

ROLE OF CERTAIN MEDICINAL PLANTS ON ANTI-DEPRESSANT/ACTIVITY

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ABSTRACT

Depression is a chronic, potentially fatal disorder that affects individuals all over the world. The medications used to treat this condition have a variety of negative effects and may interact with other medications or foods. Complementary therapies are necessary owing to the drawbacks of the existing medication, such as side effects, which can help reduce depression symptoms and avoid a return of the condition. Additionally, a number of studies have investigated supplementary therapy modalities to enhance patient outcomes for depression purpose. Use of therapeutically beneficial medicinal herbs and phytochemicals is one viable alternative treatment to using traditional antidepressants. Medical herbs and phytochemicals have been shown in studies to have positive effects on depression and its underlying central nervous system mechanism. A chronic, episodic condition called major depressive disorder (MDD) causes disturbances in mood, interest, and vegetative symptoms. Through its effects on the patients' physical, mental, psychological, social, and spiritual wellness, it has a significant impact on their quality of life. Depression is a state of gloomy mood and the avoidance of activities marked by a loss of interest, and difficulty concentrating. Inhibition of NA and 5-HT, as well as MAO-A activation, are contributing factors to the illness. A loss in interest in pleasure, feelings of unworthiness or excessive guilt, a drop in appetite and libido, sleeplessness, and persistent thoughts of death or suicide are only a few of the symptoms. Natural plant products are the subject of current study because they represent a plentiful supply of promising novel medication leads.

Keywords: Antidepressants, Medicinal Plants, Medicinal Herbs, Depression.

1. INTRODUCTION:

A persistent, chronic, and incapacitating mental health condition called depression has been linked to high rates of death and morbidity [1]. One of the most significant causes of impairment in adulthood is this psychological condition that poses a serious risk to life. In patients with chronic illnesses, the incidence of depression is substantially greater, ranging between 22 and 46%, as opposed to the overall incidence of 3-10% [2]. More than 350 million people worldwide suffer from depression, which is a psychiatric condition with a high incidence that is steadily rising [3]. According to a report by the World Health Organization, it can be primarily described as an illness with vegetative symptoms like sleep disturbances and emotional symptoms like anxiety. According to this report, 45 million people worldwide suffer from behavioural or mental disorders, which accounts for 12% of the global disease burden and is predicted to increase to 20% by 2020 [4]. Remission, Recovery, Relapse, and Recurrence, or roughly the "4 Rs" of depression, are four words that have come to be used to characterise the clinical condition of depressed individuals throughout time. Remission is defined as the return to normality following a 2-month period [5]. Antidepressant medications can be used to treat depression as well as other anxiety disorders, neurotic compulsive behaviour, irregular eating patterns, chronic neuropathic pain, dysmenorrhea, snoring, migraines, and sleep disorders [6]. The World Health Organization designated the theme of World Health Day 2017 as "DepressionLet's discuss" in recognition of the effects of depression. MDD is a long-lasting condition with wide variations in remission and chronicity. There are 48.5 million afflicted people in India, where the prevalence is high [7]. Women are 2.1 times as likely as men to experience depression [8]. Depression is expected to overtake diabetes as the second leading cause of long-term disability in 2020 and become the principal cause by 2030, according to the World Health Organization Global Burden of Disease [9].

1.1 Types Depression [10]

Persistent depression

It is the same mood that lasts for a couple of years, maybe two or three. A patient diagnosed with this depression has various symptoms with long-term effects on behaviour.

Postnatal depression

Some women will get this type of depression after having a baby. It is also called "Baby Blues". It is comparatively mild depression and anxiety that clears within two weeks after delivery.

Bipolar depression

It includes extremely low moods and euphoric or irritable conditions, hence it is called manic depression.

Seasonal effective disorder

It is also known as "winter depression". It usually occurs during the winter season due to less light. It mainly occurs with weight gain, increased sleep, and social withdrawal.

2. MEDICINAL HERBS AND PHYTOCHEMICALS USED IN DEPRESSION

There are several classes of traditional antidepressants that are used to treat depression, including second-generation antidepressants, tri-cyclic antidepressants, and MAO inhibitors. The MAO inhibitor increases their synaptic levels, where it improves neurotransmission by blocking the serotonin transporter (SERT), which is norepinephrine. As first-line treatment, tranylcypromine, phenelzine, isocarboxazid, and moclobemide are used as monoamine inhibitors [30]. These inhibitors prevent the action of norepinephrine and SERTs, which indicates an improvement in their level and transmission. These substances boost neurotransmission's activity [11]. Serotonin-norepinephrine reuptake inhibitors, often known as selective serotonin reuptake inhibitors, are included in the second generation of antidepressants. Despite significant medical advancements, there are limitations to the treatment of depression and a failure to achieve disease remission [12,13].

3. MEDICINAL PLANTS:

3.1 SAFFRON:

Latin Name: *Crocus sativus L*

Family: Iridaceae

Pharmacological Action: It is made from flower-related components. The Hamilton Rating Scale for Depression showed a striking improvement in patients' depression in two randomised controlled studies using saffron (30mg/day) [14,15]. In three separate, randomised controlled studies [16,17] contrasting saffron to imipramine or fluoxetine, they also reported equal effects on the Hamilton Rating Scale for Depression. According to authors, the serotonergic, antioxidant, anti-inflammatory, neuroendocrine, and neuroprotective actions of saffron may be the cause of the spice's antidepressant benefits [18].

Uses: As an analgesic, anti-inflammatory, sedative, carminative, sweat-inducing agent, expectorant, stimulant, stomach strengthener, stimulator of sexual desire, and as a tool for promoting early menstruation. Animal models have shown that saffron's aqueous and hydroalcoholic extracts have antidepressant properties [19].



Fig-1: SAFFRON

3.2 Lavender:

Latin Name: *Lavandula angustifolia*

Family: Lamiaceae

Pharmacological Action: Inhibit depressive-like behaviours in elevated plus-maze tests and forced swimming, which reverse the loss of spatial memory, reduce anxiety, sadness, and stress in pregnant women. Become less depressed The Edinburgh Postnatal Depression Scale could be improved [20,21].

Uses: Include sedative, antispasmodic, and analgesic uses. Clinical studies have demonstrated that using lavender essential oil in aromatherapy might lessen tension, anxiety, pain, and sadness [22].



Fig-2: Lavender

3.3 Curcumin:

Latin Name: *Curcuma longa Linn*

Family: Zingiberaceae

Pharmacological Action: Numerous animal models of depression have revealed considerable antidepressant benefits of curcumin. However, due to poor intestinal absorption, it performed less well in clinical studies [23]. Curcumin had a substantial antidepressant effect in comparison to placebo on the Spielberger State-Trait Anxiety Inventory and the Inventory of Depressive Symptomatology [24].

Uses: Research is being done on the possible medical effects of this yellow natural phenol, which has long been employed in Oriental medicine [25]. With the use of absorption factors, a structural counterpart, liposomes, or nanomaterials, there are several ways to boost curcumin bioavailability. The antidepressant impact of curcumin supplementation has been demonstrated in numerous mouse models [26].



Fig-3:Curcumin

4. CONCLUSIONS:

Some medicinal herbs have shown antidepressant effects similar to those of conventional antidepressants in the treatment of patients with mild to moderate depression as well as major depression. Medicinal plants do not have significant side effects in patients, and the reported side effects for them are not significantly different from placebo. Plants have played a vital role in the management of human health since evolution. Medicinal plants exert

a great role in the discovery of new drugs. The majority of the human population worldwide is being affected by mental disorders like depression [27,28].

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