SA et al[16]on Indian population to find out the exact figure of depression among diabetic population and reported 37.5% depression in diabetic patients. He used anxiety and depression scale for investigation of depression and reported 21% mild and 4.5 severe depressions in diabetic subjects. Like previous studies he also reported associated factors such as female gender, psychological factor of community/ rural residence.

MossieTB et al[17] conducted a similar study on this topic and reported 17% depression in diabetic population with confidence interval 95%. Non adherence to medicine was found about 28% and poor compliance in 18.2% of patients. Another study was conducted by BadescuSV et al[18] and reported close association between diabetes and depression. He recommended that depression must be treated in patients with major illness like diabetes to ensure the good compliance of treatment.

A similar study was conducted by Sweileh WM et al[19] and reported more than 40% cases diagnosed as depression without use of any antidepressants. He also recommended that early diagnosis and treatment of depression is necessary for better compliance to medical therapy and good glycemic control. This study is also comparable with our study which presents similar findings to our study. Habtewold TD et al[20] also reported same results as our study and some previous studies.

CONCLUSION

There is a high incidence of anxiety and depression in patients with type-2 diabetes and clinicians must screen regularly for better care of these patients. Depressions can also a leading cause of poor adherence to medical therapy and organ damage.

REFERENCES

1. Semenkovich K, Brown ME, Svrakic DM. Depression in Type 2 Diabetes Mellitus: Prevalence, Impact, and Treatment. Drugs. 2015;75:p577.
2. Fisher L, Gonzalez JS, Polonsky WH. The confusing tale of depression and distress in patients with diabetes: a call for greater clarity and precision. Diabetic medicine : a journal of the British Diabetic Association. 2014;31(7):764-72.
3. Shera AS, Jawad F, Maqsood A. Prevalence of diabetes in Pakistan. Diabetes Res ClinPract 2007;76:219–22.
4. Vancampfort D, Mitchell AJ, De Hert M, Sienaert P, Probst M, Buys R. Type II diabetes in patients with major depressive disorder a meta analysis of prevalance estimates and predictors. Depress Anxiety. 2015;32(10):763.
5. Wang L, Song R, Chen Z, Wang J, Ling F. Prevalence of depressive symptoms and factors associated with it in type 2 diabetic patients: a cross-sectional study in China. BMC Public Health. 2015;15:188.
6. Chapman Z, Shuttleworth CMJ, Huber JW. High levels of anxiety and depression in diabetic patients with Charcot foot. Journal of Foot and Ankle Research. 2014;7:p22.
7. Hermanns N, Schmitt A, Gahr A, Herder C, Nowotny B,. The Effect of a Diabetes-Specific Cognitive Behavioral Treatment Program (DIAMOS) for Patients With Diabetes and Subclinical Depression: Results of a Randomized Controlled Trial. Diabetes Care 2015; 38(4): 551 -60.
8. Fisher L, Hessler DM, Polonsky WH, Masharani U, . Prevalence of depression in Type 1 diabetes and the problem of over-diagnosis. Diabet Med. 016;33(11): 1590-97.
9. Moulton CD, Pickup JC, Ismail K. The link between depression and diabetes: the search for shared mechanisms. Lancet Diabetes Endocrinol. 2015;3(6):461-71.
10. Dabelea D, Mayer-Davis EJ, Saydah S. Prevalence of Type 1 and Type 2 Diabetes Among Children and Adolescents From 2001 to 2009. *JAMA*. 2014;311(17):1778–1786.
11. Tovote KA, Fleer J, Snippe E, Peeters AC, Emmelkamp PM, Sanderman R. Individual Mindfulness-Based Cognitive Therapy and Cognitive Behavior Therapy for Treating Depressive Symptoms in Patients With Diabetes: Results of a Randomized Controlled Trial. Diabetes Care. 2014;37(9):2427-34.
12. Azad N. Frequency of depression and anxiety in patients attending diabetic clinic. J Ayub Med Coll Abbottabad 2014;26(3):323-27.
13. Thour A, Das S, Sehrawat T, Gupta Y. Depression among patients with diabetes mellitus in North India evaluated using patient health questionnaire-9. *Indian Journal of Endocrinology and Metabolism*. 2015;19(2):252-55.
14. Al-Ghamdi AA. A high prevalence of depression among diabetic patients at a teaching hospital in Western Saudi Arabia. Neurosciences (Riyadh). 2004;9(2):108-12.
15. Aminu AS, Chandrasekaran V, Nair S. Depression among patients with diabetes: A community based study in South India. J Med Sci 2017;37:237-44.
16. Mossie TB, Berhe GH, Kahsay GH, Tareke M. Prevalence of Depression and Associated Factors among Diabetic Patients at Mekelle City, North Ethiopia. *Indian Journal of Psychological Medicine*. 2017;39(1):52-58.
17. Bădescu S, Tătaru C, Kobylinska L, et al. The association between Diabetes mellitus and Depression . *Journal of Medicine and Life*. 2016;9(2):120-125.
18. Sweileh WM, Abu-Hadeed HM, Al-Jabi SW, Zyoud SH. Prevalence of depression among people with type 2 diabetes mellitus: a cross sectional study in Palestine. *BMC Public Health*. 2014;14:163.
19. DejenieHabtewold T, Radie YT, Sharew NT. Prevalence of Depression among Type 2 Diabetic Outpatients in Black Lion General Specialized Hospital, Addis Ababa, Ethiopia. Depression Research and Treatment. 2015;2015:184902.
20. Nouwen A, Winkley K, Twisk J, Lloyd CE, Peyrot M, Ismail K, et al. Type-2 diabetes mellitus as a risk factor for the onset of depression: a systematic review and meta-analysis. Diabetologia 2010;53:2480–6.