An overview of Depression and its Pharmacotherapy

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Abstract
Depression is a very common mental health disorder, increasing with the socioeconomic and medical condition. Patients experience different feelings, depending upon the severity, frequency, and duration of symptoms. If left untreated and/or undiagnosed; can lead to complications such as suicidal thoughts etc. Patients can have an unhealthy life; caregiver or health care provider should focus on depressed individual to improve the quality of life. It can affect the normal daily routine, which can interfere in their daily work. Antidepressants often used for the treatment of depression from mild to moderate depression until and unless there would be the need of electroconvulsive therapy. Psychotherapy along with antidepressants agents can increase the success rate of treatment and is also reported to be more effective than treating with medication alone. A pharmacist can play a pivotal role in this regard.

Keywords: Depression; Pharmacotherapy; Psychotherapy.

Introduction
Depression is very common mental health disorder but a serious illness.1 It is a major public health problem and has a greater impact on the condition of the patient or health when co morbidity with a chronic medical condition such as cancer.2 The Global Burden of Disease 20003 found out that it was the fourth leading cause of death in the world and affect the patient as well as society worldwide.4 Depression is the most significant contributor of global burden on disease, it affect all the communities around the world. About 350 million people are affected by depression. World mental health survey concluded that every 1 in 20 person is affected by depression, which is an alarming situation across the globe and leading cause of other diseases.3 Patients suffering from depression experience different feelings depending upon the severity, frequency, and duration of symptoms. Some of the symptoms associated with depression include persistent sadness, anxious feelings of hopelessness...
or pessimism, guilt, worthlessness, helplessness, irritability and or restlessness. The patients are likely to lose interest in their activities and/or hobbies. Over the long run it leads to fatigue, difficulty in concentrating, memory retention, and decision making. Associated complications of depression include insomnia, narcolepsy, anorexia, suicidal thoughts that sometimes become difficult to treat.¹

**Classification of Depression**

It is classified into following types include, major depressive disorder (MDD), depression with melancholic or catatonic features, atypical depression, psychotic features, bipolar depression, single or recurrent episode, dysthymia, and seasonal affective disorder (SAD). The differential diagnosis for depression includes other psychiatric disorders, CNS diseases, endocrine disorders, drug-related conditions, infectious and inflammatory diseases, and sleep-related disorders.⁵ Major depressive disorder (MDD) was identified by the World Health Organization (WHO) in 2001 as the fourth leading cause of disability and premature death in world. It is estimated that by the year 2020 MDD would be second to ischemic heart disease in regard to disease burden. The WHO media center published a fact sheet in 2001 on mental and neurological disorders which stated that 25% of individuals develop one or more mental or behavioural disorders at some stage in their lives, in both developed and developing countries. A cross sectional study was conducted which reported depression all over in Karachi, Pakistan, and also reported an increases prevalence of depression in society due to stress, related to socio-economic factors. If it remains un-noticed, unchecked and un-observed it would result in a big disaster. It is suggested that healthy lifestyle habits can help prevent depression, include eating properly, sleeping adequately, exercising regularly, learning to relax, and not drinking alcohol or using drugs.⁶

An epidemiological study was conducted in Pakistan in 2007 which reported the high prevalence rates in northern Pakistan and big urban center i.e. Karachi. The study reported every third individual is expected to suffer from depression and anxiety. Some community based studies conducted in various regions of Pakistan reported prevalence as high as 66% in women from rural areas to 10% in men from urban areas. The mean overall point prevalence was 33.62%. In another study the prevalence rate of 30% was reported from Karachi. Crude estimates for males were 18.1% and for females 42.2%.⁷ These studies have found various risk factors for depression in studied population. Rates for depressive disorder are reported to be higher in women than men. This is consistent with the figures from western countries. However it was observed that significantly higher rates in married than single females. In a cross sectional epidemiological study carried out by N. Haider ⁷ in urban middle class population of Karachi, specifically aimed at the psychosocial risk factors, found the close knitted family systems to be a particular risk factor for depression. It also reported low level of education, poverty and economic constraints as other risk factors however the former being the dominating one. Another important risk factor observed for depression is socio-economic status. It is a complex factor it comprise family problems, income, standard of living, occupational status, and education as sub-domains.⁷ Depression is one of the causes of suicide attempts. As the suicidal death study shows that 3.5 per cent the maximum intensity consisted only of feelings that life was not worth and this feeling occur in depressive patient mostly. Subjects experiencing suicidal feelings in the last year reported more minor psychiatric symptoms, particularly of depression, were more socially isolated, less religious, and to a lesser extent had experienced more stressful events and more somatic illness. In addition to this, female were more likely to commit suicide.⁸ Along with suicide, depression is one of the major causes for provoked seizures. It was reported in a study that depression has been shown to increase risk for epilepsy and suicide attempts. Major depression and attempted suicide independently increase the risk for unprovoked seizure. The data reported from the study suggested that depression and suicide attempt may be due to different underlying neuro-chemical pathways, each of which is important in the development of epilepsy (95% CI). A history of major depression was 1.7 fold more common among cases than among controls (95% CI, lower 1.1 upper 2.7). A history of attempted suicide was 5.1-fold more common among cases than among controls (95% CI, lower 2.2 upper 11.5). Attempted suicide
increased seizure risk even after adjusting for age, sex, cumulative alcohol intake, and major depression or number of symptoms of depression.\textsuperscript{9} Patients with depression need to take good care of them to feel better, due to the symptoms, they suffer from insomnia and restlessness. The patients may also suffer from anorexia and lose interest in daily activities. Due to the aforementioned factors, it leads to detrimental health consequences.\textsuperscript{10}

**Major Depressive disorder MDD**
Major depressive disorder, or major depression, is a combination of symptoms that interfere with a person's working, sleeping and normal daily routine habits and/or activities. Some patients may experience only a single episode in their lifetime, but more often a person may have multiple episodes. Dysthymic disorder or dysthymia is long-term (2 years or longer) symptoms that may not be severe enough to disable a person but can prevent normal functioning of the body. People with dysthymia may also experience one or more episodes of major depression during their lifetime.

**Minor depression**
Minor depression is characterized by having symptoms for 2 weeks or longer that do not meet full criteria for major depression. Without treatment, people with minor depression are at high risk for developing major depressive disorder. Some forms of depression are slightly different, or they may develop under unique circumstances. It is still debatable how to characterize and define these forms of depression. They include, psychotic depression, occurs when a person has severe depression plus some form of psychosis, such as having disturbing false beliefs or a break with reality (delusions), or hearing or seeing upsetting things that others cannot hear or see (hallucinations).

**Postpartum depression**
Postpartum depression, which is much more serious than the “baby blues” that many women experience after giving birth, when hormonal and physical changes and the new responsibility of caring for a newborn can be overwhelming. It is estimated that 10 to 15 percent of women experience postpartum depression after giving birth.

**Seasonal affective disorder SAD**
Seasonal affective disorder (SAD) the onset of depression during the winter months, when there is less natural sunlight. The depression generally lifts during spring and summer. SAD may be effectively treated with light therapy, but nearly half of those with SAD do not get better with light therapy alone. Antidepressant medication and psychotherapy can reduce SAD symptoms, either alone or in combination with light therapy.

**Bipolar disorders**
Bipolar disorder, also called manic-depressive illness, is not as common as major depression or dysthymia. It is characterized by mood swings. Some other associated illnesses may come on before depression, cause it, or be a consequence of depression. But depression and other illnesses interact differently in different individual.

**Chronic depression**
Chronic depression is illness which last for 2 years or more and comprises of 4 subtypes of depressive illness i.e. chronic major depressive disorder, dysthymic disorder, dysthymic disorder with major depressive disorder “double depression” and major depressive disorder with poor inter-episodic recovery.\textsuperscript{11}

Anxiety disorders, such as post-traumatic stress disorder (PTSD), obsessive-compulsive disorder, panic disorder, social phobia, and generalized anxiety disorder, often associated with depression PTSD can occur after a person experiences a terrifying event or suffering, such as a violent assault, a natural disaster, an accident, terrorism or military combat. Alcohol and other substance abuse or dependence may also co-exist with depression. Studies have shown that mood disorders and substance abuse have been observed to co-exist with latter complementing the former. Depression is also reported to be associated as co-morbidity with other major and serious illnesses like heart disease, stroke, cancer, HIV/AIDS, diabetes, and Parkinson’s disease and its adequate treatment can also help improve the outcome of associated co-morbidities.
Risk factors of depression
Most likely, depression is caused by a combination of genetic, biological, environmental, and psychological factors. Studies reported imbalance of important neurotransmitters NT in depression. But it is difficult to prove if depression is the solitary reason for such. It is also evident from some studies that depression tends to run in families i.e. the genetic predisposition. But at the same time depression can occur in people without having family histories. Some researches indicate that risk for depression results from the influence of several genes acting together with environmental or other factors. In addition, trauma, loss of a loved one, a difficult relationship, or any stressful situation may trigger a depressive episode. Research indicates that depressive illnesses are disorders of the brain.\(^\text{1,12}\)

In the case of cancer patient it was observed in a study these patients experience less common depression and anxiety, but mood swings in 30-40% hospitalized patients without a significant difference in palliative and non-palliative care settings and concluded that the clinicians should be vigilant for mood disturbance along with episodes of depression.\(^\text{13}\)

Diagnosis of depression
The widely used criteria for diagnosing depressive conditions in depressive individuals are found in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR\(^\text{14}\) and the World Health Organization’s International Statistical Classification of Diseases and Related Health Problems ICD-10. There is no clinical laboratory test for major depression and both the DSM-IV-TR and ICD-10 identify specific depressive symptoms. The ICD-10 banks upon three typical depressive symptoms i.e. depressed mood, anhedonia and fatigue as biomarkers of depression, two of which needed to be present to determine depressive disorder diagnosis. According to the DSM-IV-TR, there are two biomarkers i.e. depressed mood and anhedonia, one of which must be present to determine diagnosis of a major depressive episode, and five symptoms out of the following such as depressed mood, anorexia, insomnia, psychomotor agitation, fatigue, guilt or worthlessness, difficulty in concentrating and suicidal thoughts must be present daily or for at least 2 weeks.\(^\text{15}\)

Health awareness would be helpful in developing the understanding of the mental disease which will in turn help in understanding the condition of the patient and eventually lead towards management of the treatment.\(^\text{16}\) Antidepressants are often used for the treatment of depression from mild to moderate depression until and unless there would be a need for electroconvulsive therapy.\(^\text{14}\) Primary care physician are consulted before obtaining the services of mental health care provider, when patients suffers from depression. Depressed patients often deny, oversight their particulars somatic and cognitive/behavioural symptoms, undervalue symptoms severities. Elderly patients suffering from depression have an approximate prevalence between 5%-50%, increase in age result in more suicidal thoughts and attempts. Depressive disorder occurs at any stage of life, percentage of major depression has been elevated as already discussed in the beginning. Pharmacological treatment and non-pharmacological treatment such as cognitive and psychotherapy have observed to increase benefits in depressive patients.

Pharmacotherapy for depression
Pharmacotherapy of depression is a process which includes thoughtfull insight to medication side effects, adverse effect and patient specific factors.\(^\text{17}\) The outcome is not immediately seen as weeks are needed to get the desired response. Medicines prescribed must comply with the patient appropriate condition. For this targeted response patient adherence to the medications must be important factor in order to get relief from symptoms. A clinical pharmacist can come in handy is drug selection, optimization and medication adherence. In addition to this, improvement in symptoms and quality of life are normally the goals of therapy. A combination of pharmacotherapy and psychotherapy are beneficial rather giving monotherapy.\(^\text{18}\)

Psychotherapy along with antidepressants agents can increase the rate of treating patients correctly. This can also be associated with higher improvement rate than medications alone. It also increase medication adherence by patient which in turn would lead to better outcomes. However, evidence on medication adherence-enhancing effects of psychological
intervention was reported in a study in which two groups were studied with one being treated with pharmacotherapy in combination with psychotherapy and the latter with pharmacotherapy alone. Therefore, psychotherapy is considered best along with pharmacological treatment with objectives of improving quality of life, enhance patient’s social functioning, promote adherence to medication and prevent recurrence. The American Psychiatric Association (APA) emphasizes the need to customize a treatment plan for each patient based on a careful assessment of symptoms, including rating scale measurements, as well as an analysis of therapeutic benefits and side effects. The treatment would be based on the various biomarkers such as clinical assessment, comorbidities, stressors analysis, patient preferences and results of previous treatment. Medications used to treat depression include selective serotonin reuptake inhibitors SSRIs, serotonin-norepinephrine reuptake inhibitors SNRIs, monoamine oxidase inhibitors MAOIs, tricyclic antidepressants TCAs, central alpha₂-receptor antagonists, and norepinephrine and dopamine reuptake inhibitors. Antidepressants influence the overall balance of the three neurotransmitters in the brain that regulate emotion, reactions to stress, sleep cycles, appetite, and sexuality. Side effects to monitor for sudden behavioural changes include worsening of depression, withdrawal from normal social situations, agitation, irritability, anxiety, panic attacks, insomnia, aggressiveness, impulsivity, and increased thoughts of suicide. Psychotherapy and pharmacotherapy does decrease the rate of treatment failure. Choice of psychiatrist decreases the likelihood of treatment failure, independent to the number of psychotherapy sessions and antidepressant prescriptions. The effect of health care provider on treatment failure could be

due to the differences in follow-up or clinical skills. Managed care plans do not appear to reduce the intensity or severity of depression treatment, case management do escalate the likelihood for failure of treatment. The primary goal of management of depression is to improve the overall mood of the patient and relieve depression and its symptoms i.e. suicidal thoughts. The secondary target is to find out the underline cause and eliminate or reduce it. The management and treatment of depression is a two way approach as discussed earlier i.e. treatment by pharmacotherapy and psychotherapy. Monitoring is required for sudden mood changes, suicidal tendencies. The care plan for depression will be directed towards pharmacologic treatment initially followed by an assessment of the condition after some period of time. Finding the underline cause and its treatment is essential as the condition is normally the outcome of an underlining cause. Major depression needs pharmacotherapy and psychotherapeutical approach. It will be helpful to educate the patient and care givers about the condition and how to cope with it along with effective pharmacological therapy for the problem.

Conclusion

In a nutshell, further researches on depression can help the health care professionals to deal with it, as well as studies on pharmacotherapy options will help the health care providers to select the treatment options such as pharmacological approach and psychotherapy which will prevent the recurrence of depression. A pharmacist can play an important role not only in spreading health awareness about depression but also in the selecting the pharmacotherapy and performing educational interventions such as patient counseling.

References

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