

A Review on Antidepressant Effect of Medicinal Plants

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Abstract:

Depression is a heterogeneous group of brain disorders characterized by a wide range of symptoms that result in psychomotor and cognitive impairments. Depression is accompanied with loss of pleasure or interest, feeling of guilt, decreased energy and low self worth. Depression is also a major cause of morbidity worldwide, estimated to affect 350 million people. It is highly prevalent, accounting for more disability than any other disorder and its prognosis and management are also poor due to the little understanding of the disorder. Many categories of synthetic and natural compounds have been reported to possess neuropsychiatric activity. Various adverse effects are associated with synthetic drugs which are used in the treatment of depression. Loss of libido, tolerance, physical dependence and insomnia is associated with selective serotonin (5 HT) reuptake inhibitors and tricyclic antidepressants; several drug-drug interactions may occur. The aim of this review is to enlist those plants which have antidepressant activity.

Key Words: Depression; Neuropsychiatric disorder; CNS related disorder Antidepressant; Medicinal plant

INTRODUCTION:

Depression

Sadness and grief are normal human emotions. Everyone have such feelings from time to time, but it goes away within a few days but major depression is something more. It's a period of overwhelming sadness. Depression is a common mental disorder that is accompanied with decreased energy, loss of pleasure or interest, guilt feeling, disturbed sleep, unable to concentrate, disturbed sleep, low self worth and depressed mood. [1] Depression is an etiologically heterogeneous group of brain disorders characterized by a wide range of symptoms that reflect alterations in cognitive, psychomotor and emotional processes. [2] Moreover, depression often accompanied with symptoms of anxiety. These problems can become chronic or recurrent

which can also lead to substantial impairments where an individual's cannot take care of his or her day to day responsibilities. [3] It is a disorder of major public health importance, in terms of its prevalence and the suffering, dysfunction, morbidity, and economic burden. Depression is more common in women than men. [4] At its worst, it can lead to suicide. Due to suicide almost 1 million lives are lost annually, which counts to 3000 suicide deaths every day. Today, 350 million people is estimated to be affected by depression. According to the World Mental health survey which is conducted in 17 countries, it is found that on an average about 1 in 20 people are having an episodes of depression in the previous year. Suicide is the major consequence in most of the depressive illnesses. About 60% deaths are due to depression and related disorders. [5] Depression is induce by chronic stress and is one of the main triggers even though the mechanism of provoking depression is not clearly established. [6] Depression is a common chronic and potentially debilitating form of psychiatric disorders. It occurs in person of all gender with no age limit and backgrounds. Although unhappiness is usually a normal human experience, it differs from clinical depression in both duration and severity. It is more common in female than male. Any form of stressful life event is considered as the initial sign of depression, thereby depression is often thought as a stress related disorder. [7] Pathogenesis of depression is contributed by the experience of human stress, and it may also play in the severity and recurrence of this debilitating illness. [8] According to the World Health report, approximately 450 million people suffer from a mental or behavioral disorder. This amounts to 12.3% of the global burden of disease, and will rise to 15% by 2020. [9] It has suggested that it will be the second leading cause of death by the year 2020 because of its high prevalence of suicide in depressed patients coupled with complication arising from stress and its effects on the cardiovascular system. Depression is associated with a serious impairment of marital, occupational functioning and social as well as prominent personal and interpersonal distress. [10] Depression can be treated by antidepressants, Transcranial magnetic stimulation (TMS) and Light therapy may relieve depression symptoms in the winter time and Talk therapy called psychotherapy other treatments for depression are Electroconvulsive therapy (ECT). Many categories of synthetic and natural compounds have been reported to possess neuropsychiatric activity. Various adverse effects are associated with most of the synthetic drugs used in the treatment of depression. Loss of libido, insomnia, tolerance and physical dependence with selective serotonin (5 HT) reuptake inhibitors and tricyclic antidepressants are very common; several drug-drug interactions may occur. [11]

Plants possess antidepressant activity:

Medications of plant origin are attaining popularity and are explored for a number of diseases, including CNS related disorders like depression.

ANTIDEPRESSANT ACTIVITY OF SOME MEDICINAL PLANTS

Foeniculum Vulgare:

Foeniculum Vulgare (Fennel) Fruit is known as "Saunf" in hindi and "Madhurika" in Sanskrit. *Foeniculum vulgare* has been scientifically proved to possess various pharmacological activities, which include antidiabetic, antioxidant, hepatoprotective, antifungal, antimicrobial, antithrombotic, antispasmodic,

antiosteoporotic and toxicology. *Foeniculum vulgare* is monoamine inhibitor and the previous evidences indicate that monoamine inhibitors increase the level of norepinephrine, serotonin and dopamine in brain. The present study was undertaken to investigate the effects of methanolic extract of *Foeniculum vulgare* fruit on depression using force swim test in rats, potentiation of norepinephrine toxicity in mice and haloperidol induce catalepsy in mice and proves that the methanolic extract of *Foeniculum vulgare* possess significant antidepressant activity due to its reduction in the immobility period in FST and reduction in the duration of catalepsy in haloperidol induce catalepsy. [12]

Spirulina Platensis:

Spirulina Platensis (SP) is a type of fresh-water blue-green algae which grows naturally in warm climate countries and has been considered as supplement in human and animal food. They have been found to be rich source of minerals, essential fatty and amino acids, vitamins - especially vitamin B12 and antioxidant pigments such as carotenoid. In addition, several studies showed that *Spirulina* species exhibit various biological activities such as anti-inflammatory, antitumor, hepatoprotective, radio protective, antimicrobial, strengthening immune system, metalloprotective and antioxidant effects. The present study is carried out to evaluate the antidepressant activity of *Spirulina platensis* and confirm the antidepressant activity of *Spirulina platensis*, since it reduced the immobility in both FST and TST. In the present study, SP significantly increased the frequency of 5-HTP induced head twitches, Clonidine induced aggression and L-DOPA induced hyperactivity and aggressive behavior indicating its enhanced activity on serotonergic, noradrenergic and dopaminergic pathways respectively. [13]

Phyllanthus Amarus:

Phyllanthus mentioned in traditional medicine. In Ayurveda *Phyllanthus amarus* is a reputed drug. In traditional medicine it is used to treat various nervous disorders. It is also used as a stomachic, a digestive; rejuvenate, for promoting memory and intellect, for skin disorders, and as an antiepileptic, antipyretic, and analgesic. All parts of the plant are employed therapeutically. In western parts of India it was used as acidity of the urine and diuretic in gonorrhoea. The root along with rice water was a remedy for menorrhagia. In chronic dysentery the plant along with fenugreek was given. It was found that mainly as weed in waste lands, agricultural lands and riverbanks. The present study evaluates the antidepressant effects of *Phyllanthus amarus* and concludes that alcoholic extract of *P. amarus* has antidepressant property at doses of 50 and 100 mg/kg. [14]

Passiflora Foetida:

Passiflora foetida, popularly known as stinking passion flower, is an herbaceous climber that has been widely used in Mexican traditional medicine for the treatment of different central nervous system (CNS) disorders. In this work, the effects of methanolic extract of leaves of *P. foetida* (PF) were evaluated in mice using behavioral tests sensitive to clinically effective antidepressant compounds. The present study suggested that PF extracts possessed potential antidepressant effects which could be of therapeutic

interest for using in the treatment of patients with depressive disorders. [15]

Nymphaea Alba:

Among the medicinal plants *Nymphaea Alba* Flower is the most important one which is widely distributed in Asian countries has more medicinal values. *Nymphaea alba*, is an aquatic flowering plant of the family Nymphaeaceae and is commonly known as the European White Waterlily, Nenuphar or White Lotus. The leaves may be up to 30 centimeters in diameter and they take up a spread of 150 cm per plant. The flowers have many small stamens inside and white in color. It contains the active alkaloids nymphaeine and nupharine and is a sedative and an aphrodisiac/anaphrodisiac depending on sources. The present study was undertaken to evaluate the anti-depressant activity of *Nymphaea Alba* flower and confirm that the ethanolic extract of *Nymphaea Alba* flower has shown significant antidepressant activity. [16]

Holoptelea Integri Folia (Roxb) Planch:

In traditional system of medicine, bark and leaves of *Holoptelea Integrifolia* used as bitter, astringent, acrid, thermogenic, digestive, anti-inflammatory, laxative, carminative, anthelmintic, repulsive, depurative, urinary astringent and in rheumatism. The plant *Holoptelea integrifolia* is used traditionally for the treatment of gastritis, inflammation, dyspepsia, colic, intestinal worms, vomiting, wound healing, leprosy, hemorrhoids, diabetes, dysmenorrhoea. The main objective of this work was to evaluate the antidepressant activity of petroleum ether and methanolic extract of *Holoptelea Integrifolia* leaves using forced swim test (FST) and tail suspension test (TST) in mice. The results indicate that petroleum ether and methanol extracts of *holoptelea integrifolia* leaves contained phytosterols and flavonoids which might be active in case of Forced swim test (FST) and Tail Suspension Test (TST) to show antidepressant activity. [17]

Dacus Carota:

The roots of *Dacus Carota* (DC) were selected for evaluating its antidepressant activity due to its traditional use in the management of diarrhoea, acidity, heartburn and ulcers. The plant was reported to possess medicinal values such as antifungal, antibacterial, enzyme protective, hepatoprotective activities. It is a remedy for fever, gonorrhoea, anorexia, dysentery, sores and skin diseases. The present study has been undertaken to investigate the effect of Ethanolic Extract of *Dacus carota* (EEDC) on depression in mice. The result of the present study shows significant antidepressant activity. [18]

Jasminum Sambac:

Jasminum sambac (JS), an evergreen plant belongs to the family of Oleaceae, extensively used in traditional Malay medicine for the treatment of depressive disorders. It possesses immense therapeutic applications like curing mouth infections, weakness of sight, insanity, ulcers, leprosy and skin diseases, as analgesic, anti-inflammatory, antidepressant, antiseptic, aphrodisiac, sedative, antimicrobial, cytotoxic and expectorant. The present study investigates the antidepressant activity of JS and also to evaluate possible mechanisms involved in its antidepressant action. The study concluded that JS produces antidepressant activity and the mechanism involves serotonergic and dopaminergic systems thereby causing generalized increase in the monoamine turnover. [19]

Amaranthus Spinosus:

Amaranthus spinosus Linn., (Amaranthaceae), In Indian traditional system of medicine (Ayurveda) the plant is used as laxative, antipyretic, antileprotic, diuretic, digestive, antidiabetic, bronchitis, anti-snake venom, blood diseases, piles and antigonorrhoeal. Tribal of Kerala, India used juice to prevent swelling around stomach while to cure jaundice the leaves are boiled without salt and consumed for 2-3 days. Methanolic extract of *Amaranthus spinosus* (MEAS) was investigated for antidepressant activity by using Forced swimming test (FST) and Tail suspension test (TST) models and shows antidepressant activity. [20]

Eichhornia Crassipes Linn:

Eichhornia crassipes commonly known as water hyacinth is a free floating perennial aquatic plant belongs to the family of Pontederiaceae. In the traditional medicine of *E. crassipes* used as antispasmodic, nervine tonic, antispasmodic, stimulant, antioxidant, and antidepressant (used in menopausal phase). Several studies on anti-inflammatory activity and antioxidant activity, of *E. crassipes* have been reported. The present study is to investigate the antidepressant activity of aqueous and chloroform extract of *Eichhornia crassipes* plant leaves and shoots were tested by forced swim test (FST) and tail suspension test (TST). The result shows significant antidepressant activity and chloroform extract showed more antidepressant activity than aqueous extract. [21]

Asparagus Racemosus:

Asparagus Racemosus has been referred in Indian traditional medicine system (Ayurveda) for treatment of various diseases. Therapeutic use of *Asparagus racemosus* include cystitis and dysentery, chronic fevers, rheumatism, inflamed membranes of the lungs, Stomach, Kidneys and Sexual organs. It also used as a nervine tonic, Antilithiatic effects, Antioxidant effects, Antineoplastic activity, Antitussive effect, Antidepressant activity. It helps with nervousness, pain, restless sleep, disturbing dreams and people with weak emotional and physical heart. The dried roots of the plant are used as drug. The roots are said to be tonic and diuretic and galactagogue, the drug has ulcer healing effect. It has also been identified as one of the drugs to control the symptoms of AIDS. In the present study extracts of *Asparagus Racemosus* seed studied for its antidepressant activity in animal models of depression and in vitro antioxidant activity concluded that the methanolic extract of *Asparagus racemosus* seeds should possessed the antioxidant and antidepressant activity. [22]

Eclipta Alba:

Eclipta alba (L.) (*E. alba*) is commonly known as bhringraj or false daisy belongs to the Family Asteraceae and is widely distributed throughout China, India, Thailand and Brazil. The leaf extract of *E. alba* is a powerful liver tonic, rejuvenative and hepatoprotective. The extract is also used as anti-venom against snake bites in China and Brazil. The present study was carried out to evaluate the antidepressant activity of *Eclipta alba* leaf extract (EALE) in rats employing tail suspension test (TST) & forced swim test (FST) and concluded that *Eclipta alba* leaf extract possesses antidepressant effect in animal models of depression.

[23]

Cucurbita Pepo:

Cucurbita pepo is a cultivated plant of the genus *Cucurbita*. It includes varieties of gourd and squash. The seeds and pulp of *C. pepo* is used to treat urinarytract problem and gastritis and to remove roundworms and tapeworms from the intestine. Pumpkin is a gourd like squash of the genus *Cucurbita* and the family Cucurbitaceae, has high antioxidative, antidepressive, antihelminthic activity and antimicrobial activity. The alcoholic and aqueous extracts of *C. pepo* on depression induced rats possess significant antioxidant and antidepressant activity. *C.pepo* may be used as a potential resource for natural psychotherapeutic agent against depression. [24]

Nardostachys Jatamansi:

Nardostachys jatamansi is flowering plants belong to the family Valerianaceae, which is a native plant of the Indian and Nepal Himalaya. It is found from 2200m to 5000m asl. in random forms. It is also called as nard, spikenard, muskroot or nardin which is used in the formulation of traditional Ayurvedic medicines as well as modern herbal preparations for curing various ailments. Rhizomes and roots are used as a cardiac tonic, tranquilizer, laxative, nervous headache, for curing vertigo, low and high blood pressure etc. The antidepressant effect of ethanol root extract of *N. jatamansi* in electron beam irradiated mice, has shown a significant reduction in the duration of immobility (in seconds) in Forced Swimming Test and Tail Suspension Test. The whole brain MAO-A and MAO-B activities as compared to the control is decreased by *N. jatamansi* and is the mechanisms behind antidepressant like activity of *N. jatamansi*. [25]

Uncaria Lanosa Wallich Var. Appendiculatarids:

According to Flora of Taiwan, there are three different species of *Gouteng* in Taiwan: *UH*, *UR*, and *U. lanosa* Wallich var. *appendiculata* Ridsd (*UL*). However, In Pharmacopoeia *UL* is not recorded. In traditional Chinese medicine, *Gouteng* is categorized as a herb to extinguish arrest convulsions, wind, clear heat, and pacify the liver. *Gouteng* is mainly used to treat central nervous system ailments including light headedness, convulsions, numbness and hypertension and cardiovascular. Several studies demonstrate that the herb extract mainly acts on neuroprotective effect used to treat antiepileptic, anti-Parkinsonian, anti Alzheimer's disease, anxiolytic, protective action against ischemia-induced neuronal damage, anti-inflammation. In the present study, it aimed to investigate the effect of ULEtOH in FST and TST in mice. ULEtOH exerts antidepressant-like activity. The increase in monoamines levels in the hippocampus, cortex, striatum, and hypothalamus of mice may be related to the antidepressant-like mechanism of ULEtOH. [26]

Pogostemon Cablin:

Pogostemon Cablin (Labiatae) is widely used in traditional Indian medicine as an antioxidant, anti-stress, anti inflammatory and diuretic. In the present study aqueous and alcoholic extracts of PC were evaluated for acute oral toxicity in rats followed by anti depressant activity. Alcoholic extract at the dose of 500mg/kg and 750mg/kg significantly reduced the duration of immobility in forced swimming test and tail suspension test indicating potential antidepressant activity.[27]

Feijoa Sellowiana:

Feijoa sellowiana (Myrtaceae) is native to southern of South America. Owing to its easy adaptability in subtropical regions; nowadays, it is extensively cultivated in many countries and also in Iran where its fruit are very popular. *Feijoa* showed potent antimicrobial and antifungal activity and a sensible activity against *Helicobacter pylori*. Moreover, its antioxidant activities have been reported. It has good nephro protective activity. The present work is to determine the antidepressant activity by modified forced swimming test (FST) and tail suspension test (TST). The studies indicate that *Feijoa* showed significant antidepressant activity. It produced dose dependent effect on both models and this effect is mainly due to inhibition of reuptake of catecholamine's. These results introduced these plants as easily accessible source of natural antidepressant. [28]

Eugenia Caryophyllus:

Eugenia caryophyllus is indigenous to Amboynas and Molucca islands, also cultivated in Sri Lanka, Madagascar, Caribbean islands and India. The plants grow up to a height of 100-150 cm tall and possess tapered leaves. It bears flowers after 7 to 8 years and only after 15 to 20 years of growth a satisfactory yield are achieved. The plant possesses antiepileptic activity, analgesic. The antidepressant activity of flower bud extract of *Eugenia caryophyllus* was designed and carried out in validated animal models. In all the models, depression induced by either stress, chemical, or lack of neurotransmitter amines the aqueous extract of clove buds exhibited a fairly good antidepressant effect. [29]

Cressa Cretica:

Cressa cretica (Convolvulaceae) known as Rudanti is a traditional medicinal plant. This plant has been used for the treatment of a variety of diseases. The plant of *Cressa cretica* showed antibilous, anti-tuberculosis and expectorant, nootropic activities. This study was done to investigate the possible antidepressant effect of *Cressa cretica* plant extract (CCE) using Tail suspension test (TST) & Forced swim test (FST). The results of the present study indicate that CCE possesses significant antidepressant activity. [30]

Hedranthera Barteri:

Hedranthera barteri is a shrub that has been scientifically established for the management of certain nervous system challenges like pain, dizziness and inflammation with COX-2 inhibiting activity, in-vitro. The objective of the present study was to evaluate the antidepressant and anxiolytic potentials of dichloromethane fraction of *Hedranthera barteri* (DMHBR), in different models in mice and results show that DMHBR has significant activity as an antidepressant and anxiolytic activity. [31]

Morus Mesozygia:

Morus mesozygia Stapf (Moraceae) is commonly referred to as the Black mulberry, Ewe aye (Yoruba, Southwest Nigeria) and it is the only species of the genus *Morus* native to Tropical Africa. In traditional folklore medicine, *M. mesozygia* is used in the treatment of arthritis, malnutrition, debility, rheumatism, stomach trouble, venereal disease and as a pain killer. The aim of this study is to investigate the

antidepressant-like effects of the methanol extract, petroleum ether and ethyl acetate fractions of the stem bark of *Morus mesozygia* and found that petroleum ether fraction was the most effective one in both FST and TST. [32]

Verbena Officinalis Linn:

Verbena officinalis Linn. (Verbenaceae) is a perennial plant which has been used as herbal medicine or health supplement in both Western and Eastern countries for centuries. It has been used to treat acute dysentery, enteritis, amenorrhea. In this study the evaluation of the antidepressant activity of methanolic extract of *verbena officinalis* linn (MEVO) in mice using the tail suspension test (TST) and forced swimming test (FST) are carried out and the result demonstrate that MEVO have antidepressant activity. [33,34]

Terminalia Catappalinn:

Terminalia catappa Linn belongs to Combretaceae family and is also known as Indian almond. Early studies indicate that *T.catappa* has multiple pharmacological properties such are anticancer, antidiabetic, wound healing, analgesic, anti-inflammatory, analgesic, immunomodulatory, hepatoprotective, and aphrodisiac. The leaves of this plant have been used as a folk medicine for treating hepatitis and dermatitis in Philippines and India, but the neuro-modulatory effect of TC against chronic mild stress was seldom explored and hence the present study was designed to explain potential antidepressant-like effect of *Terminalia cattapa* (leaf) hydro-alcoholic extract (TC) by using CMS model for a period of 7 weeks and suggested that TC supplementation could suppress stress induced depression by regulating monoamine neurotransmitters, CREB, BDNF, cortisol, AchE level as well as by amelioration of oxidative stress. Therefore TC can be used as a complementary medicine against depression-like disorder. [35]

Schisandra Chinensis:

Schisandra chinensis (Turcz.) Baill., as a traditional Chinese medicine, is a functional food, and is extensively used in the clinic with the functions of inducing astringency, replenishing and promoting the production of body fluid and tonifying the kidney to relieve mental strain and ameliorate learning and memory deficits, cognitive declines, exert sedative and hypnotic effects, and mitigate other neurodegenerative symptoms. The results of many studies show the involvement of the HPA axis and CNS in the effects exerted by Schizandra. However, the mechanisms of the above effects for *S. chinensis* are still unclear. The present study was aim to evaluate the antidepressant like effect of ethanol extract of the dried fruit of *S. chinensis* on depressive-like behavior induced by repeated corticosterone injections in mice and suggested that *S.chinensis* have antidepressant effect. [36,37]

Table 1: A brief description of plant having antidepressant activity

S.No	Plant name	Common name	Family	Parts used	Uses	References
1.	<i>Foeniculum Vulgare</i>	Fennel	Apiaceae	Fruits	Antidiabetic, antioxidant, hepatoprotective, antifungal, antimicrobial, antithrombotic, antispasmodic, antiosteoporotic and toxicology	[38]
2.	<i>Spirulina Platensis</i>	-	Cyanophyceae	Spray dried powder	Anti-inflammatory, antitumor, hepatoprotective, radio protective antimicrobial, strengthening immune system, metalloprotective and antioxidant effects	[39]
3.	<i>Phyllanthus amarus</i>	Gale-o-wind/ hurricane weed	Phyllanthaceae	Leaves	Stomachic, a digestive; rejuvenate, for promoting memory and intellect, for skin disorders, and as an antiepileptic, antipyretic, and analgesic	[40]
4.	<i>Passiflora foetida</i>	Wild maracuja bush passion fruit	Passifloraceae	Leaves	Central nervous system, (CNS) disorders	[41]
5.	<i>Nymphaea alba</i>	European white water lily	Nymphaeaceae	Flowers	Sedative and an aphrodisiac/anaphrodisiac	[42]
6.	<i>Holoptelea integrifolia</i>	Indian elm, jungle cork tree	Ulmaceae	Leaves	Anti-inflammation, gastritis, dyspepsia, colic, intestinal worms, vomiting, wound healing, leprosy, diabetes, hemorrhoids, dysmenorrhoea	[43]
7.	<i>Dacus carota</i>	Wild carrot	Apiaceae	Roots	Antifungal, antibacterial, enzyme protective, hepatoprotective activities. It is a remedy for fever, gonorrhoea, anorexia, dysentery, sores and skin diseases.	[44]

8.	<i>Jasminum sambac</i>	Arabian jasmine	Oleaceae	Leaves	Curing mouth infections, weakness of sight, insanity, ulcers, leprosy and skin diseases, analgesic, anti-inflammatory, antidepressant, antiseptic, aphrodisiac, sedative, antimicrobial, cytotoxic and expectorant	[45]
9.	<i>Amaranthus spinosus</i>	Spiny amaranth, spiny pigweed	Amaranthaceae	Whole plant	Antipyretic, laxative, diuretic, digestive, antidiabetic, anti-snake venom, antileprotic, blood diseases, bronchitis, piles and antigonorrheal	[46]
10.	<i>Eicchornia crassipes linn</i>	Water hyacinth	Pontederiaceae	Plant leaves and shoots	Nervine tonic, stimulant, antispasmodic, antioxidant, antidepressant (traditional anti-inflammatory activity)	[47]
11.	<i>Asparagus recemosu</i>	Satavar, shatavari	Asparagaceae	Seeds	Cystitis and dysentery, chronic fevers, rheumatism, inflamed membranes of the lungs, Stomach, Kidneys and Sexual organ nerve tonic antilithiatic, antioxidant, antineoplastic activity, antitussive, antidepressant. It helps with nervousness, pain, restless sleep, disturbing dreams and people with weak emotional and physical heart. tonic and diuretic and galactagogue, ulcer healing effect, control the symptoms of AIDS.	[48]
12.	<i>Eclipta alba</i>	False daisy, bhringraj	Asteraceae	Leaves	Liver tonic, rejuvenative and hepatoprotective. anti-venom against snake bites	[49]
13.	<i>Cucurbita pepo</i>	Pumpkin, summer squash	Cucurbitaceae	Seeds	Treat urinary tract problem and gastritis and to remove tapeworms and roundworms from the intestine, antioxidative, antidepressive, anti-helminthic activity and antimicrobial activity	[50]
14.	<i>Nardostachys jatamansi</i>	Jatamansi balchar	Valerianaceae	Roots	Tranquilizer, laxative, cardiac tonic, for curing vertigo, nervous headache, low and high blood pressure	[51]

15.	<i>Uncaria lanosa wallich var. - appendiculata ridsd</i>		Rubiaceae	Stem and hooks of plants	Treat cardiovascular and central nervous system ailments, including light headedness, convulsions, numbness, and hypertension. treat antiepileptic, antiParkinsonian, anti Alzheimer's disease, anxiolytic, protective action against ischemia-induced neuronal damage, anti-inflammation	[52]
16.	<i>Pogostemon cablin</i>	Patchouli	Lamiaceae	Leaves	Antioxidant, anti-stress, anti inflammatory and diuretic	[53]
17.	<i>Feijoa sellowiana</i>	Pineapple guava	Myrtaceae	Fruits	Antimicrobial antifungal activity, antioxidant activities, nephroprotective activity	[54]
18.	<i>Eugenia caryophyllus</i>	Clove	Myrtaceae	Flower bud	analgesic, antiepileptic activity	[55]
19.	<i>Cressa cretica</i>	Littoral bind wind, rudravanti	Convolvulaceae	Whole plant	Antibilious, anti-tuberculosis and expectorant, nootropic activities	[56]
20.	<i>Hedranthera barteri</i>	Dog breast, dog penis	Apocynaceae	Roots	The management of certain nervous system challenges	[57]
21.	<i>Morus mesozygia</i>	African mulberry	Moraceae	Stem bark	Arthritis, debility, stomach trouble, rheumatism, malnutrition, venereal disease and as a pain killer	[58]
22.	<i>Glycyrrhiza uralensis</i>	Mulethi	Leguminaceae	Roots	Anti-inflammatory, antithrombotic, antiviral and antiulcer	[59]
23.	<i>Lafoensia pacari</i>	Didal	Lythraceae	Leaves	Antibacterial, antiinflammatory, analgesic, antioedematous, antinociceptive	[60]
24.	<i>Schinus molle L</i>	Peruvian pepper tree	Anacardiaceae	Leaves	Antioxidant, anticancer activity	[61-63]
25.	<i>Tabebuia Avellaneda</i>	Lapacho, taheboo tree	Bignoniaceae	Bark	Antitumor, anti-inflammatory, antibacterial, antifungal	[64]

CONCLUSION:

India has a rich assortment of medicinal plants distributed in different geographical and ecological conditions widespread in the country. Plants have been used since prehistoric times for treatment of various ailments. In this review, the collection of antidepressant plants were tabulated from the various journals and can be concluded that there are still so many plants which needs to explore to study their therapeutic value, as

they may be used as herbal medications as they are free from side effects and frequent toxicity unlike the synthetic medicines. Hence this review is an initiation to provide wide option of herbal source for the treatment of depression.

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