

## A Review of Herbal Medicine Used for Epilepsy Treatment

Sagar Kashinath Khokale<sup>1\*</sup>, Mohit Madhukar Jadhav<sup>2</sup>,  
Chetana Krushnaro Shinde<sup>1</sup>, Harshali Raosaheb Ahire<sup>3</sup>  
and Sakshi Rajendra Chaudhari<sup>4</sup>

<sup>1</sup>Department of Pharmaceutics, Sandip Institute of Pharmaceutical Sciences, Nashik, India.

<sup>2</sup>Department of Pharmaceutics, Siddhi's Institute of Pharmacy, Kalyan, India.

<sup>3</sup>Department of Pharmaceutical Quality Assurance, Sandip Institute of Pharmaceutical Sciences, Nashik, India.

<sup>4</sup>Department of Pharmaceutical Quality Assurance, Mahavir Institute of Pharmacy, Nashik, India.

<http://dx.doi.org/10.13005/bbra/3527>

(Received: 09 January 2026; accepted: 30 March 2026)

The field of herbal medicine as a therapeutic approach for epilepsy. India has a large population of over 10 million people who suffer from epilepsy. Research in this area has mostly focused on studying the spread of the disease, its genetic links, and testing the effectiveness of traditional antiepileptic medications (AEDs), typically using animal models. However, this study specifically focuses on herbal medications, recognizing its historical importance and potential therapeutic advantages in the treatment of epilepsy. The exploration involves evaluating the existing state of research, emphasizing the necessity for more thorough investigations into the effectiveness and safety of herbal therapies. This abstract emphasizes the significance of combining traditional knowledge with modern scientific investigation. It argues for more research, collaboration, and funding to enhance our comprehension of how herbal drugs work and how they can be integrated into mainstream epilepsy treatment approaches. The objective is to contribute to a more varied and comprehensive approach to managing epilepsy, which includes both traditional medications and natural therapies.

**Keywords:** Antiepileptic; Biomarkers; Electro-genesis; Epilepsy; Neurological disease.

---

Epilepsy is a prevalent neurological disorder that leads to substantial medical and social burden. Epilepsy is defined by the occurrence of repeated, typically spontaneous, epileptic seizures, together with the cognitive, psychological, and social effects that result from this illness. Seizures can cause abnormal sensations, emotions, and actions due to disruptions in brain activity. Additionally, they may occasionally induce convulsions, atypical movements, and a state of unconsciousness. Epilepsy is a neurological

condition marked by repetitive, spontaneous seizures that are not triggered by any specific cause. These seizures are caused by atypical and excessive electrical activity in the brain, resulting in a transient disturbance of regular brain function. Epileptic seizures can present in diverse manifestations, impacting behavior, consciousness, feelings, or motor coordination. The disorder can arise from several etiologies, such as genetic factors, brain injury, infection, or structural anomalies. The diagnosis process usually entails a thorough

\*Corresponding author E-mail: sagarkhokale14@gmail.com

assessment of an individual's medical background, symptoms, and diagnostic examinations, such as electroencephalograms (EEGs). Typically, treatment involves the administration of antiepileptic drugs, making changes to one's lifestyle, or, in certain instances, resorting to surgical procedures. The criteria for diagnosing epilepsy include: seizures happening more than 24 hours apart; one unprovoked (or reflex) seizure with a likelihood of comparable future seizures as the general recurrence risk (at least 60%) after two unprovoked seizures during the next 10 years; and seizures occurring as symptoms of a recognized epileptic syndrome.<sup>1-3</sup> An epileptic seizure is a temporary event characterized by aberrant, excessive, or synchronized neuronal activity in the brain, which leads to the manifestation of signs and/or symptoms.

#### **Classification**

##### **I. Partial seizures**

A. Simple seizures (Without impairment of consciousness)

1. With motor symptoms
2. With special sensory or somatic sensory symptoms
3. With psychic symptoms

B. Complex seizures (With impairment of consciousness)

1. Simple partial onset followed by impairment of consciousness
  2. Impaired consciousness at onset
- C. Secondly generalized (Partial on set evolving to generalized tonic-clonic seizures)<sup>4</sup>

##### **II. Generalized seizures**

- A. Absence
- B. Myoclonic
- C. Clonic
- D. Tonic
- E. Tonic-clonic
- F. Atonic

#### **Partial Seizures**

Common, 80% patients' simple partial seizures: do not cause loss of consciousness.

#### **Signs & symptoms**

Motor – convulsive jerking, chewing motions, lip smacking  
Sensory & somato sensory – paresthesia's, auras\

Automatic–sweating, flushing, pupil dilation

Behavioral–hallucinations, dysphasia, impaired consciousness (rare).<sup>3,4</sup>

#### **Pathophysiology**

Epileptic seizures occur due to an abnormally high and prolonged firing of a cluster of neurons. All epileptic syndromes are characterized by a consistent increase in neuronal excitability, which is a trait that is shared by all of them. There are a number of potential causes that might be associated to abnormal cellular discharges. Some of these causes include trauma, oxygen deprivation, malignancies, infections, and metabolic derangements. In spite of this, about half of the individuals who have epilepsy do not display any of the distinguishable symptoms associated with the condition. The etiology and pathophysiological mechanisms of certain types of epilepsy, such as those resulting from neuronal migratory abnormalities and monogenic epileptic syndromes, have been largely elucidated. The given text is the list.<sup>4,5</sup>

#### **Herbal Drugs Used in Treatment of Epilepsy**

Herbal medicines are included in the category of complementary and alternative medicine (CAM), which is seeing a rising and broad interest around the globe. The subject of complementary and alternative medicine (CAM) known as herbal medicine is one that lends itself well to empirical research. There are a number of herbal therapies that have the ability to influence the central nervous system and the metabolism of the liver. This means that they have the potential to trigger seizures in epilepsy patients and interact with some medicines that are used to treat depression.<sup>5</sup>

#### **Nardostachys jatamansi (Jatamanasi)**

Epilepsy, hysteria, syncope, and mental debility are some of the conditions that have been treated using the roots and rhizomes of *N. jatamansi* DC. (Valerianaceae), which is included in Ayurvedic medicine. Within the experimental paradigm of generalized tonic-clonic seizures, the seizure threshold was dramatically raised by the ethanol extract of the *N. jatamansi* plant, while exhibiting minimal neurotoxicity. Sorry, but I need more information to provide a response. *N. jatamansi* exhibited significant anti-epileptic action via increasing the expression of inhibitory receptors and decreasing the levels of apoptosis-related proteins. The plant possesses a significant historical background in terms of its medical applications and has been highly esteemed for

many ages in Ayurvedic (Indian) and Unani (old Greco-Arab) systems of medicine. The scientific literature primarily consists of phytochemical and animal studies investigating the plant's effects on the nervous system. There have been few clinical investigations undertaken. The user's text is incomplete and cannot be rewritten in a straightforward and precise manner.<sup>5,6</sup>

**Cotyledon orbiculata (seredile, plakkie, impbewula)**

*C. orbiculata* L. (Crassulaceae) has been documented for its usage in treating epilepsy through the application of its juice. When it comes to the treatment of epilepsy, practitioners of traditional medicine in the Western Cape Province of South Africa use an infusion made from the fleshy leaves (oral communication). There is a possibility that the saponins found in the leaves of *C. orbiculata* belong to the triterpenoid superfamily. There is a possibility that the anticonvulsant action is helped along by the triterpene steroid that is present in *Cotyledon orbiculata*. When it comes to the treatment of epilepsy and other painful diseases, such as corns, warts, toothache, earache, boils, and other maladies, traditional practitioners in South Africa often make use of the medicinal plant known as *Cotyledon Orbiculata*. Nevertheless, the assertions made by traditional medicine practitioners regarding the therapeutic efficacy of medicinal plants are rarely subjected to scientific scrutiny. The user's text is enclosed in tags. Individual leaves can be consumed as a vermifuge, and their juice can be used for this purpose. Heated leaves are utilized as poultices for boils and have been employed in the treatment of epilepsy.<sup>7</sup>

**Nobilislinn**

The leaves of *L. nobilis* Linn. (Lauraceae) have been used to treat neuralgia, epilepsy. Studies on pharmacology have shown that eugenol and methyl eugenol have anesthetic, hypothermic, muscle-relaxant, and anticonvulsant properties. They have also been shown to have an antistress impact. Additionally, some  $\alpha$ -pine inhibits the auditorygenic seizures in rats. The anticonvulsant activity of *Laurus nobilis* Linn. Lauraceae leaf essential oil was assessed against experimental seizures. The oil has been utilized in Indian traditional medicine as an antiepileptic treatment. Essential oil protects mice from tonic convulsions

brought on by epilepsy, involving the three doshas of Pitta, Kapha, and Vata.<sup>8</sup>

**Bacopamonnieri (Bramhi)**

*B. monnieri*, a purported nootropic plant and herbal remedy from India. Frequently used to cure hoarseness, epilepsy, asthma, and insanity. It makes up a significant portion of medhyarasayana formulations.<sup>9</sup> *B. monniera* 300 mg/kg (oral) body weight/day for 15 days as an epilepsy medication reduces seizures and lessens peripheral nervous system damage.<sup>10</sup> Brahmi lowers the episodes of seizures and aids in the balancing of all three doshas. A healthy brain is maintained by Brahmi due to its Mahayana (increased intelligence) properties.<sup>14</sup>

**Rhizoma Pinelliae**

It is a tuber from the Araceae family (*Rhizoma ternate*, Thumb). Many studies were conducted to examine the anticonvulsant activity in relation to sedative/hypnotic medications. In accordance with the findings of the research, the ethanol fraction derived from *Rhizoma Pinelliae Praeparatum* (EFRP) have the capability to modify the progression of convulsive episodes, disrupt the seizure threshold, and/or prevent the spread of seizures. In addition to this, it demonstrated the capacity to extend the latency period and decrease the quantity of nikethamide (NKTM)-induced convulsion deaths. It provided pharmacological support for the use of *Rhizoma Pinelliae Praeparatum* in the treatment of disorders affecting the central nervous system as well as insomnia.<sup>11</sup>

**Taxus wallichiana (Himalayan Yew)**

Himalayan yew, *T. wallichiana* Zucc. is frequently used to treat epilepsy. The well-known anticancer drug is associated with the species *Taxus* (Taxaceae). The plant's leaves are used to make a herbal tea that helps with epilepsy and indigestion. *T. wallichiana*'s anticonvulsant efficacy was compared to that of the GABA-Agonist medication diazepam, an antiepileptic medication that is extremely successful at preventing seizures.<sup>12</sup>

**Sutherlandia frutescens (umwele, cancer bush)**

The aerial portions of *S. frutescens* R.Br. (Fabaceae) are widely used to treat epilepsy and convulsions in children. The administration of 50-400 mg/kg of *S. frutescens* shoot aqueous extract (SFE) intraperitoneally (i.e.) considerably postponed the start of antagonistic pentylenetetrazol

(PTZ)-induced seizures. The plant's aqueous extract (SFE, 50–400 mg/kg i.e.) also significantly reduced the seizures caused by antagonized picrotoxin (PCT).<sup>13</sup>

#### **Mode of action in treatment of epilepsy**

The aerial parts of the plant known as *Sutherlandia frutescens* R. BR., which belongs to the family Fabaceae, are used extensively in Indian traditional medicine for the purpose of treating, managing, and/or controlling a broad variety of human ailments, such as epilepsy and convulsions in children. Through the course of this research, we investigated the effectiveness of the plant's shoot aqueous extract (SFE, 25–400 mg/kg) in preventing seizures in mice that were brought on by picrotoxin (PCT), bicuculline (BCL), and pentylenetetrazol (PTZ). Diazepam and phenobarbitone used as benchmark anticonvulsant medications for comparison. *S. frutescens* shoot aqueous extract; considerably delayed the start of, and antagonized, pentylenetetrazol (PTZ)-induced seizures, just like the reference antiseizure medicines utilized.<sup>13</sup>

#### ***Ficus platyphylla* (Dell-holl)**

The bark of *F. platyphylla* (Moraceae) is used in traditional Nigerian medicine for many years to cure pain, inflammation, depression, epilepsy, and psychoses. The bark's phenolic extract has sedative, potentially neuroleptic, analgesic, and anti-inflammatory qualities. Saponins, the primary constituents of the crude extract, are thought to possess significant actions within the central nervous system.<sup>14</sup>

#### ***Withaniasomnifera* (Ashwagandha)**

However, the latency of forelimb clonus with rearing was not lowered when the root extract of *W. somnifera* was administered irregularly for seven days in conjunction with a lithium pilocarpine challenge. This delayed the animal's mortality by as much as sixty percent. Additionally, *W. somnifera* was taken in addition to the typical antiepileptic medications. Combining *W. somnifera* with these commonsagents allowed the combination to provide effective protection without causing any deaths by lowering the effective dose of clonazepam and diazepam.<sup>1</sup> Ashwagandha Rishta, a traditional Ayurvedic formulation, is used as a cure for many conditions such as epilepsy, syncope, unmada (psychosis), and apasmara (epilepsy). It has been demonstrated by recent research in animal models that n-3PUFAs can increase the threshold

for epileptic episodes. The native plant known as Atasi (*Linum usitatissimum* Linn.) is used as medicine.<sup>14</sup>

#### **Sanctum**

Grass leaves the ethanolic extract of *Ocimum sanctum* (OS) is utilized to treat intraperitoneal haloperidol-induced catalepsy (1.0 mg/kg). The Lamiaceae family includes it. A number of groups were assigned to albino mice. Every group has six creatures in it. Following single and repeated dosage administration for seven days, as well as thirty minutes before to the administration of haloperidol, the reference drugs scopolamine (1.0 mg/kg) and ondansetron (0.5 and 1.0 mg/kg) as well as the test drug OS (at 1.75, 4.25, and 8.5 mg/kg) were examined. An ethanolic extract of OS may have a protective effect against thaloperidol-induced cerebral palsy, as shown by the outcomes of the study. It is According to previous studies, *Ocimum sanctum* L., which is also known as tulsi (which is a synonym for *Ocimum tenuiflorum* L.), is a popular herb that is used in Ayurvedic medicine.<sup>14</sup> It has a wide range of neuromodulator effects, one of which is the capacity to prevent seizures in models of acute convulsions. Its usage in traditional medicine to treat epilepsy is common in India. Its involvement in the model of persistent seizures and its potential interactions with more recent antiepileptic medications are unknown, which will increase its translational value.<sup>14</sup>

## **CONCLUSION**

In terms of disorders that impact the central nervous system, epilepsy is among the most common and widespread issues. Around eighty percent of epileptic patients are located in developing or low-income nations, despite the fact that epilepsy is a widespread condition all around the globe. Up to the second decade of the 20th century, the majority of epilepsy treatments were carried out using traditional procedures. Antiepileptic medications, on the other hand, are presently used as a general treatment for the purpose of preventing and controlling epileptic seizures. However, a variety of issues, such as challenges related to culture, socio demography, and economics, as well as the national healthcare systems, make it challenging for patients to receive

these treatments. As an additional point of interest, refractory epilepsy affects between thirty and forty percent of those who have epilepsy. The adverse consequences of atrial fibrillation (AED) have the potential to exacerbate a patient's condition or hinder them from responding to therapy. Even while epilepsy treatment has made significant strides in recent years, there is always room for improvement in terms of medical treatment, particularly with regard to accessibility, safety, and effectiveness. Considering that herbal remedies have been used for the treatment of epilepsy all over the globe for millennia, it is feasible that thorough study on herbal medicine and the phytochemical components that are found in plants of a variety of species and origins might lead to the development of brand-new antiepileptic drugs (AEDs). The identification of a great number of medicinal plants that have been employed for a considerable amount of time in a variety of cultures and areas has recently taken place. The majority of the phytochemical components that are found in these plants have been identified, and in some instances, their targets have been determined. Consequently, it is conceivable that a medicinal plant might result in the production of anticonvulsant medications that are not only effective but also affordable.

#### ACKNOWLEDGEMENT

The author would like to thank Sandip Institute of Pharmaceutical Sciences, Mahiravani, Nashik for granting the research work.

#### Funding Sources

The author(s) received no financial support for the research, authorship, and/or publication of this article.

#### Conflict of interest

The authors do not have any conflict of interest.

#### Data Availability Statement

This statement does not apply to this article.

#### Ethics Statement

This research did not involve human participants, animal subjects, or any material that requires ethical approval.

#### Informed Consent Statement

This study did not involve human participants, and therefore, informed consent was

not required.

#### Clinical Trial Registration

This research does not involve any clinical trials.

#### Permission to reproduce material from other sources

Not Applicable.

#### Author Contributions

Sagar Kashinath Khokale: Conceptualization, Methodology, Writing – Original Draft; Mohit Madhukar Jadhav: Data Collection, Analysis, Writing – Review & Editing; Chetana Krushnarao Shinde: Funding Acquisition, Resources, Supervision; Harshali Raosaheb Ahire: Editing, Funding Acquisition; Sakshi Rajendra Shinde: Visualization, Supervision, Project Administration.

#### REFERENCES

- Sucher NJ, Carles MC. A pharmacological basis of herbal medicines for epilepsy. *Epilepsy & Behavior*. 2015;52:308–318.
- Aghdash SN. Herbal medicine in the treatment of epilepsy. *Current Drug Targets*. 2021;22(3):356–367. doi:10.2174/1389450121999201001152221
- Liu W, Ge T, Pan Z, Leng Y, Lv J, Li B. The effects of herbal medicine on epilepsy. *Oncotarget*. 2017;8(29):48385–48395.
- He LY, Hu MB, Li RL, et al. Natural medicines for the treatment of epilepsy: bioactive components, pharmacology and mechanism. *Frontiers in Pharmacology*. 2021;12:604040. doi:10.3389/fphar.2021.604040
- Lin CH, Hsieh CL. Chinese herbal medicine for treating epilepsy. *Frontiers in Neuroscience*. 2021;15:682821. doi:10.3389/fnins.2021.682821
- Auditeau E, Chassagne F, Bourdy G, et al. Herbal medicine for epilepsy seizures in Asia, Africa and Latin America: a systematic review. *Journal of Ethnopharmacology*. 2019;234:119–153.
- Samuels N, Finkelstein Y, Singer SR, Oberbaum M. Herbal medicine and epilepsy: proconvulsive effects and interactions with antiepileptic drugs. *Epilepsia*. 2008;49(3):373–380.
- Abdollahi Fard M, Shojaii A. Efficacy of Iranian traditional medicine in the treatment of epilepsy. *BioMed Research International*. 2013;2013:692751.
- Schachter SC. Botanicals and herbs: a traditional approach to treating epilepsy. *Neurotherapeutics*. 2009;6(2):415–420.
- Muazu J, Kaita MH. A review of traditional plants

- used in the treatment of epilepsy amongst the Hausa/Fulani tribes of northern Nigeria. *African Journal of Traditional, Complementary and Alternative Medicines*. 2008;5(4):387–390.
11. Prasad SK, Jangra MK, Yadav AK. Herbal and synthetic approaches for the treatment of epilepsy. *International Journal of Nutrition, Pharmacology, Neurological Diseases*. 2014;4(1):43–52.
  12. Khan AU, Akram M, Daniyal M, et al. Awareness and current knowledge of epilepsy. *Metabolic Brain Disease*. 2020;35:45–63.
  13. Xiao F, Yan B, Chen L, Zhou D. Review of the use of botanicals for epilepsy in complementary medical systems—Traditional Chinese Medicine. *Epilepsy & Behavior*. 2015;52:281–289.
  14. Ghosh S, Sinha JK, Khan T, et al. Pharmacological and therapeutic approaches in the treatment of epilepsy. *Biomedicines*. 2021;9:470. doi:10.3390/biomedicines9050470