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Management of co- morbid depression in Diabetic patients : A Review

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ABSTRACT

Depression is commonly found as a co-morbid condition in diabetes. The relationship between the diabetes and depression is bidirectional. Coexistence of diabetes and depression is associated with poor symptom control, increased suffering, health care expenditure, disability, decreased quality of life and greater risk of death. Depression in diabetes is under diagnosed and undertreated. Depression adversely effect on both psychological well being and diabetic outcomes. Management of depression in diabetes should be directed toward improving psychological and medical outcomes, and quality of life. Pharmacologic and psychotherapeutic interventions shown to be effective in the management of depression in diabetes, which improve the glycaemic control and reduce the risk of short term complications. Selective serotonin reuptake inhibitors(SSRI), Serotonin norepinephrine reuptake inhibitors, and atypical antidepressants (eg. Bupropion) are preferred pharmacologic interventions for patients with diabetes and depression.

Keywords: Diabetes, Depression, Glycaemic control, Anti depressants.

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INTRODUCTION

Diabetes is a chronic condition caused by an absolute lack of insulin or relative lack of insulin as a result of impaired insulin secretion and action. Its hallmark clinical characteristics are symptomatic glucose intolerance resulting in hyperglycemia and alterations in lipid and protein metabolism. In the long term, these metabolic abnormalities contribute to the development of complications such as cardiovascular disease (CVD), retinopathy, nephropathy, and neuropathy and a higher risk of cancer¹. A vast majority of diabetic patients was not doing exercise; had least knowledge of self monitoring blood glucose and did not follow diabetes diet. Various environmental factors, lack of related information and peoples reluctant attitude played important role in the high prevalence of diabetes¹⁹. The rigors of managing diabetes can be stressful and lead to symptoms of depression. Diabetes can cause complications and health problems may worsen symptoms of depression. Depression is commonly found a co-morbid condition in diabetes. Coexistence of diabetes and depression is associated with poor symptom control, increased suffering, health care expenditure, disability, decreased quality of life and greater risk of death. The relationship between diabetes and depression have been shown to be bidirectional. Both physiological and behavioural factors play a role in the relationship between depression and diabetes. Depression is potentially related to impaired glucose tolerance, probably leading to poor glycaemic control. Depression is an independent risk factor for the onset of T2DM. It negatively affect the course of diabetes and is associated with increased risk of complications and mortality. Depression may exert its negative effect through hormonal, neuronal, or immune system changes that directly affect the body's ability to produce or use insulin²

Depressed patients adhered less to hypoglycaemic agents, optimal glycaemic control and favourable diabetes outcomes cannot be achieved through low adherence to hypoglycaemic agents³. The World Health Organization projected that 300 million people will suffer from diabetes by 2025¹³.

Mental Disorders in Patient with Diabetes Mellitus

Psychiatric disorders, particularly major depressive disorder (MDD), generalized anxiety disorder and eating disorders, are more prevalent in people with diabetes compared to the general population. All individuals with diabetes should be regularly screened for the presence of depressive and anxiety symptoms. Individuals with diabetes and mental health disorders have decreased medication adherence, decreased compliance with diabetes self-care, increased functional impairment, increased risk of complications associated with diabetes, increased

healthcare costs and an increased risk of early mortality. The following treatment modalities should be incorporated into primary care and self-management education interventions to facilitate adaptation to diabetes, reduce diabetes-related distress and improve outcomes: motivational interventions, stress management strategies, coping skills training, family therapy and collaborative case management⁴.

The Co-Morbidity of Diabetes Mellitus and Depression

Co-morbid depression in patients with diabetes is also associated with increased numbers and severity of diabetic symptoms and complications⁵. Higher prevalence of depression in women as compared to men^{14,15}. In a large population-based study of patients with diabetes, the overall number of diabetes symptoms was linearly related to the number of major depression symptoms after controlling for objective measures of diabetes severity (i.e., glycosylated hemoglobin HbA1c and number of diabetes complications). Several factors, including sedentary lifestyle, obesity, and an aging population, contribute to epidemic rates of type 2 diabetes mellitus. Depression frequently occur as a co-morbid condition along with diabetes although it is unrecognized and untreated in approximately two thirds of patients with both conditions. The risk factors for depression were age, central obesity, diabetic complications particularly neuropathy and diabetic foot disease and increased pill burden¹⁶. The course of depression in patients with both diabetes and depression is chronic and severe. Depression is associated with non-adherence to diabetes self-care including following dietary restrictions, medication compliance, and blood glucose monitoring resulting in worse overall clinical outcomes and poor glycaemic control. Due to potential negative health consequences associated with co morbid diabetes⁸ and depression, both conditions should be optimally treated to maximize patient outcomes⁶. A higher risk of type 2 diabetes exists among those who experienced major depressive disorder⁷. The frequency of depression is high among patients with Diabetes Mellitus type II. Mild to moderate level of Depression is more prevalent in diabetics than in the general population. The coexistence of diabetes and depression is associated with significant morbidity, mortality and increased healthcare expenditures. Coordinated strategies for clinical care are necessary to improve clinical outcomes and reduce the burden of illness⁹.

DIAGNOSIS OF DEPRESSION IN DIABETIC PATIENTS

The co-existence of depression in diabetes can lead to worsening of diabetes outcomes and poor glycaemic control. One barrier to properly diagnosing depression in diabetes is that the symptoms of depression (e.g. fatigue, gain or loss of weight) are similar to those arising from the poor management of diabetes. Indeed, studies have shown that it is difficult to distinguish diabetes-related symptoms from depression²⁰. American Psychiatric Association (APA) published refined,

standardized criteria for diagnosing depressive disorders in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR).

Symptoms of depression may be induced or exacerbated by numerous medical illnesses or medications. Individuals must possess at least five symptoms, one of which is either depressed mood or anhedonia (diminished interest or pleasure in activities). The other seven symptoms include ; Change in appetite, Change in sleep, Low energy, Poor concentration (or difficulty making decisions), Feelings of worthlessness or inappropriate guilt, Psychomotor agitation or retardation, Recurrent thoughts of suicide .The new edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-V), aims to provide an accurate diagnosis depression ²².The diagnostic criteria also require that the mood disturbance must cause marked distress or result in clinically significant impairment of social or occupational functioning. The structured mental status examination is an established systematic way of assessing a patient's mental health. Through a structured interview, the clinician has an observational basis for evaluating a patient's appearance, behavior, speech, mood, sensorium, memory, and intellectual function. Gold Standard Rating Scales are, Hamilton Rating Scale for Depression (HAM-D or HRS, clinician administered),The Beck Depression Inventory (BDI , patient-rated), Inventory of Depressive Symptomatology (IDS or QIDS , patient-rated or clinician administered)²³.

Management of Co- Morbid Depression In Patients With Diabetes Mellitus

Studies shows that people with diabetes have greater risk of depression than people without diabetes. Both depression and diabetes are prevalent and chronic diseases which negatively impact quality of life¹². Identification and management of depression are important aspects of diabetes care. Self-administered or professionally administered instruments, such as PHQ-9& HAMD are useful adjuncts to the clinical interview in the identification of depression¹⁷.The stress of diabetes management, diabetes complications, fluctuations in blood sugar level etc associated with development of depression. Both pharmacologic and psychotherapeutic interventions have demonstrated efficacy in patients with diabetes and depression. Antidepressants are the first line treatment in primary care. Psychiatric medications have the capacity to affect metabolic parameters and cause changes in weight, glycemic control and lipid profile and, in some cases, can have immunomodulating effects¹⁰⁻¹¹.

Selective Serotonin Reuptake Inhibitors(SSRI) , Serotonin norepinephrine reuptake inhibitors, and atypical antidepressants (eg.Bupropion) are preferred pharmacologic interventions for patients with diabetes and depression. Monoamine oxidase inhibitors and TriCyclic Antidepressants (TCA) are usually avoided because they are associated with adverse events, particularly detrimental to

diabetes. Tri Cyclic Antidepressants are associated with orthostatic hypotension, urinary retention, and prolongation of cardiac depolarisation. Newer anti depressant have fewer antiadrenergic , anticholinergic, and anti histaminic effects, and have less potential for lethal over dose. Some pharmacologic agents for the treatment of depression offers identifiable advantage for diabetic symptom management. Fluoxetine and Bupropion have been associated with decrease in fasting glucose blood levels, better glycaemic control ,short term weight loss and improvements in HbA1c levels. Two types of Psychotherapy that have proven to be especially effective in treating depression are:

1.Cognitive behavioral therapy (CBT), which works to change negative styles of thinking and behaving that may contribute to depression. It combines cognitive therapy, which helps patients develop healthier thought patterns and behavior therapy, which helps patients respond in new ways to difficult life situations.

2. Interpersonal therapy (IPT), which works to change relationships that cause or exacerbate depression²⁰.

Cognitive behaviour therapy is effective in managing depression ⁶.With Cognitive behaviour therapy(CBT) , patients are taught to recognize and remove patterns of thinking that characterize and perpetuate depression¹⁸.No evidence presently shows that the combination of Cognitive behaviour therapy and medication is superior to these treatments given individually. Depressed patients with diabetes had higher total medical costs than patients without depression⁹.

CONCLUSION

Pharmacologic and psychotherapeutic interventions shown to be effective in the management of depression in diabetes, which aim to improving psychological and medical outcomes and quality of life . Antidepressant is the treatment of choice in primary care settings, because it is less labor intensive than psychotherapy & have lower initial costs. The selective serotonin reuptake inhibitors Bupropion, Mirtazapine and Venlafaxine are recommended as first line treatment of depression in diabetes. TriCyclic Anti-depressants(TCA) and Monoamine oxidase inhibitors (MAO-I) are less commonly used because of its side effects. Psychotherapy combined with psychoeducational interventions or collaborative care(psychotherapy or pharmacological treatment combined with psychoeducation and psychosocial interventions) seem to be cost-effective and yield beneficial results, both on mental health outcomes as well as diabetes management and glycemic control²⁴. Pharmacological management of depression in diabetic patients require awareness of common comorbid conditions, potential drug- drug interactions, and adverse effects.

Cognitive behavioral therapy (CBT) will help the patients to recognize and remove patterns of thinking that characterize and perpetuate depression. The overall healthcare cost are high in diabetic patients with depression. Suicidal behavior is an important risk factor for people with untreated depression. Brieler A et al, conduct retrospective cohort study involving 1399 patients ,to determine whether the use of antidepressant medication is associated with glycaemic control in depressed patients with Type 2 Diabetes shows, Antidepressant medication use was associated with improved glycaemic control²¹ .

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