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BREAKING THE CHAINS OF DEPRESSION: INNOVATIVE STRATEGIES FOR TREATMENT, ADHERENCE, AND WELL-BEING

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Abstract
Observational studies suggest that there is increasing prevalence rate through worldwide and it has an estimated recurrence risk of 50% probably due to modern life styles and dietary habits. Urolithiasis is a condition of formation of stones (or)caliculi in urinary bladder and or urethra which is characterised by extreme pain in ureter that radiates from flank to the groin or to the genital area and inner thigh. The renal or ureteral stones are of different types based on its mineral composition. The most common stones are struvite, calcium oxalate, urate, cystineand silica. Depending on the type and size of stones physician conclude the type of surgery. An in-depth comprehension regarding urolithiasis is required to provide treatment to the patient. There are several pharmacological and surgical management methods to treat the urolithiasis. Surgical methods include ureteroscopy, SWL (shock wave lithotripsy), ESWL(extracorporeal shockwave lithotripsy), PCNL(percutaneous nephrolithotomy) and Pharmacological treatment includes Analgesics, Alpha-1 adrenergic receptor antagonists.

***Keywords*:** Urolithiasis, Struvite, Ureteroscopy, ESWL, SWL,PCNL, Analgesics

Introduction

Definition: Depression, commonly referred to as "major depressive disorder" (MOD) or "clinical depression," is the most prevalent mental illness. It is typified by a persistently poor mood and a loss of interest in activities, which significantly impairs day-to-day functioning.

Epidemiology

The World Health Organization (WHO) estimates that over 322 million people worldwide suffer from depression, a prevalent mental disorder [1]. One of the main contributors to the burden of disease and the major cause of non-fatal health loss globally is depre ssion. According to the WHO, depression will rank as the second largest cause of death globally by 2020 and the fourth leading cause of disability globally. Any age of life can experience depression, including newborns, kids, teens, adults, expectant mothers, and elderly people. Depression is more common in the 18–30 age group and among the older generation (those over 65). Depression has a significant economic impact on the world and has been ranked by the WHO as the third leading cause of illness burden since 2008. By 2030, it is predicted to top the list. The etiology of depression includes cardiac disorders, diabetes, rheumatoid arthritis, cancer, thyroid conditions, chronic pain, strokes, heart attacks, Parkinson's disease, Alzheimer's disease, and systemic lupus erythematous [2]. Depression is a prevalent and severely incapacitating illness in the elderly [3]. Among the most prevalent and serious mental illnesses worldwide is Major Depressive Disorder (MDD). Persistent melancholy, diminished interest or pleasure, low energy, poorer eating and sleep, and even suicide are its hallmarks, which interfere with everyday tasks and psychosocial processes [4, 5].

Various forms of depression include Major Depressive Disorder (MDD) and When five or more of the classic symptoms of depression are present, major depressive disorder, also known as unipolar depression, is defined by distinct episodes lasting at least two weeks, marked by distinct alterations in affect, cognition, neurovegetative

functions, and inter-episod remissions. This illness cripples the ability to work, sleep, learn, eat, and experience life in general [6, 7]. Dysthymia, or persistent/chronic depression Chronic depression, also referred to as persistent depression or dysthymia, is a persistent long-term/chronic form of depression characterized by mild depressive episodes and at least two other depressive symptoms that persist for at least two years and substantially disrupt daily activities, relationships, education, and employment. Losing interest in everyday tasks, feeling useless or hopeless, being unproductive, having low self-esteem, and feeling inadequate all at once are possible outcomes. Intervention TRD, or resistant depression Up to 50% to 60% of patients with MDD do not experience adequate response after antidepressant treatment, a condition known as treatment resistant depression (TRD), which is defined as a persistent and prolonged inadequate response to at least one antidepressant of appropriate doses and duration [8,9].

Affective episodes are the initial sign of diagnosable psychiatric illness in primary depression (PD), a disorder in which there is no prior history of psychiatric disorders other than cyclothymic personality disorder or affective illness.

Secondary Depression (SD): A person with secondary depression has one or more pre-existing, non-affective mental disorders or a life-threatening or incapacitating physical condition that precedes and mirrors the symptoms of depression [10,11].

PsyD, or psychotic depression A severe depressive illness accompanied by psychosis, such as hallucinations (hearing a voice telling you that you are no good or worthless), delusions (such as intense feelings of worthlessness, failure, or having committed a sin), and disconnection from reality, is known as psychotic depression, a subtype of major depression [6].

PMDD stands for premenstrual dysphoria disorder. The symptoms of premenstrual dysphoric disorder (PMDD) include severe depression, a cluster of affective, behavioral, and physical symptoms, tension, and irritability. These symptoms often appear 5–11 days after the luteal phase of the monthly menstrual cycle [12, 6]. Depression after childbirth (PPD) A lengthy period of emotional disturbance, coinciding with significant life changes and an increase in duties for caring for a newborn infant, is the hallmark of postpartum depression (PPD), a serious mental health issue [6,13].

SAD, also known as seasonal affective disorder, Major depression that occurs during a specific season or time of year is known as seasonal depression. It usually begins in late fall and early winter and ends in the spring and summer [6]. Depression Undercover (MD) According to one theory, masked depression is an unusual form of depression in which the underlying affective disease is concealed by somatic symptoms or behavioral abnormalities [14].

Pathophyisiology [15]

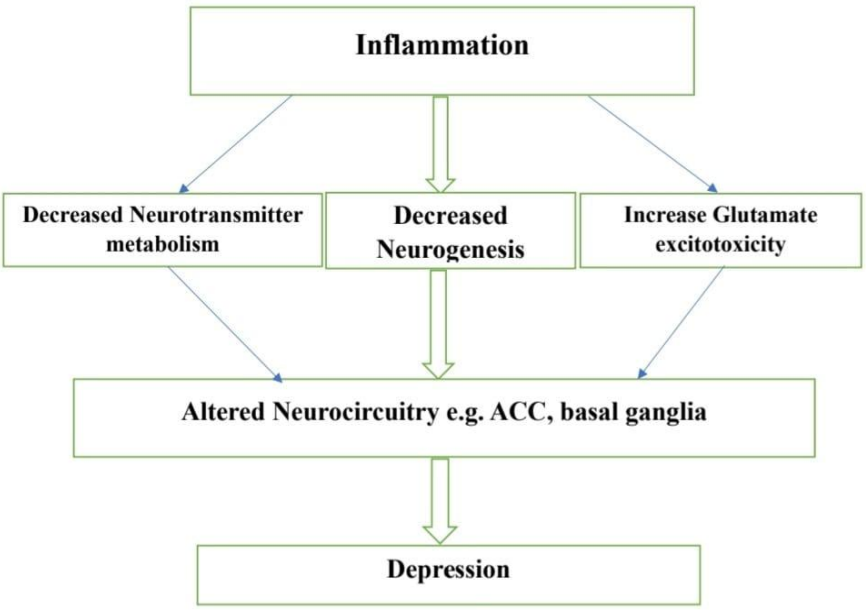

Fig 01: Pathophysilogy of Depression

Medication

Personalized pharmaceutical, psychological, and lifestyle treatments are used to treat depression, depending on the patient's preferences, underlying causes, and severity.

Pharmaceutical Intervention These are drugs that aid in the regulation of neurotransmitters in the brain.

A. Antidepressants

1. **Selective Serotonin Reuptake Inhibitors (SSRIs):** Examples include sertraline, fluoxetine, paroxetine, and escitalopram.
    - **Mechanism:** Increases brain levels of serotonin.
    - **Side effects:** Sexual dysfunction, headaches, nausea, and insomnia [15].
2. **Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs):** Examples include duloxetine and venlafaxine.
    - **Mechanism:** Increases serotonin and norepinephrine levels.
    - **Side effects:** Dizziness, perspiration, and elevated heart rate [16].
3. **Tricyclic Antidepressants (TCAs):** Examples include amitriptyline, imipramine, and nortriptyline.
    - **Mechanism:** Prevents the reuptake of norepinephrine and serotonin.
    - **Side effects:** Weight gain, sedation, and dry mouth [17].
4. **Monoamine Oxidase Inhibitors (MAOIs):** Examples include phenelzine and tranylcypromine.
    - **Mechanism:** Blocks monoamine oxidase, which is responsible for the breakdown of serotonin and norepinephrine.
    - **Side effects:** Risk of hypertensive crisis (avoid tyramine-rich foods) [18].
5. **Atypical Antidepressants:** Examples include mirtazapine and bupropion (dopamine or epinephrine reuptake inhibitor).
    - **Side effects:** Changes in appetite and sleep patterns.
6. **Supplemental Medications:** Antipsychotics (e.g., aripiprazole), mood stabilizers (e.g., lithium), or anxiolytics are occasionally prescribed for severe or resistant depression [16].

B. Non-Pharmacological Treatments

1. **Psychotherapy (Talk Therapy):**
    - **Cognitive Behavioral Therapy (CBT):** Helps patients develop coping mechanisms by altering negative thought patterns [19].
    - **Interpersonal Therapy (IPT):** Addresses relationship problems that contribute to depression [20].
    - **Psychodynamic Therapy:** Explores unconscious conflicts caused by past experiences [21].
    - **Mindfulness-Based Cognitive Therapy (MBCT):** Combines CBT approaches with mindfulness meditation [22].

C. Lifestyle and Behavioral Modifications

1. **Regular Physical Activity:** Enhances mood, reduces stress, and releases endorphins.
2. **Healthy Diet:** B vitamins, high-protein foods, and omega-3 fatty acids (found in nuts and seafood) support brain function [23].
3. **Adequate Sleep:** Avoiding screen time before bed and practicing good sleep hygiene can alleviate symptoms [24].
4. **Avoiding Drugs and Alcohol:** Substance use can exacerbate depression symptoms [25].
5. **Support System:** Speaking with loved ones or joining support groups [26].

D. Alternative and Complementary Therapies

1. **Electroconvulsive Therapy (ECT):** Used for severe, treatment-resistant depression. Involves electrically stimulating the brain under sedation [27].
2. **Transcranial Magnetic Stimulation (TMS):** Uses magnetic fields to stimulate brain nerve cells [28].
3. **Light Therapy:** Effective for seasonal affective disorder (SAD) [29].
4. **Natural Remedies:** St. John's Wort and omega-3 supplements (should be taken with caution).
5. **Yoga and Meditation:** Aid in stress reduction and emotional balance [30].

Medication Compliance

Definition

Medication adherence refers to the extent to which a patient takes their medications as prescribed, including taking the correct dose at the right time and for the recommended duration (40). It is crucial for ensuring therapeutic effectiveness [31].

Importance of Medication Adherence

1. **Better Disease Control:** Ensures effective management of chronic conditions like depression, diabetes, and hypertension, preventing disease progression [32].
2. **Prevention of Complications and Relapse:** Skipping doses can lead to severe complications, increased symptoms, or relapse in conditions like depression, epilepsy, and cardiovascular diseases [33].

3. **Reduced Mortality Rates:** Medication adherence improves survival rates, particularly in chronic conditions such as diabetes and heart failure [34].
4. **Lower Healthcare Costs:** Poor adherence increases ER visits, hospitalizations, and medical expenses.
5. **Minimized Polypharmacy Risks:** Non-adherence may lead to unnecessary drug additions, increasing adverse effects and medication burden [35].
6. **Enhanced Mental and Emotional Health:** Ensures stability, reducing stress and anxiety [36].
7. **Support for Public Health Efforts:** Prevents drug-resistant strains in diseases like HIV/AIDS and tuberculosis [37].
8. **Efficient Use of Healthcare Resources:** Reduces strain on clinics and hospitals.
9. **Optimized Medication Efficacy:** Many drugs require stable blood levels for effectiveness; missing doses may lead to treatment failure.
10. **Stronger Patient-Physician Relationship:** Improves communication and treatment planning.

Prescribing Schema

A structured treatment plan is essential for managing depression. Prescription trends are influenced by patient demographics, comorbidities, physician preferences, and clinical guidelines.

Factors Influencing Prescription Behaviour

1. **Severity of Depression:** Mild cases may require psychotherapy alone, while moderate to severe cases typically require medication.
2. **Comorbidities:** Anxiety, bipolar disorder, and chronic illnesses necessitate tailored regimens [38].
3. **Patient Characteristics:** Age, gender, genetics, and lifestyle influence drug selection [39].
4. **Clinical Guidelines:** Organizations like NICE and APA provide treatment recommendations.
5. **Side Effect Profile:** Medications are selected based on tolerability and adherence rates [39].
6. **Economic and Healthcare System Factors:** Cost, availability, and insurance coverage impact prescription choices.
7. **Physician Experience and Preference:** Clinical training and awareness of emerging therapies affect prescribing patterns [40].

Challenges in Prescription Practices

1. **Non-Adherence:** Stigma, side effects, and delayed therapeutic effects lead to discontinuation (41).
2. **Polypharmacy and Drug Interactions:** Multiple medications increase adverse event risks.
3. **Overprescription/Underprescription:** Some patients receive excessive long-term treatment, while others are undertreated due to poor medication selection [42].
4. **Limited Access to Mental Healthcare:** A shortage of mental health specialists affects treatment accessibility.

Quality of Life (QoL) in Depression

Depression significantly affects an individual's quality of life by impairing physical and emotional health, social relationships, and overall life satisfaction.

Factors Affecting QoL in Depression

1. **Symptom Severity:** More severe symptoms reduce daily functioning and productivity.
2. **Medication Adherence:** Consistent use of antidepressants improves QoL, while non-adherence exacerbates symptoms [43].
3. **Support and Therapy:** Strong social networks and therapies like CBT enhance well-being (44).
4. **Lifestyle Modifications:** Regular exercise, a nutritious diet, and good sleep hygiene contribute to improved mood and QoL [45].
5. **Comorbid Conditions:** Chronic illnesses and substance use disorders worsen depression and QoL (46).

Enhancing QoL for Depression Patients

1. **Early Detection and Intervention:** Timely treatment reduces long-term impairment (47).
2. **Patient Education:** Awareness promotes adherence and help-seeking behavior [48].
3. **Support Systems:** Emotional and social support strengthen resilience and mental health.
4. **Holistic Approaches:** Combining medication with lifestyle and psychological interventions maximizes overall well-being.

Conclusion

Depression is a multifaceted mental health disorder that affects individuals of all ages, contributing significantly to the global burden of disease. Effective management requires a combination of pharmacological and non-pharmacological interventions, adherence to prescribed medications, and lifestyle modifications. Addressing challenges such as medication non-adherence, polypharmacy, and healthcare accessibility is crucial for improving treatment outcomes. A comprehensive, patient-centered approach that integrates early detection, proper medical intervention, and psychological support can enhance the quality of life for individuals with depression. Future research should focus on refining treatment strategies, reducing stigma, and increasing accessibility to mental healthcare to ensure better clinical and social outcomes for affected individuals.

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All authors are contributed equally.

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