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# A REVIEW OF THE EFFECTIVENESS AND EFFICACY FOR DEPRESSION

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**ABSTRACTS**

Antidepressants are drugs used for the treatment of depression, some anxiety disorders, some chronic pain conditions, as well as to assist in dealing with substance abuse, the side effects of antidepressant medications have dry mouth, weight gain, dizziness, headaches, and sexual dysfunction in men, and to a blunting of emotional. There is a small increased risk of suicidal thoughts and behavior as it is to be taken by children, adolescents, and young adults. A discontinuation syndrome can occur after stopping any antidepressant which resembles recurrent depression. Anti-depressant drugs are the ones that have the ability to alleviate the symptoms of depression. Although they do not cure the disorder, but it can give you relief from your symptoms. The use of these drugs without the prescription of Psychiatric, drug overdose, which may cause adverse reactions, in some cases, even death can occur. In this way, we can obtain the use of these resources to the limit, to the proposal from the doctors only.

**KEYWORDS:** Antidepressant, anxiety, depression, disorder, Neurotransmitter, Symptoms.

## INTRODUCTION

Depression can also be defined in terms of a state of feeling sad. It can also be defined as a psychoneurotic disorder characterized by the spirit, and the functional activity of grief, which is a decrease in the activity, difficulty in thinking, loss of concentration, and of the disturbances in appetite, sleep problems and feelings of depression and despair, and the people of it.[1] This is a very common and recurrent condition that causes significant morbidity and mortality throughout the world. Depression, mental illness, don't have the thrill of grief, that can have an impact on the whole process of thinking, behavior and feelings. These people have the last Period is the ability to go to sleep, and go to sleep.[2] Several workers have described the causes of depression, including genetic heterogeneity, and the parents 'behavior in the two brothers, and one sister, neglect, physical abuse, and sexual abuse.[3] In addition, a number of conditions, such as problems at work, in relationships, natural disasters, the economy, and the birth of a child, catastrophic personal injury, loss of life, the near and the dear ones, and for the menopause. It is a well-known fact that the different portions of the brain can start at the beginning of the variance in symptoms of depression in the regulation of emotions, and the neural circuits, and the spirit of the lord. Depression is a common and recurrent disease, which accounts for significant morbidity and mortality throughout the world.[4] Clinical depression affects about % of the population in the world, and theleading cause of disability in the world and, in terms of the total number of years lost due to disability). After a first episode of major depression, 22% of the patients who continue to have symptoms after one year and a maximum of 85 per cent had two or more episodes of, in spite of active treatment. The more and more frequent episodes, being single, having a low income, and age, any worsening of the prognosis.[5] Antidepressant drugs are effective and available treatment options that can alleviate suffering and prevent the reoccurrence of the symptoms. They are recommended as first-line treatment option, moderate, and severe depression, whether mild or subthreshold depression, which has been in existence despite the fact that the other approaches. Anti-depressants are not a first-line treatment for short term mild or subthreshold depression and / or depression in children and adolescents. This article provides an overview of drug therapy in the treatment of major depressive disorder.[6] The evidence in support of the drug.

Anti-depressants are a class of drugs used for the treatment of the symptoms of depression by correcting

chemical imbalances of neurotransmitters in the brain. Chemical imbalances can also be taken into account for any changes in mood or behaviour. Antidepressant medications are also available in a variety of shapes and forms, but they all work the influence of the bound of neurotransmitters in the brain, such as serotonin and norepinephrine (noradrenaline). Anti-depressants are useful in the treatment of many diseases. They are major depression, dysthymia, anxiety disorder, anxiety disorder, obsessive-compulsive disorder, eating disorders, chronic pain, neuropathic pain and, in some cases, dysmenorrhoea, snoring, migraine, attention-deficit hyperactivity disorder (ADHD), substance abuse, and sleep disorders. They can be used alone or in combination with any other medications (Antidepressants play an important role in the treatment of people with moderate-to-severe depression.[7] Although antidepressants may not cure depression, they can reduce symptoms. The primary anti-depressant drugs, try to apply during the initial phase of the treatment. If, however, it does not alleviate the symptoms, causes, and negative impacts on the individual. So, first of all, we need to find the right anti-depressant drugs, on the basis of the symptom and the cure of the condition of the patient. Spectrophotometric and chromatographic methods have been developed for the determination of the antidepressant drug suspired (of the CITY) that is present in the pharmaceutical formulation and the plasms.[8]

## CLASSIFICATION

There are many anti-depressant drugs, which are available on the market. The most important role is being played by the period of time that is required to be a consequence of the drug, the individual, that is, the reaction of a drug can be defined in this course.[9] The most common anti-depressants, has been a

- Selective serotonin re-uptake inhibitors (SSRIs)
- Serotonin and norepinephrine re-uptake inhibitors (SNRIs)
- Monoamine oxidase inhibitors (MAOIs)
- Tricyclic antidepressants (TCAs)
- Tetracyclic antidepressants
- Serotonin receptor modulators (SRMs)
- Lithium Salts

## PHARMACOLOGY

It is the first, and probably most widely accepted scientific theory of antidepressant action is the monoamine hypothesis (which can be traced back to the mid-1950s), which says that the depression is due to an imbalance (most often a deficiency) of the monoamine neurotransmitters (including serotonin, norepinephrine, and dopamine).[10] It was originally intended to be based on the observation that certain hydrazine anti-tuberculosis agents produce antidepressant effects, which was later linked to their inhibitory effects on monoamine oxidase, the enzyme that catalyzes the breakdown of the monoamine neurotransmitters. All currently marketed antidepressants have the monoamine hypothesis as their theoretical basis, with the possible exception of agomelatine which acts on a dual melatonergic-serotonergic pathway.[11] In spite of the success of the monoamine hypothesis it has a number of limitations: for one, all monoaminergic antidepressants have a delayed onset of action for at least a week, and in the second place, there is a significant proportion (>40%) of depressed patients that do not respond to monoaminergic antidepressants. A number of alternative hypotheses have been proposed, including the glutamate, neurogenic, epigenetic, cortisol hypersecretion and inflammatory hypotheses.[12]

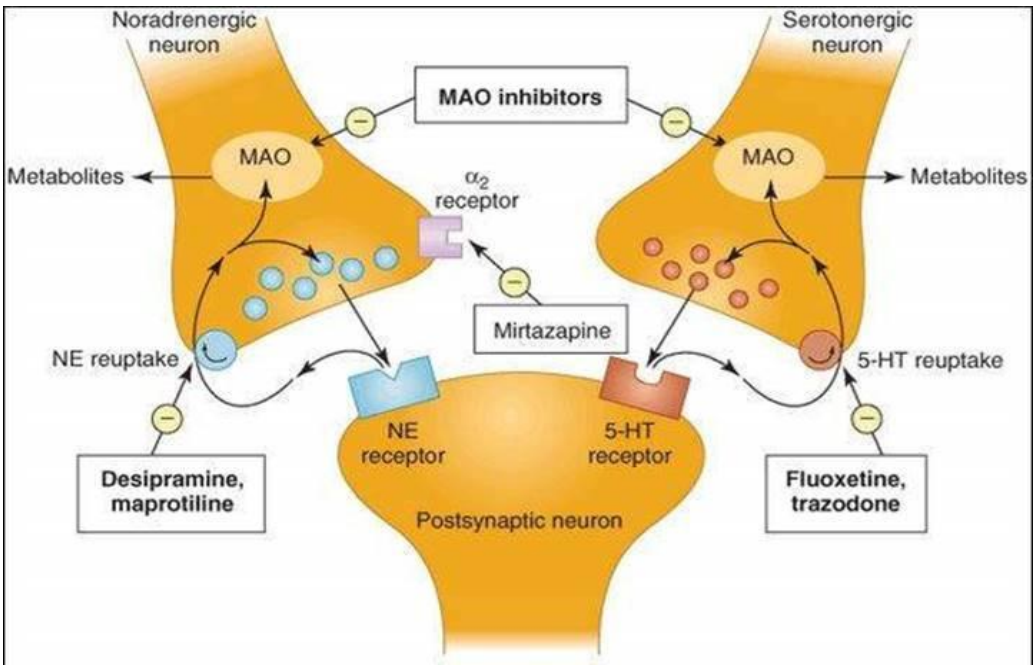



**Fig. Pharmacology of antidepressant drug.**

**Example of Antidepressant Drugs**

**Desvenlafaxine**

Desvenlafaxine is an active metabolite of venlafaxine, an SNRI, which is approved by the u.s. Food and Drug Administration (FDA) for the treatment of DEPRESSION in adults (2009). It is given as,

**MECHANISM OF ACTION**

Desvenlafaxine provides a selective re-uptake inhibition of serotonin (5-HT), and the norepinephrine (NE) transporters, which results in an increase in the extracellular concentration of 5-HT and that's GREAT. The higher the affinity for 5-HT transporters were observed in comparison with the NE trucking companies (about 10 times), with a much weaker affinity for the dopamine transporters (dat-files). However, there is no functional impact on the levels of concentrations it is essential for the inhibition of 5-HT, and NE transporters for its anti-depressant effects. Desvenlafaxine also the influence of the hypothalamus is an important regulator of biological functions, such as mood, sleep, the cycle of life, and the stress response, sexual behavior, temperature, and pain sensations. In the absence of a significant affinity for numerous receptors, including muscarinic cholinergic, histaminergic, and the α1-adrenergic receptors, and monoamine oxidase inhibitors (MAO-a) receptors, and, if necessary, in order to reduce the to reduce the risk of unwanted side effects related to the impact of other sites.[12,13]

**DOSAGE**

Desvenlafaxine is available in 50 -, and 100-mg tablets. It is recommended that the dosage of the desvenlafaxine 50 mg/day). In patients with impaired renal function, the dose up to 100 mg/day) it is not recommended. In patients with moderate and severe renal insufficiency, the maximum of the the dose of 50 mg/day to 50 mg every other day.[16]

**PHARMACOKINETICS**

The bioavailability of desvenlafaxine is approximately 80% after oral administration and the peak plasma concentrations the concentration (Tmax) is seven-and-a-half hours after oral administration. It can be taken as without the food, as the food doesn't appear to have a clinically significant difference.[15] It is extensively metabolized by the word endings, and, to a lesser extent, due to oxidation by CYP3A4. Findling et. All told, a linear increase in the Cmax and Area Under the Curve (AUC) increase in a dose of desvenlafaxine for the kids.[18]

**Clinical use**

The efficacy of desvenlafaxine for MDD has been established in several rcts and open-label studies of adults. It can improve the quality of life, as measured by an improvement in the mood, social relations, daily life, leisure activities, economic status, and physical movement. In patients with liver disease, relieves the symptoms of depression. In a case report of a patient with social anxiety disorder, the dose of 100 mg/day), which resulted in the salvation of god out of all of the symptoms. In an open study to assess the efficacy of desvenlafaxine below the children (aged 7-11 years) and adolescents (ages 12 to 17 years of age). In the dose range of 50 to 200 mg) was use in children (10 to 100 mg/day) and young (25-200 mg/day), as well as a positive response. Higher doses were associated with an increase in the incidence of treatment-emergent adverse reactions Power.[19]

**Vortioxetine**

Vortioxetine was approved for the treatment of MDD in 2013 by the FDA. It contains beta polymorph of vortioxetine hydrobromide is administered as an immediate-release tablets.

**Mechanism of action**

Vortioxetine exert their therapeutic effects by means of a multi-modal activity, with a modulation of the The 5-HT) receptors and inhibition of 5-HT transporters. It is the anti-depressant action vortioxetine is mediated by antagonistic effects on the 5-HT3, 5-HT7 and 5-HT1D receptors, partial agonist activity at the 5-HT1B receptor agonist effects at the 5-HT1A - one of the receptors, and the inhibition of the 5-HT transporter. In addition, the modulatory effect of 5-HT the beta-adrenergic receptors and transporters, and the increase in the extracellular concentration of a wide variety of neurotransmitters, such as dopamine, histamine, norepinephrine, and acetylcholine. The Standard dose of SSRI and SNRI medications, with an 80% occupancy of the serotonin the transporter (SERT) has been achieved; however, the 5 mg vortioxetine is more than 40% of the CC! which suggests that other pharmacological activities. In healthy volunteers, the serotonin the vortioxetine was of the order of 50% for 5 mg / day, and 65% for the 10 mg, and >80% at 20 mg. Series negative feedback is a reaction to the long-term SERT blockade decreases extracellular 5-HT the concentration and attenuated the activation of 5-HT1A and 5-HT1B auto-receptors on the serotonergic system. The partial agonistic effect of vortioxetine at 5-HT1B autoreceptor activity, and, in turn, increases the serotonin synthesis and release. Complete agonistic effect of vortioxetine on 5HT1A receptors, in order to normalize the secretion of serotonin by the most likely mechanism for the rapid desensitization of the 5HT1A auto-receptors. In the dark effect it is a 5-HT3 receptor, and inhibits GABA-mediated inhibition from the interneurons, which are with the increase in the extracellular concentration of serotonin. Also, the blockade of 5-HT7, and 5HT1D receptors, it has been shown that the efficacy of antidepressants in an animal study. The 5-HT system it will have a positive effect on mood, affect, and cognition. Vortioxetine modulates to the key of the neurotransmitters that are involved in the cognitive regulation, such as glutamate, acetylcholine, histamine, dopamine, and norepinephrine (noradrenaline).[20,21,22]

**Dosage**
Vortioxetine is also available as a 5 -, 10 -, and 20-mg tablets). It can be started on 10 mg once a day the dose may be increased to 20 mg, which is based on tolerance and clinical response.

**Levomilnacipran ER**
Levomilnacipran ER, 1S, 2R- milnacipran, is an SNRI approved by the FDA for the treatment of MDD in adults.

**Mechanism of action**
All snris can inhibit the re-uptake of 5-HT and NE, with a difference of potential of the carriers, and the resulting clinical implications. Levomilnacipran is a it is, relatively speaking, the more active enantiomer of the racemic milnacipran. It has been two-fold, the greater the potential for norepinephrine relative to serotonin reuptake inhibition, and a time to inhibit the noradrenaline re-uptake, as compared with duloxetine, venlafaxine, and desvenlafaxine. In the absence of the effects on other receptors, ion channels, or transporters in vitro, were tested, including the serotonergic (5HT1-7), and α - and β - adrenergic, muscarinic or histaminergic receptors, and Ca2+, Na+, K+ Ca channels.[23,24,25]

**Dosage**
Levomilnacipran is an expression, which is a once-a-day dosing. It is recommended that the dosage of the range of levomilnacipran is 40-120 mg/day). The starting dose is 20 mg /day), and can be increased up to 40 mg/day, and for a couple of days. The dose may be titrated in increments of 40 mg each and every one of two or more of the.[26]

**Pharmacokinetics**
Levomilnacipran is well-absorbed after oral administration with a bioavailability of 92%.

The average time taken to reach the maximum plasma concentration is between the ages of six and eight hours of oral the management has one of the binding proteins of 22%. Food does not affect the oral bioavailability of levomilnacipran. It is extensively metabolized by CYP3A4, with minor involvement of other parts of the CYP450 system. It has an elimination half-life of approximately 12 hours per renewal in patients with impaired renal function.[27,28]

**Clinical use**
The effects of levomilnacipran of the MDD, and the overall effect is to have a set of five randomized clinical trials in adults, at doses of 40-120 mg/day). In an RCT by Gommoll etc. if there was a the improvement in depressive symptoms, but this did not reach statistical significance. Asnis et all of it. (2013) found a higher response rate, 80 mg, and 120 mg / day dose, in comparison with 40 mg.[29,30]

**ADVERSE EFFECTS**
Anti-depressants can cause a variety of negative effects, depending on the person and the drug in question.

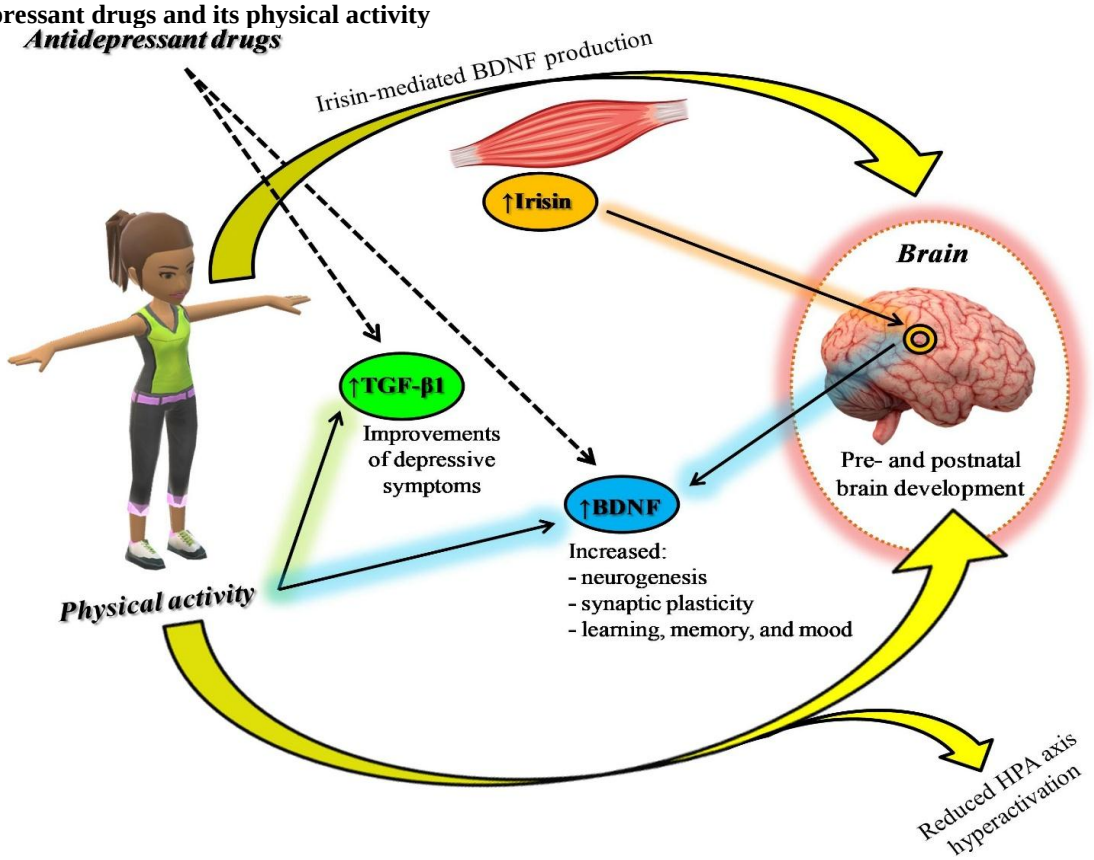
Almost all of the drugs that are involved with serotonin regulation has the potential to cause serotonin toxicity (also known as serotonin syndrome) — an excess of serotonin that can cause a mania, restlessness, agitation, emotional lability, insomnia and confusion as the main symptom. Also, if the condition is serious, it is not particularly common, generally only appearing at high doses or with other drugs. Based on the premise that the right to medical treatment, that are taken into account (within 24 hours) it is rarely fatal. Antidepressant medicines may increase your risk of diabetes by about 1.3 fold.

Mao inhibitors are likely to have pronounced (sometimes fatal) interactions with a wide range of medicines and over-the-counter medications. If it is taken along with the food, which is a very, very high levels of tyramine (e.g., mature cheese, cured meats, or yeast extracts), which can cause a potentially lethal hypertensive crisis. At lower doses, the person may only experience a headache due to an increase in blood pressure.

In response to these adverse effects, a different type of maoi has been developed: the reversible inhibitor of monoamine oxidase-A (RIMA) class of drugs. Their main advantage is that you don't have to be the person to follow a special diet, as they claim to as effective as ssris and tricyclics in the treatment of major depressive disorder.[31,32,33]

**USES OF ANTIDEPRESSANT DRUG**
- Anxiety disorder.
- Obsessive compulsive disorder (OCD)
- Panic disorder.
- Serious phobias, such as agoraphobia and social phobia.
- Bulimia.
- Post-traumatic stress disorder (PTSD

**Antidepressant drugs and its physical activity**




## CONCLUSION

Although its anti-depressant medications in the treatment of disorders, such as depression, but they have side effects too. At the doctor's suggestion, it is better to use it within the limits and for the use of the right drug for the symptoms to be reduced.

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