



**ETHNOBOTANICAL, PHYTOCHEMICAL, PHARMACOLOGICAL AND  
HOMOEOPATHIC REVIEW OF VALERIANA OFFICINALIS LINN.**

**Dr. Tushita Thakur\***

B.H.M.S., MD (HOM) Consultant Homoeopathy, AYUSH Wellness Clinic, President's Estate, New Delhi, India.

**\*Corresponding Author: Dr. Tushita Thakur**

B.H.M.S., MD (HOM.) Consultant Homoeopathy, AYUSH Wellness Clinic, President's Estate, New Delhi, India.

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**ABSTARCT**

Valeriana Officinalis a tall perennial herb that belongs to Valerianaceae family and is native Europe and Asia.<sup>[1]</sup> It has been used since ancient time for its medicinal value as a sedative and anxiolytic.<sup>[1,2,3]</sup> Galen reported its sedative effects and Hippocrates used it to treat women's diseases.<sup>[7,10]</sup> This review was conducted to summarize the available scientific information obtained from literature, medical databases, laboratory studies and human clinical studies on Valeriana Officinalis Linn. The phytochemical constituents identified in valerian root are essential or volatile oils (monoterpenes and sesquiterpenes), iridoids or valepotriates and pyridine-type alkaloids.<sup>[1]</sup> It has been pharmacologically proven in animal models for anxiety<sup>[12-14]</sup>, depression<sup>[15,16]</sup> stress<sup>[17]</sup>, sedative<sup>[18-25]</sup> and anti-spasmodic<sup>[26]</sup> properties. In clinical studies it has been pharmacologically proven for premenstrual syndrome<sup>[30]</sup> and menopausal syndrome<sup>[31]</sup> while in clinical trials its efficacy as anxiolytic<sup>[27-29]</sup> and sedative<sup>[32-37]</sup> remain inconclusive. Homoeopathic literature describes its beneficence for anxiety, headache, hypochondriasis, hysteria, neuralgia, menopausal syndrome, sciatica and sleeplessness etc. The homoeopathic preparations of Valeriana Officinalis have been pharmacologically proven beneficial for ADHD.<sup>[38]</sup> Considering the cost efficacy and no side effects of Homoeopathic medicines; there is a need to strengthen research based evidence for homoeopathic preparations of this valuable medicinal plant.

**KEYWORDS:** Valeriana Officinalis, Ethnobotany, Homoeopathy, Pharmacology, Phytochemistry

**INTRODUCTION**

Valeriana Officinalis Linn. is a popular European herb used in folk medicine for its sedative and anxiolytic properties.<sup>[1,2,3]</sup> The dried root of this plant (Valerian) has been used as a medicinal herb since the time of ancient Greece and Rome. Hippocrates described it to have sedative and anxiolytic properties. Galen prescribed it as a remedy for insomnia.<sup>[4]</sup>

Valeriana Officinalis was introduced into Homoeopathic practice in 1805 by Dr. Hahnemann, the founder of Homoeopathy.<sup>[5]</sup> It was included the United States Dispensatory in 1849 which reported on its effect on the nervous system and its ability to produce drowsiness and sleep. It was also listed in the British Pharmacopoeia in 1867 and the United States National Formulary until 1946. Various species of valerian continue to be included in the pharmacopoeiae of many nations such as Belgium, France, Germany, Italy, Switzerland, and the United Kingdom.<sup>[6]</sup>

The genus Valeriana includes 150 species. The European Pharmacopoeia lists Valeriana officinalis LINNÉ as a collectable species, giving it the additional category of "s.l." (meaning "sensu latiore", in the broader sense).

Besides Valeriana Officinalis, two other species of this genus used as herbal remedies are the Mexican species of valerian, Valeriana Edulis NUTT. ssp. procera and the valerian indigenous to Pakistan and India, Valeriana Wallichii DC. Both species are rich in valepotriates and used as daytime sedatives.<sup>[7]</sup>

**TAXONOMY<sup>[8]</sup>**

Kingdom: Plantae  
Division: Tracheophyta  
Subdivision: Spermatophytina  
Class: Magnoliopsida  
Order: Dipsacales  
Family: Valerianaceae  
Genus: Valeriana L.  
Species: Valeriana officinalis L.  
Botanical name: Valeriana officinalis Linn.

**VERNACULAR NAMES<sup>[5,9]</sup>**

English: All Heal, Wild Valerian, St. George's Herb, Valerian, Valeriana, Valeriana Rhizome, Valeriane, Vandal Root, Common Valerian, European Valerian, Garden Heliotrope, Garden Valerian.  
Hindi: Billilotan, Kalavala.

French: Valeriane Sauvage, Potite Valerian, Racine De Valeriane Valériane Officinale Valériane Cultivée.

German: Augenwurzel Baldrianwurzel, Katzungaldrian. Echter Arznei-Baldrian.

Dutch: Echte Valeriaan.

German: Echter Baldrian.

Swedish: Läkevänderot.

### HABIT AND HABITAT<sup>[1]</sup>

*Valeriana officinalis* is native to Europe and Asia and has naturalized in eastern North America. It has natural populations dispersed throughout temperate and sub-polar Eurasian zones. The species is common in damp woods, ditches, and along streams in Europe. It is cultivated as a medicinal plant, especially in Belgium, England, Eastern Europe, France, Germany, the Netherlands, the Russian Federation, and the United States of America.

### BOTANICAL DESCRIPTION

*Valeriana officinalis* is a tall perennial herb, with a tuberous, short rhizome, bearing numerous slender, fleshy tapering, pale-brown rootlets, 7 to 12 cm long; one or more stolons. Stem erect, 90 to 150 cm high, hollow, furrowed, branched in the terminal part and hirsute at base. Leaves both radical and cauline, the radical being on long petioles, whereas the cauline are opposite or alternate, exstipulate and pinnatisect with clasping petioles. Leaflets sessile, lanceolate and dentate. The fruits are oblong-ovate, 4-ridged, 1-seeded achenes.<sup>[1,5]</sup>

The inflorescence consists of racemes of cymes whose flowers are small, white, or pink and bloom from May to August.<sup>[5,7]</sup> The fresh plant is odourless. The typical valerian smell can only be detected faintly coming from the fresh root. The odour intensity increases only once the plant has been dried; is like that of isovaleric acid; taste sweetish, camphoraceous and somewhat bitter.<sup>[1,5,7]</sup>

### ETHNOBOTANY

The name valerian is derived either from 'Valerius', who first utilized its medicinal properties, or from the Latin term 'valere', meaning well-being. It has been used medicinally for at least 2000 years. Dioscorides (ca. AD 40-80) wrote of several species of valerian and called it 'phu' due to foul odour of the valerian root. Galen (ca. AD 131-208) reported its sedative effects.<sup>[10]</sup> The plant was so highly esteemed in medieval times as a remedy that it was given the name All-Heal. In the 4th and 5th centuries B.C., valerian was of great importance to followers of Hippocrates, who used it to treat women's diseases. It used as a warming drug, an emmenagogic, febrifugal and diuretic. It was also administered to cure afflictions of the spleen and the plague, back pain, coughs and eye complaints. It was used externally to combat ulcers and condyloma<sup>7</sup>. In the 16th century, it was used to treat nervousness, trembling, headaches, and heart palpitations.<sup>[11]</sup>

It was first used as a treatment for epilepsy in the late 16th century reportedly by Fabius Columna, who related

a personal cure, but subsequently was also reported to have relapsed. Fifty years later, additional reports of its effectiveness in three cases of epilepsy were reported by Dominicus Panarolus. Numerous reports by a wide variety of writers followed, and valerian subsequently became routinely used for the treatment of various nervous disorders. Respected American medical botanist William Woodville reported that various European authorities ascribed antispasmodic, anthelmintic, diuretic, diaphoretic, and emmenagogue actions to valerian and related its usefulness for hysteria. However, Woodville himself did not consider it to be as effectual as proclaimed by other writers, an opinion reportedly supported by the Edinburgh Dispensary (Woodville 1810). Valerian was widely used by Eclectic physicians. John King, in his highly acclaimed American Dispensary, cited valerian as being an aromatic stimulant and reported some unique indications, including its use for rheumatism, low grade fevers, and as an aphrodisiac, as well as its use in hysteria (King 1866). John Finley Ellingwood in Systematic Treatise on Materia Medica and Therapeutics considered valerian to be a nervine and sedative for the treatment of hysteria, epilepsy, and menopausal nervous anxiety (Ellingwood and Lloyd 1900). John Milton Scudder in Specific Medications (Scudder 1903) cites valerian as having activity as a cerebral stimulant, analgesic, and sedative useful in nervous irritability, specifically when the condition is a result of "enfeebled cerebral circulation".<sup>[6]</sup>

It was used to prevent and treat shell shock in frontline troops during World War I and during World War II to help calm civilians subjected to air raids.<sup>[4]</sup> Due to rich folk tradition of its use in anxiety, restlessness, hysteria, nervous headache and mental depression; *Valeriana Offininalis* has become the most studied herbal medicine having sedative properties.<sup>[3]</sup>

### PHYTOCHEMICAL PROPERTIES<sup>1</sup>

The potentially active chemical constituents of Valerian include:

- Iridoid valepotriates (0.5%-2.0%): valtrates, isovaltrate, didrovaltrate, valerosidate and others.
- Volatile essential oil (0.2-0.2.8%): bornyl isovalerenate and bornyl acetate; valerenic, valeric, isovaleric and acetoxyvalerenic acids; valeranal, valeranone, cryptofaurinol; and other monoterpenes and sesquiterpenes.
- Alkaloids (0.01-0.05%): valeranine, chatinine, alpha-methyl pyrrolketone, actinidine, skyanthine and naphthyridylmethylketone.
- Lignans: hydroxypinoresinol.
- Other Constituents: Amino acids (arginine,  $\gamma$ -aminobutyric acid; GABA), glutamine, tyrosine), caffeic and chlorogenic acids (polyphenolic), methyl 2-pyrrolketone, choline, tannins, gum and resin.

## EXPERIMENTAL PHARMACOLOGY

### Anxiolytic

The anxiolytic properties of valerian have been demonstrated in animals. An animal model experimental study was done to compare the effect of benzodiazepine diazepam with *Valeriana officinalis* in laboratory rats. Rats were administered either ethanol (1 ml/kg), diazepam (1 mg/kg), valerian root extract (3 ml/kg), valerianic acid (3 mg/kg), or a solution of valerianic acid and exogenous GABA (75 µg/kg and 3.6 µg/kg, respectively). The experiment rats were assessed for the number of entries and time spent on the open arms of an elevated plus maze. Results of this study showed that there was a significant reduction in anxious behavior when valerian extract or valerianic acid exposed rats were compared to the ethanol control group.<sup>[12]</sup>

Experimental studies have reported GABA neurotransmission as a possible mechanism for the anxiolytic effects of *Valeriana officinalis*.<sup>[13]</sup> An animal model study concluded that the selective interactions of valerian extract and valerianic acid with Group I and Group II mGluR may represent an alternative explanation for the anxiolytic properties of this plant. This study had investigated the interaction of *Valeriana officinalis* aqueous extract with the glutamatergic receptors by performing receptor-binding assays using rat cortical synaptic membranes.<sup>[14]</sup>

### Depression

Published research has reported the beneficial effect of *Valeriana Officinalis* in depression in animal studies. The effects of valerian were studied in chronic mild stress induced depression in cerebral hippocampus of rats on the level of 5-hydroxytryptamine, cell proliferation and neurons. Seventy rats were divided into 7 groups, ten per group- normal control, untreated, negative control, positive control, and low-, medium- and high-dose Valerian-treated groups. Except for the normal control group, depression was induced in rats by chronic mild stress. The depressive rats in the other six groups were intragastrically administered with sodium carboxymethylcellulose, fluoxetine, and low, medium and high-dose Valerian, respectively for 3 weeks. After the treatment, the proliferating cells in the hippocampus were labeled by injecting bromodeoxyuridine (BrdU) in 7 groups. The content of 5-hydroxytryptamine (5-HT) in the hippocampus was detected by high-performance liquid chromatography (HPLC), and the number of hippocampal neurons was counted by morphometry. Compared with the normal control group, the levels of 5-HT in the hippocampus in the low- and medium-dose Valerian-treated groups were increased and recovered to normal level. After the administration of low-dose Valerian for 3 weeks, the number of BrdU positive cells and neurons in the hippocampus of the depressive rats were recovered to the normal status.<sup>[15]</sup>

In another study the effects of *Valeriana Officinalis* L. hydro-alcoholic extract was investigated in depression

like behavior in ovalbumin sensitized rats. A total of 50 Wistar rats were divided into five groups: Group 1 (control group) received saline instead of *Valeriana officinalis* L. extract. The animals in group 2 (sensitized) were treated by saline instead of the extract and were sensitized using the ovalbumin. Groups 3-5 (Sent - Ext 50), (Sent - Ext 100) and (Sent - Ext 200) were treated by 50, 100 and 200 mg/kg of *Valeriana Officinalis* L. hydro-alcoholic extract respectively, during the sensitization protocol. Forced swimming test was performed for all groups and immobility time was recorded. Finally, the animals were placed in the open-field apparatus and the crossing number on peripheral and central areas was observed. The immobility time in the ovalbumin sensitized group was higher than that in the control group ( $P < 0.01$ ). The animals in Sent-Ext 100 and Sent-Ext 200 groups had lower immobility times in comparison with ovalbumin sensitized group ( $P < 0.05$  and  $P < 0.01$ ). The results indicated that the hydro-alcoholic extract of *Valeriana Officinalis* prevents depression like behavior in ovalbumin sensitized rats.<sup>[16]</sup>

### Stress

The effects of valerian root extracts on physical and psychological stress responses were investigated in eight-week-old ICR mice who received oral administration of VE (100 mg/kg/0.5 ml) or equal volume of distilled water in every day for 3 weeks prior to being subjected to physical or psychological stress for 3 days, which are induced by communication box developed for physical electric shock and psychological stress by nociceptive stimulation-evoked responses. The stress condition was assessed by forced swimming test and serum corticosterone levels. In addition, norepinephrine (NE), serotonin (5-HT), and their metabolites such as 3-methoxy-4-hydroxyphenylethyleneglycol sulfate (MHPG-SO<sub>4</sub>) and 5-hydroxyindoleacetic acid (5-HIAA) were measured in the hippocampus and amygdala at 1 h after final stress condition, respectively. The results of this study indicated that immobility time, corticosterone levels, MHPG-SO<sub>4</sub> and 5-HIAA were significantly increased in both the physical and psychological stress groups compared to the control group. The administration of valerian root extracts significantly suppressed the increase of MHPG-SO<sub>4</sub> and 5-HIAA in the two stress groups. The study concluded that valerian root extracts can suppress physical and psychological stress responses by modulating the changes in 5-HT and NE turnover in the hippocampus and amygdala.<sup>[17]</sup>

### Sedation

*Valeriana officinalis* is widely used as a traditional medicine to improve the quality of sleep. Although it may have been well documented as promising pharmacological agent; the exact mechanisms and the constituent responsible for the sedative properties of this medicinal plant is not well known. Earlier published research proposed two categories of constituents as the major source of valerian's sedative effects. The first

category comprises the major constituents of its volatile oil including valerenic acid and its derivatives, which have demonstrated sedative properties in animal studies. The second category comprises the iridoids, which include the valepotriates. Valepotriates and their derivatives are active as sedatives in vivo but are unstable and break down during storage or in an aqueous environment, making their activity difficult to assess.<sup>[18,19, and 20]</sup> Later gamma aminobutyric acid (GABA, an inhibitory neurotransmitter) neurotransmission was suggested as a mechanism for *Valeriana officinalis* anxiolytic and sedative effects. An in vitro study using synaptosomes reported that the possible mechanism by which a valerian extract may cause sedation is by increasing the amount of GABA available in the synaptic cleft. The results of this study suggest that a valerian extract may cause GABA to be released from brain nerve endings and then block GABA from being taken back into nerve cells.<sup>[21]</sup> A laboratory study reported the presence of the anxiolytic flavone 6-methylapigenin (MA) and sedative and sleep-enhancing flavanone glycoside 2S (-) hesperidin (HN) in *Valeriana officinalis*. MA, in turn, was able to potentiate the sleep-inducing properties of HN. It also identified a flavone glycoside linarin that has like sedative and sleep-enhancing properties HN, that are potentiated by simultaneous administration of valerenic acid.<sup>[22]</sup> Some studies have reported that it is likely that there is no single active compound that may be responsible for sleep-promoting effects of *Valeriana Officinalis* in animal in vitro studies. Valerian's effects may be a result from multiple constituents acting independently or synergistically.<sup>[23,24]</sup> The results of a recent study suggest that *Valeriana Officinalis* extract is effective in modulating lipid peroxidation (LPO) induced by different pro-oxidant agents. These data may imply that *Valeriana Officinalis* extract, functioning as antioxidant agent, can be beneficial for reducing insomnia complications linked to oxidative stress.<sup>[25]</sup>

#### Antispasmodic

An in vivo and in vitro study on guinea pig ileum reported that the spasmolytic activity of the valepotriates is principally due to valtrate or dihydrovaltrate. These agents act on centres of the central nervous system and through direct relaxation of smooth muscle, apparently by modulating  $Ca^{2+}$  entry into the cells or by binding to smooth muscle.<sup>[26]</sup>

### CLINICAL PHARMACOLOGY

#### Anxiolytic

Although the anxiolytic properties of valerian have been demonstrated in animals, its effects in clinical trials have been inconclusive. Some clinical studies have reported benefit while some have reported insufficient evidence. A pilot study was conducted with aim study the anxiolytic effect of valepotriates using a parallel, double-blind, flexible-dose, placebo-controlled design. Thirty-six outpatients with generalized anxiety disorder (DSM III-R), after a 2-week wash-out, were randomized to one

of the following three treatments for 4 weeks (n = 12 per group): valepotriates (mean daily dose: 81.3 mg), diazepam (mean daily dose: 6.5 mg), or placebo. No significant difference was observed among the three groups at baseline and all the three groups presented a significant reduction in the total HAM-A scores. Only the diazepam and valepotriates groups showed a significant reduction in the psychic factor of HAM-A. The diazepam group also presented a significant reduction of the STAI-trait. The preliminary data obtained suggested that the valepotriates may have a potential anxiolytic effect on the psychic symptoms of anxiety.<sup>[27]</sup>

A review of systematic reviews (SR), meta-analysis (MA) and randomized controlled trials (RCT) published between January 2000 and March 31, 2010 was carried out analyzing articles in English, Spanish, French or Portuguese. References of relevant articles were also reviewed and the Strength of Recommendation Taxonomy (SORT) from American Family Physician was used to evaluate the level of evidence and assigning the strength of a recommendation. The review concluded that there is insufficient evidence regarding efficacy of valerian in the treatment of anxiety disorders (SOR A). The evidence in insomnia is limited by the contradictory results of studies reviewed and their methodological problems, although it seems to have some effect in mild to moderate insomnia (SOR B).<sup>[28]</sup>

A randomised, double-blind, placebo-controlled trial was done to evaluate the efficacy of *Valeriana officinalis* L. for control of anxiety during the third molar surgery. A single oral dose of either Valerian (100 mg) or placebo was randomly administered 1 h before each surgical procedure to 20 volunteers between 17 and 31 years of age. Anxiety level was assessed by physiological parameters such as blood pressure and heart rate (HR) and the observation of signs. Descriptive analysis, Chi-square test, Friedman test, Wilcoxon test and effect size test were performed ( $P < 0.05$ ). Researcher's (80%) and surgeon's (75%) evaluations suggested that patients treated with Valerian were calmer and more relaxed during surgery and reported better maintenance of systolic blood pressure and HR after surgery.<sup>[29]</sup>

#### Premenstrual syndrome

A double-blind clinical trial was conducted among 100 female university students with PMS into groups receiving Valerian (*Valeriana officinalis*) and placebo in 2013. The participants received 2 pills daily in the last seven days of their menstrual cycle for 3 cycles and recorded their symptoms. The data were compared previous, one, two, and three cycles after student's intervention using and analyzed by independent t-test, paired t-test, chi-squared test, and repeated measures ANOVA in SPSS 16. A significant difference was seen in mean emotional, behavioral and physical premenstrual symptom severity in the intervention group before and after the intervention ( $P < 0.001$ ).<sup>[30]</sup>

### Menopausal syndrome

A triple-blind, randomized, controlled clinical trial was conducted during a three-month period in Hamadan, Iran, in 60 postmenopausal women aged 45-55 years with aim to determine the effect of Valerian on the severity and frequency of hot flashes. An oral Valerian 530 mg capsule was given twice per day for two months in the intervention group; similarly oral placebo 530 mg capsule was administered in control group. Kupperman index was used to determine the severity and frequency of hot flashes before, one month after, and two months after initiation of the intervention. The severity of hot flashes in the Valerian group was significantly lower than that in the placebo group at one ( $p = .048$ ) and two months ( $p = .020$ ) after initiation of the intervention. Compared with the placebo group, the mean frequency of hot flashes was significantly reduced two months after initiating the use of Valerian ( $p = .033$ ).<sup>[31]</sup>

### Sedation

The evidence concerning sleep-promoting effects of valerian is quite varied. While results of some studies suggest it may be useful for insomnia, results of other studies do not. In a double-blind study, 450mg or 900 mg of an aqueous root extract of valerian significantly decreased sleep latency as compared with a placebo. However, the higher dose of valerian did not further decrease sleep latency.<sup>[32]</sup> Another clinical study that evaluated the effect of valerian extract on sleep polygraphy demonstrated that although the aqueous extract of valerian root significantly increased sleep quality, in poor and irregular sleepers, but it had no effect on night awakenings or dream recall.<sup>[33]</sup> In a randomized, double-blind, placebo-controlled crossover study, researchers evaluated sleep parameters with polysomnographic techniques that monitored sleep stages, sleep latency, and total sleep time to objectively measure sleep quality and stages. This RCT concluded that Valerian had no effect on any of the 15 objective or subjective measurements except for a decrease in slow-wave sleep onset (13.5 minutes) compared with placebo (21.3 minutes). However, the valerian group reported fewer adverse events than did the placebo group.<sup>[34]</sup> The efficacy study of Valerian Officinalis supplement for sleep in people undergoing cancer treatment failed to provide data to support the hypothesis that valerian, 450 mg, at bedtime could improve sleep as measured by the Pittsburgh Sleep Quality Index (PSQI). However, patients improved in some secondary outcomes such as fatigue.<sup>[35]</sup>

The Bent et al. review included 16 eligible RCTs on valerian and valerian in combination with other herbal medicines and found that 9 out of 16 studies did not have positive outcomes in regard to improvement of sleep quality.<sup>[36]</sup> Taibi et al. review, which included 29 controlled studies, concluded that most studies found no significant difference between valerian and placebo.<sup>[37]</sup> Finally, Fernández-San-Martín et al. meta-analysis, which includes 8 eligible RCTs on valerian preparation

compared with placebo, found that the mean differences in Latency Time and Sleep Quality Scale between the Valerian and placebo treatment groups was respectively 0.70 min (95% CI, -3.44 to 4.83) and -0.02 (95% CI, -0.35 to 0.31) concluding that VO would be effective for a subjective improvement of insomnia.<sup>[22]</sup>

### HOMOEOPATHIC PHARMACOLOGY

A three-week, double-blind, placebo-controlled pilot study was carried out in the department of Homoeopathy, University of Johannesburg, South Africa. The aim of this study was to determine the efficacy of homeopathic Valeriana officinalis mother tincture (MT) and 3X potency on Attention Deficit Hyperactivity Disorder (ADHD). Thirty children between the ages of five and 11 years, pre-diagnosed with ADHD, were recruited. Valeriana Officinalis MT ( $n = 10$ ), 3X ( $n = 10$ ) or placebo ( $n = 10$ ) were administered orally three times a day for two weeks. Barkley and DuPaul teacher rating scale, the children's checking task and the parent symptom questionnaire scores were used on day 1 (prior to treatment), at the end of weeks two and three (with treatment), and then after the third week following no treatment to assess the efficacy. A statistically significant improvement was found in the participants' behaviour in the Valeriana Officinalis MT and 3X groups, with particular reference to sustained attention, anxiety and impulsivity and/or hyperactivity. Preliminary findings of this study suggested that Valeriana officinalis MT and 3X may have applications in the management of ADHD.<sup>[38]</sup>

### HOMOEOPATHIC USES

Valeriana officinalis was introduced into Homoeopathic practice in 1805 by Hahnemann, in his first pharmacographic work "Fragmenta de viribus medicamentorum positivis sive in sano corpore humano observatis", written in Latin and published in Leipzig in 1805. The sources of symptoms were symptoms observed partly by proving on Hahnemann himself and collected from toxicological observations of others.<sup>[39]</sup> In Homoeopathy, the Rhizome of Valeriana Officinalis dried in artificial heat soon after collection is used for medicinal purposes. The Mother Tincture has Drug Strength 1/10 (Valeriana Officinalis in coarse powder 100 g, Purified Water 500 ml and Strong Alcohol 537 ml to make one thousand millilitres of the Mother Tincture). The 2x contain one part Mother Tincture, four parts Purified Water and five parts Strong Alcohol; 3x and higher are prepared with Dispensing Alcohol.<sup>[5]</sup>

The standard Homoeopathic Materia Medicae describe that Valeriana Officinalis has regional affinity for mind, spinal and genitor-urinary nerves, calf muscles, heels, and tendo achilles muscles. It is clinically useful in cases of anxiety, hypochondriasis, hysteria, headache, neuralgia, menopausal syndrome, nervous palpitations of heart, pain in heels, sciatica, sleeplessness and toothache. It is suited to nervous, irritable, hysterical patients in

whom the intellectual faculties predominate; who suffer from over-sensitiveness of all senses and neuralgia. It calms the nervousness in excitable temperaments; abates the excitement of the circulation, removes wakefulness, sadness, promotes sleep, and induces sensation of quietude and comfort. There is tendency to very changeable disposition and ideas. The patient complains of twitching of parts and suddenly appearing pains which manifest after resting a long time in any position relieved by a change of position. The patient has sensation of great coldness in head; as if a thread were hanging down throat; feels light as if floating in the air. Nervous irritation, cannot keep still, complaint of tearing pains and cramps in different places; red parts become white. It is useful in children who vomit curdled milk, in large lumps; same in stools as soon as it has nursed, after mother has been angry. It is useful in severe pain of sciatica during pregnancy worse when standing and letting the foot rest on floor; better by lying down. There is drawing and weak feeling along tendo achillis, toward heel, as if the part had lost all strength, when sitting; disappearing when rising from a seat. It is useful in sleeplessness with tossing about. The patient is worse from rest, standing, excitement, evening; and better by changing position, walking about, rubbing. Valeriana Officinalis antidotes bad effects of abuse of Chamomile tea<sup>[40,41,42,43and44]</sup>.

### CONCLUSION

Valeriana Officinalis has been used since ancient time for its medicinal value. The phytochemical constituents identified in valerian root are essential or volatile oils (monoterpenes and sesquiterpenes), iridoids or valepotriates and pyridine-type alkaloids. It has been pharmacologically proven in animal models for anxiety, depression, stress, anti-spasmodic and sedative properties. In clinical studies it has been pharmacologically proven for premenstrual syndrome and menopausal syndrome while in clinical trials its efficacy as sedative and anxiolytic remain inconclusive.

Homoeopathic literature describes its beneficence for anxiety, headache, hypochondriasis, hysteria, neuralgia, menopausal syndrome, sciatica and sleeplessness etc. The homoeopathic preparations of Valeriana Officinalis have been pharmacologically proven beneficial for ADHD. In crude form the chronic use of Valeriana is associated with side-effects including headaches, excitability, uneasiness, and insomnia. Very large doses may cause bradycardia and arrhythmias, and decrease intestinal motility.<sup>[45]</sup> Considering the cost efficacy and no side effects of Homoeopathic medicines; there is a need to strengthen research based evidence for homoeopathic preparations of this valuable medicinal plant.

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### REFERENCES

1. WHO Monographs of Selected Medicinal Plants, Volume 3. World Health Organisation. Geneva, 2007.
2. Houghton PJ. The scientific basis for the reputed activity of valerian. *Journal of Pharmacy and Pharmacology*, 1999; 51(5): 505–512.
3. EMEA. Valeriana officinalis Monograph, 2009. Doc. Ref.: EMEA/HMPC/585558/2007
4. Patocka J, Jakl J. Biomedically relevant chemical constituents of Valeriana Officinalis. *J Appl Biomed*, 2010; 8: 11–18.
5. Homoeopathic Pharmacopoeia of India. Combined Government of India, I to V; 607-608.
6. American Herbal Pharmacopoeia & Therapeutic Compendium. Valeriana Officinalis- analytical, quality control & therapeutic monograph. April, 1999; 1-2.
7. [https://www.avogel.com/plant-encyclopaedia/valeriana\\_officinalis.php](https://www.avogel.com/plant-encyclopaedia/valeriana_officinalis.php)
8. ITIS Standard Report Page. Available at [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=35363#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=35363#null). Accessed on 29/05/17.
9. Global biodiversity information database. Available at <http://www.gbif.org/species/2888763/vernaculars>. Accessed on 28/05/17.
10. American Herbal Pharmacopoeia & Therapeutic Compendium. Valeriana Officinalis- analytical, quality control & therapeutic monograph. April, 1999; 1-2.
11. Culpeper N: Garden valerian. In: Culpeper's Complete Herbal. New York: W. Foulsham, 1994: 295-297.
12. Murphy K, Kubin ZJ, Shepherd JN, Ettinger RH. Valeriana officinalis root extracts have potent anxiolytic effects in laboratory rats. *Phytomedicine*, 2010; 17(8-9): 674–678.
13. Benke D, Barberis A, Kopp S et al. GABA receptors as in vivo substrate for the anxiolytic action of valerianic acid, a major constituent of valerian root extracts. *Neuropharmacology*, 2009; 56(1): 174–181.
14. Valle-Mojica LMD, Ayala-Marin YM, Ortiz-Sanchez CM et al. Selective Interactions of Valeriana officinalis Extracts and Valerianic Acid with [3H]Glutamate Binding to Rat Synaptic Membranes. *Evidence-Based Complementary and Alternative Medicine*, 2011; 1-7.
15. Tang JY, Zeng YS, Chen QG et al. Effects of Valerian on the level of 5-hydroxytryptamine, cell proliferation and neurons in cerebral hippocampus of rats with depression induced by chronic mild stress. *Zhong Xi Yi Jie He Xue Bao*, Mar, 2008; 6(3): 283-8.
16. Neamati A, Chaman F, Hosseini M, Boskabady MH. The effects of Valeriana officinalis L. hydro-

- alcoholic extract on depression like behavior in ovalbumin sensitized rats. *J Pharm Bioallied Sci.*, Apr, 2014; 6(2): 97-103.
17. Jung HY, Yoo DY, Kim W et al. Valeriana officinalis root extract suppresses physical stress by electric shock and psychological stress by nociceptive stimulation-evoked responses by decreasing the ratio of monoamine neurotransmitters to their metabolites. *BMC Complementary and Alternative Medicine*, 2014, 14: 476.
  18. Hendriks H, Bos R, Allersma DP, Malingre M, Koster AS: Pharmacological screening of valerian and some other components of essential oil of Valeriana officinalis. *Planta Medica*, 1981; 42: 62-68.
  19. Hendriks H, Bos R, Woerdenbag HJ, Koster AS. Central nervous depressant activity of valerianic acid in the mouse. *Planta Medica*, 1985; 1: 28-31.
  20. Bos R, Woerdenbag HJ, Hendriks H, et al.: Analytical aspects of phytotherapeutic valerian preparations. *Phytochemical Analysis* 7: 143-151, 1996.
  21. Santos MS, Ferreira F, Cunha AP, Carvalho AP, Macedo T: An aqueous extract of valerian influences the transport of GABA in synaptosomes. *Planta Medica*, 1994; 60: 278-279.
  22. Fernández S, Wasowski C, Paladini AC, Marder M. Sedative and sleep-enhancing properties of linarin, a flavonoid-isolated from Valeriana officinalis. *Pharmacology Biochemistry and Behavior*. February, 2004; 77(2): 399-404.
  23. Houghton PJ. The scientific basis for the reputed activity of valerian. *Journal of Pharmacy and Pharmacology*, 1999; 51(5): 505-512.
  24. Russo EB: Valerian. In: *Handbook of Psychotropic Herbs: A Scientific Analysis of Herbal Remedies in Psychiatric Conditions*. Binghamton, NY: Haworth Press, 2001: 95-106.
  25. Sudati, J.H., Fachinnetto, R., Pereira, R.P. et al. In vitro Antioxidant Activity of Valeriana officinalis Against Different Neurotoxic Agents. *Neurochem Res.*, 2009; 34: 1372.
  26. Hazelhoff B, Malingre TM, Meijer DKF. Antispasmodic effects of Valeriana compounds: An in vivo and in vitro study on the guinea pig ileum. *Archives of international pharmacodynamics*, 1982; 257: 274-278.
  27. Andreatini R, Sartori VA, Seabra MLV, Leite JR. Effect of valepotriates (valerian extract) in generalized anxiety disorder: a randomized placebo-controlled pilot study. *Phytotherapy Research*, 2002; 16(7): 650-654.
  28. Nunes A, Sousa M. Use of valerian in anxiety and sleep disorders: what is the best evidence? *Acta Med Port*. Dec, 2011; 24(4): 961-6. Epub.
  29. Pinheiro ML, Alcântara CE, de Moraes M, de Andrade ED. Valeriana officinalis L. for conscious sedation of patients submitted to impacted lower third molar surgery: A randomized, double-blind, placebo-controlled split-mouth study. *J Pharm Bioallied Sci.*, Apr 2014; 6(2): 109-14.
  30. Behboodi MZ, Rezaei E, Gholami SR et al. The effect of Valerian root extract on the severity of premenstrual syndrome symptoms. *J Tradit Complement Med.*, Jan 19, 2016; 6(3): 309-15.
  31. Jenabi E, Shobeiri F, Hazavehei SM, Roshanaei G. The effect of Valerian on the severity and frequency of hot flashes: A triple-blind randomized clinical trial. *Women Health*, Feb 16, 2017: 1-8.
  32. Leathwood PD, Chauffard F. Aqueous extract of valerian reduces latency to fall asleep in man. *Planta medica*, 1985; 2: 144-148.
  33. Schultz H, Stolz C, Muller J. The effect of valerian extract on sleep polygraphy in poor sleepers: a pilot study. *Pharmacopsychiatry*, 1994; 27: 147-151.
  34. Donath F, Quispe S, Diefenbach K, Maurer A, Fietze I, Roots I: Critical evaluation of the effect of valerian extract on sleep structure and sleep quality. *Pharmacopsychiatry*, 2000; 33: 47-53.
  35. Barton DL, Atherton PJ, Bauer BA et al. The Use of Valeriana Officinalis (Valerian) in Improving Sleep in Patients Who Are Undergoing Treatment for Cancer: A Phase III Randomized, Placebo-Controlled, Double-Blind Study: NCCTG Trial, N01C51. *J Support Oncol*, 2011; 9(1): 24-31.
  36. Bent S, Padula A, Moore D, Patterson M, Mehlung W. Valerian for sleep: a systematic review and meta-analysis. *Am J Med.*, Dec, 2006; 119(12): 1005-12.
  37. Taibi DM, Landis CA, Petry H, Vitiello MV. A systematic review of valerian as a sleep aid: safe but not effective. *Sleep Med Rev*, Jun, 2007; 11(3): 209-30.
  38. Razlog R, Pellow J, White SJ. A pilot study on the efficacy of Valeriana officinalis mother tincture and Valeriana officinalis 3X in the treatment of attention deficit hyperactivity disorder. *Health SA Gesondheid (Online)* vol.17 n.1 Cape Town, 2012.
  39. Chakma A, Ghosh MS. Fragmenta de viribus medicamentorum positivis sive in sano corpore humano observatis. *Indian J Res Homoeopathy* 2014; 8:177-9.
  40. Allen H C. Allen's Keynotes Rearranged and Classified with Leading Remedies of the Materia. B. Jain Publishers (P) Ltd, New Delhi, 2002.
  41. Nash E B. Leaders in Homoeopathic Therapeutics. B. Jain Publishers (P) Ltd, New Delhi, 2013.
  42. Boericke W. Boericke's New Manual of Homeopathic Materia Medica with Repertory: third revised & augmented edition based on ninth edition. B. Jain Publishers (P) Ltd, New Delhi, 2010.
  43. Boger CM. A Synoptic Key of the Materia Medica. B Jain Publishers Pvt Ltd, 2008.
  44. Clarke J H. A Dictionary of Practical Materia Medica. B. Jain Publishers (P) Ltd, New Delhi, 2005.
  45. Willey LB et al. Valerian overdose: a case report. *Veterinary and human toxicology*, 1995, 37: 364-365.